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SCHOOL OF PHILOSOPHY, PSYCHOLOGY AND LANGUAGE
SCIENCES

Sociolinguistic variation among Slovak immigrants in Edinburgh, Scotland

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Abstract

This thesis investigates sociolinguistic variation among highly fluent Slovak-English bilingual women and also long-term immigrants residing in Edinburgh, Scotland. The present study adds to existing literature on urban migratory experiences (Block, 2008; Forsberg, Lundell and Bartning, 2015; Howley, 2015), comparing cross-cultural variation of immigrants' speech with their local peers (Drummond, 2010, 2012; Meyerhoff *et al.*, 2009), by exploring linguistic and social constraints on language attitudes and accent acquisition among bilingual Slovak immigrants.

Sociolinguistic interview data were obtained from 32 women, ages 22-46: 20 Slovak immigrants, 8 Edinburgh Scottish participants, and 6 bilingual Slovak teachers of English in Slovakia. By considering linguistic and social factors that influence Slovak immigrants' variation, in this thesis I ask not just whether and to what extent do local language communities shape immigrants' identity, but also how their identity affects their language attitudes and pronunciation. The thesis pays particular attention to how implicit and explicit language attitudes combine to establish what Block (2008) called a "multidimensional" identity in immigrants. Further investigation establishes a link between identity and production (Redinger and Llamas, 2014; Podesva *et al.*, 2015) by drawing on the variationist sociolinguistic methodologies set out by Labov (1966, 2001, 2006).

Implicit language attitudes were collected via a Verbal Guise Task (VGT), during which participants evaluated speakers of foreign and native English accents (Campbell-Kibler, 2006; McKenzie, 2015; McKenzie and Carrie, 2018). Explicit attitudes were collected via a questionnaire designed to elicit attitudes in a casual setting (Dörnyei and Csizér, 2012). The combination of methodologies revealed that immigrant participants in the study held complex attitudes and motivations in relation to their host country. The results for language attitudes suggested that long-term Slovak immigrants experienced shifts to their identity while residing in Scotland, with most adopting a transnational identity that made them amenable to local language communities while maintaining connections with their home country. Their identity represented a degree of integration with Scottish communities, but transnational immigrants often felt separate from both home and host countries as a result.

The present study also explores connection between identity and production which is now well recognised (Kobiałka, 2016; Regan, 2016; Regan and Ni Chasaide, 2010; Bucholtz, 2011). Immigrant participants' pronunciations of FACE and GOAT vowel lexical sets (Wells, 1982) were evaluated in comparison to two language groups that represented different standards of pronunciation: native Scottish participants in Edinburgh, with more monophthongal pronunciations (Schützler, 2015); and English-Slovak bilinguals residing in Trnava, Slovakia, whose vowel productions were highly diphthongal and similar to Received Pronunciation (RP) constructions. Comparative study of pronunciations revealed that the immigrants' FACE and GOAT realisations were relatively more monophthongal than the non-immigrant Slovak group, yet more diphthongal than the native Scottish group – effectively making immigrant Slovaks' mean pronunciations separate and distinct from both native standard varieties. However, the immigrant's pronunciations varied widely, and data modelling revealed associations between key social factors and pronunciation. Settings of high formality, strong European and Slovak identities, and intentions to return to Slovakia were associated with relatively more diphthongal pronunciations. Decreased formality, strong Scottish identities, and lack of formal education before immigration were associated with relatively more monophthongal pronunciations.

Key findings in the study reinforce observations of multi-cultural identities in long-term Slovak immigrants. Drawing on work that explores variation in language attitudes (Clark and Schlee, 2010) and production in migratory settings (Meyerhoff and Schlee, 2014), I argue that there is a tendency for immigrants to shape their multi-cultural identities in response to linguistic and social contexts. However, internal contexts such as self-definition were equally important in shaping identities, which in turn affected language attitudes and pronunciation.

Lay Summary

Little attention has been paid to how immigrants' transnational experiences impact their everyday judgments of their accents and their identity. Shortly upon their arrival, immigrants' decisions, social networks, and their language use at home shape their professional and personal standings. This study indicates that immigrants who do not hold strong familial ties to the local speech community, e.g. via marriage or partnership, predominantly favour being labelled as *European* or *Slovak* instead of *Scottish*. These "international women" maintain professional ties with the Scottish community while also keeping close social ties to their home country, as well as to other international residents in Scotland.

This study builds on existing literature that focuses the extent to which identity and language attitudes are associated with participants' acquisition of local language norms. The accents under investigation consisted of the English language education standard, Received Pronunciation (RP); the dialect of the local language community, Edinburgh English (marked as Scottish Standard English, SSE); and accented English speech from self-identified "integrated" and "non-integrated" Slovak immigrants. The previously mentioned ties to home and host countries are represented by the immigrant participants' attitudes toward their local language community, as opposed to the attitudes acquired before immigration, i.e. during formal English language instruction. The results suggest that the immigrants in the study held biases towards accented English in terms of both attractiveness and prestige. They appeared to find a non-integrated immigrant speaker as more socially attractive than an integrated immigrant, although both non-native speakers are rated with low status. Interestingly, Slovak immigrants in this study follow the same general pattern as their Scottish peers, where both groups evaluate RP English as the most prestigious but the least attractive variety. In addition, most immigrants in the study still consider RP as a model accent choice despite their years of residence.

The second part of the study investigates the extent to which Slovak immigrants acquire linguistic features of the local Edinburgh English accent variety. The patterns in question are the pronunciation of FACE and GOAT vowel lexical sets (Wells, 1982). The results show that L2 speakers acquired only a limited number of their local variants, regardless of their length of stay in their host country. The immigrants' mean vowel realisations are significantly different from the native Scottish participants (monophthongal realisations) and fluent native-Slovak bilinguals in Slovakia (diphthongal realisations). The key finding in regard to accent acquisition is the effect

of speech style, where different speech styles are strongly associated with different vowel productions but for the immigrant group only. However, there is notable variation between immigrants' speech styles, where less formal styles (interview) are associated with relatively more monophthongal productions and more formal speech styles (word list) with more diphthongal pronunciations. This finding was interpreted as evidence that the immigrants use phonetic inventories that represent a continuous phonetic space between the different types of 'native-like' productions learned before and after immigration. Other social factors highlight the complexity behind speakers developing their repertoire. Factors such as accent aim, amount of formal English instruction, and age of first English instruction are influences representing pre-immigration language exposure and education; while factors such as the decision to remain in Scotland, self-evaluated Scottish accent level, and English use in social settings are influences exclusively from the host country. Though individually the factors have small effects on the data models, combinations of these social factors are key to predicting both pronunciation and language attitudes among the immigrant participants.

The current study has demonstrated that associations between accent acquisition, identity, and language attitudes are rich and long-lasting. Previous research has acknowledged that immigration from Eastern Europe does not follow a simple or direct route to integration in their host countries, and that relationships between language and identity are often ambiguous and murky. Results from the present study highlight the interconnected nature of these relationships, and model the connections between identity, attitudes, and pronunciation to reduce some of that murkiness. With this model and new tools in hand, future researchers can explore new avenues of migration study that have immediate and significant impact on an increasingly globalised world.

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Declaration

I declare that this thesis has been composed by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. The presented thesis is the result of my own work, except where stated otherwise by reference or acknowledgement.

Zuzana Elliott

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Chapter 1: Introduction

This chapter sets out a picture of how this study came to be inspired, and addresses the background and rationale for this research. It introduces the purpose of this study by focusing on the current research problems in the sociolinguistic and second language acquisition (SLA) migration fields, highlights the research questions and finally presents an overview of the following thesis chapters.

The present study explores language and cultural adaptation of immigrant women in Scotland by investigating the influences which affect their language attitudes and production of the FACE and GOAT lexical sets (Wells, 1982). Immigrants decided to live in Scotland with expectations that their lives would be new and “better” (O’Reilly and Benson, 2009, p. 1), and they arrived with different levels of preparation, knowledge, and experience. Because immigrants’ home culture often presents hurdles to cross-cultural adaptation, an important aspect of immigration is often the need to shift one’s cultural identity to accommodate new standards of their host country (Kobiałka, 2016). With the recent immigration wave in the UK, it is not uncommon for individuals to be confronted about their non-British accents: Central and Eastern European nationals are often targeted for their pronunciations, where speech with non-immigrants prompts reactions ranging from innocuous questions (“What is your accent? Where are you from?”) to outright abuse. Central and Eastern European accents are often discussed and stereotyped in media as well as private and public venues through their linguistic and cultural practices (*ibid.*). The study is also partly motivated by recent political changes in the UK: data collection was carried out shortly before the Brexit referendum in 2016, making this study an investigation of the

immigrant experience at a time when immigration is at the forefront of the British public discourse.

Second language (L2) speakers have widely employed English as a *lingua franca* to speak with individuals from different countries, who have learned English as a foreign language to communicate with first and second language speakers (McKenzie, 2010, p. 2; Jenkins, 2009; Howley, 2015). Decades of previous research in social psychology and sociolinguistics established norms on how L1, L2, and foreign language speakers perceive non-native accents (Garrett, 2010), where non-standard or non-native accents have been known to negatively affect immigrants' professional or academic success (Lippi-Green, 1994, 2012). Focusing on the role of socio-psychological aspects, the present study contributes to the existing research on sociolinguistics and migration issues by investigating Slovak immigrants' acquisition of variants similar to their local non-Slovak peers, the role of social factors on their speech, and the link between language attitudes, identity and Scottish accent acquisition. This study incorporated both qualitative and quantitative methods to shed light on how these subfields are interconnected and found that immigrants' successful integration into the local language community is often associated with their personal and professional motivations (Regan, 2013) and identities (Norton, 2013). Findings from the qualitative study provide further insights into immigrants' choices and socio-psychological factors which influence their use of the local vernacular features.

The aims of this thesis include 1) a theoretical understanding on how language attitudes and identity are linked with immigrants' pronunciations, and 2) an empirical analysis to investigate Scottish accent acquisition and language attitudes among long-term immigrants, and how that could be applied to further sociolinguistic research. This study also provides insights into relationships between migration, language production, language

attitudes and identity, and contributes towards the sociolinguistic research which concentrates on multilingualism in Edinburgh, Scotland. The research is motivated by a current lack of similar comparative approaches in sociolinguistic research (Block, 2008).

1.1 Research questions

The present study is supported by a wide range of literature and sociolinguistic theories, which enables the study to perform a mixed method analysis of language attitudes, identity, and pronunciation. However, the overall theme of the study is the examination of long-term immigrants' experiences as they face difficult choices surrounding the idea of permanent resettlement and the perceived erosion of their home culture. As a result, the research questions examine each stage of their experiences, building on social and phonetic observations to discover interactions between perception and production.

1.1.1 What is the role of identity in Slovak immigrant women's adaptation to the local language community?

The combination of cultural values from home and host countries were explored to determine immigrant participants' cultural identities. The concept of identity was explored early on in the study, supported by observations during the course of each interview as well as through self-evaluated measures. The present study acknowledges that the data collected on identity represents a relatively superficial picture – a two- or three-hour interview, however comfortable, would not provide the subtleties evident through long-term repeated discussions (cf. Norton, 2013). The variety and depth of their responses indicated that immigrant participants were still eager to provide this information. This study therefore chooses to examine participants' responses as a means of evaluating their identity

in the face of cultural assimilation. After qualitative and quantitative data were collected on immigrant participants' identities, the responses were used as factors in later analysis of language attitudes and vowel pronunciation.

1.1.2 To what extent do Slovak immigrants evaluate L1 and L2 varieties similarly to their native Edinburgh peers?

Analysis of language attitudes has incorporated data from both explicit and implicit attitudes (Campbell-Kibler, 2006; Garrett, 2010; McKenzie, 2010; McKenzie and Carrie, 2018; McKenzie and Gilmore, 2017; Soukup, 2009). Explicit statements and scores are important indicators of language attitudes, as they represent what immigrant and native participants present to the public. The present study capitalises on this definition as data collection was carried out in a single session for each participant, meaning that participants were effectively speaking to a stranger – and thus the “public” – about their perceptions. In contrast, implicit attitude statements are important because they represent the essence of how participants process experiences with respect to identity. Implicit attitudes are unconscious by definition: although implicit attitudes may be susceptible to conscious analysis, particularly through dedicated self-reflection, most interactions with speech communities do not require significant introspection. The combination of explicit and implicit attitudes is meaningful in that it reveals the relationship between “personal” and “public” attitudes, whether they are in complementary or conflicting alignment.

Comparing language attitudes held by native Scottish and immigrant Slovak participant groups indicates how immigrant participants adapt to native perceptions of local speech communities. The present study directly analyses both attitude types. The study also incorporates a task assessing participants' knowledge and use of words of local origin, which

explores passive awareness and active use as aspects of implicit and explicit language attitudes, respectively.

1.1.3 To what extent do Slovak immigrants acquire varieties of their local language community?

The present study uses the vowels of the FACE and GOAT vowel lexical sets (Wells, 1982) to represent the SSE variety found in Edinburgh, and data is collected to examine vowel quality. To examine the degree of FACE and GOAT vowel acquisition, the present study considers the immigration experience as a collection of pre- and post-immigration factors. Variables under investigation include linguistic contexts, self-evaluated identity, and social factors incorporating pre- and post-immigration experiences. Observations of immigrants' pronunciation are made in relation to observations of similar pronunciations made by native Scottish residents and by English-Slovak bilinguals living in Slovakia.

1.1.4 Can language attitudes data reveal anything about immigrants' acquisition of local language norms?

The final research question represents a logical step after collecting data on attitudes and pronunciation separately. By incorporating both attitudes and pronunciation data, the study can examine if identity plays a role in both attitudes and pronunciation, particularly with immigrant participants. I hypothesize that identity plays a role in how immigrant participants process their experiences, and that the meanings formed as a result are associated with how the participants perceive and integrate with their local language communities. To test the hypothesis, the present study uses a case study of two immigrant

participants with highly dissimilar pronunciation patterns to collect data on associations between identity, perception, and production.

1.2 Thesis structure

The thesis is organised as follows. Chapter 2 reviews the existing literature relevant to the study, setting the context for how the present study explores the immigrant experience. The chapter begins with a brief review of the history of Slovakia, especially the historical and social events that occurred during the immigrant participants' lifetimes. The introduction then covers the linguistic contexts faced by Slovak immigrants, including an analysis of phonemic systems for mid vowels and diphthongs in both Slovak and Scottish English. This section also reviews the standards of modern FL instruction in Slovakia, particularly standards of formal English language instruction, up to an observation of present-day educational methodologies and texts. These contexts form a map of the linguistic journey experienced by most immigrant Slovak participants in the present study.

Following the analysis of phonemic systems between Slovakia and Scotland, the literature review then covers modern migration and migration studies, especially as migration applies to the European A8 countries, i.e. Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, and Slovakia. This section reviews studies that observe associations between given social factors and pronunciations, and provides an overview of variationist linguistic research. After reviewing literature on variationist theory and factors commonly associated with speech variation, this section introduces analysis of motivations and attitudes behind migration, ultimately resolving into the development of L1 and L2 identities among immigrants. Studies taking place in Edinburgh are a particular focus of this part of the literature review. The chapter concludes by reviewing literature that begins to

explore links between identity, language attitudes, and speech production, as these links form the basis of the present study.

Chapter 3 reviews the general methodologies used throughout the whole of the data collection, including an outline of the participant groups and the general tools used for testing. The first part of the questionnaire used to collect data on participants' backgrounds is explored, with discussion on how these variables will be used in subsequent analysis. This chapter also covers the results from the pilot study as well as the advanced statistical procedures used in the present study.

Chapters 4-7 outline methods and the results from data collection for identity, perception, and production studies. Chapter 4 examines the development of identity among immigrant participants, incorporating self-assessed identity scores to picture how immigrants view themselves as international women (Block, 2008), followed by the qualitative analysis. This chapter uses observations, excerpts, and self-rated scores to examine the identity factors in depth. Chapter 5 examines the language attitudes held by native Scottish and immigrant Slovak participants, incorporating quantitative analysis via a Verbal Guise Task (VGT) followed by qualitative analysis. This chapter also includes results from the knowledge and use of words of local origin (KUWLO) task, which outlines participants' awareness and active use of words of local origin. Chapter 6 reviews the methods and results from the analysis of vowel production for FACE and GOAT lexical sets (Wells, 1982). This task evaluates how more monophthongal and more diphthongal vowel realisations are associated with different social factors, self-evaluated identity scores, and levels of formality. Finally, Chapter 7 examines how a case study between two immigrant participants demonstrates connections between the results from previous chapters.

The latter sections of Chapters 4-7 discuss the results outlined in the chapter, answering each of the research questions to review the impact of the findings. The Discussion sections for each chapter begins with an exploration on why multi-cultural identities play a significant part in immigrant participants' lives after immigration. Building on this, each Discussion section ties the results with one of the research questions for the present study. Chapters 5-7 conclude by linking their discussions with the previous chapter, making each chapter a tier contributing to the larger picture of connections between identity, attitudes, and speech production.

The dissertation closes with Chapter 8, which summarises the final conclusions and implications of the study. This chapter assesses the impact that the present study has on contemporary variationist research, and reviews how interactions between pronunciation, language attitudes, and identity serve to benefit socio-phonetic migration analysis. The chapter also examines potential drawbacks of the study design and analysis, and indicates directions of future research.

Chapter 2: Literature review

2.1 Slovakia: Geographical and historical overview

In order to understand who the immigrant participants in this study were in the past and where they came from, this chapter will briefly outline Slovakia's geographical position, demographics, and economic situation.

Figure 2.1: Map of Slovakia (source: <http://www.armchamb.sk/slovakia.html>, accessed in May 2017)



Slovakia is situated in the geographical centre of the Europe, bordering the Czech Republic and Austria to the west, Poland to the north, Ukraine to the east, and Hungary to the south. Slovakia covers an area of 49,035 km² with a population of 5.4 million in 2015 (Europa.eu). Slovakia is rich in history; perhaps one of the key aspects to mention here is that Slovakia formed part of the Czechoslovak state from 1948 and it was governed by the

communistic regime until 1989, which marked the end of the Communist period via the Velvet Revolution.¹

Slovakia separated from the Czech Republic in 1 January 1993, and formed an independent state with the capital Bratislava. Slovakia became a member of the European Union on April 1, 2004, and it has been a member of the Schengen area since 21 December 2007. Passports were no longer necessary to visit other countries in the EU, as the citizenship card indicating EU membership sufficed. Slovaks continued feeling the change of becoming European with the change of currency of euro, when Slovakia became a member of the European Monetary Union Euro Zone on 1 January 2009.

According to the Slovak National Census (2001), about 15% of the 5.4 million inhabitants stated an ethnic background other than Slovak. Although the official language is Slovak, there are numerous minority languages, such as Bulgarian, Croatian, Czech, German, Hungarian, Polish, Romani, Ruthenian, and Ukrainian (Grama, 2006, p. 18). The constitution grants minorities the right to name and codify their language and cultural institutions. Increased immigration and rights of travel proved to have a positive effect on the Slovak economy, as with Slovakia's accession to Europe the country reached its highest ever annual economic growth (8.9%) (*ibid.*). Despite EU membership and increased economic growth, the Slovak population has remained largely homogenous, with the vast majority of residents being Caucasian, Roman Catholic, and Slovak-speaking. Due to its integral part in the Slovak national identity, prescriptive standards of the Slovak language are strongly reinforced as indicators of social class and prestige. The following subchapter

¹ For more on Slovak history please see <http://www.birmingham.ac.uk/research/perspective/velvet-revolution-haughton.aspx>

outlines key Slovak phonetic and phonological systems associated with standard Slovak that are relevant to the present study.

2.2 Slovak phonetic and phonological systems

The present study focuses on Slovak vowel systems, with a particular focus on mid vowels.

The following sections outline features of Slovak vowels that are most relevant to the present study, namely vowels that may be leveraged as analogues to the FACE and GOAT lexical sets in English (Wells, 1982). For more information regarding Slovak vowel systems in full, see Pavlík (2004), Hanulíková and Hamann (2010), Kráľová (2010), and Gregová (2008).

2.2.1 Slovak vowels

The Slovak vowel system consists of five short /i, e, ɛ, ɔ, u/ and five long vowels indicated by accents, /i:, e:, ɛ:, ɔ:, u:/, where phonemes /i/ and /i:/ correspond to <i, y> and <í, ý> graphemes, respectively. The phoneme /ɔ:/ is part of the Slovak vowel system, but occurs only in loanwords. The following subsections focus on the mid vowels /e(:), ɔ(:)/ in particular, and outline how long and short vowels are generally similar in terms of vowel quality, with some differences in pronunciation.

Slovak long monophthongs and diphthongs have a duration that is generally twice that of the short vowels (Sičáková, 2002, p. 44). Kráľ and Sabol (1989) suggested that differences in the openness of long and short vowels are less phonetically important, as one cannot consider long vowels as either more open or more closed than their short counterparts (p. 201). Sičáková (*ibid.*) pointed that short vowels and their long counterparts are different phonemes, so changing vowel length in pronunciation has the possibility of

affecting meaning. For example, consider the role of vowel length in the nouns *sud* (“barrel”) - *súd* (“court”), *vila* (“villa”) - *víla* (“fairy”) (Sabol, 1977, p. 100).

2.2.1.i Slovak mid vowels

Most monophthongal vowels have both long and short counterparts, and many of these vowels display differences in vowel quality, or places of articulation, between the counterparts. The mid vowels that occur in Slovak are as follows, using orthographic forms of vowels to represent a phonemic contrast that exists in Slovak:

- *Mid front <e>, <é>*

<e> /e:/ and <é> /e:/ vowels differ in their quality based on the position of the tongue. The long <é> has a more frontal and higher tongue position than its short vowel counterpart (Hanulíková and Hamann, 2010). The pronunciation of <e> lies in between /e/ and /ɛ/ (Pavlík, 2004, p. 91), although some researchers claim that it is a more central vowel /e/ (Bilá, 2004, as cited in Gumanová, 2015, p. 51), whereas some argue that it is often merged with the relatively more open /ɛ/ (Hanulíková and Hamann, 2010). The present study acknowledges the differences of opinion about the pronunciation of Slovak /e/ in comparison to English vowel systems (compare the Slovak vowel charts in Figure 2.2 below). Taking into account previous findings, the present study will consider Slovak <e> to be most phonetically similar to the English DRESS vowel.

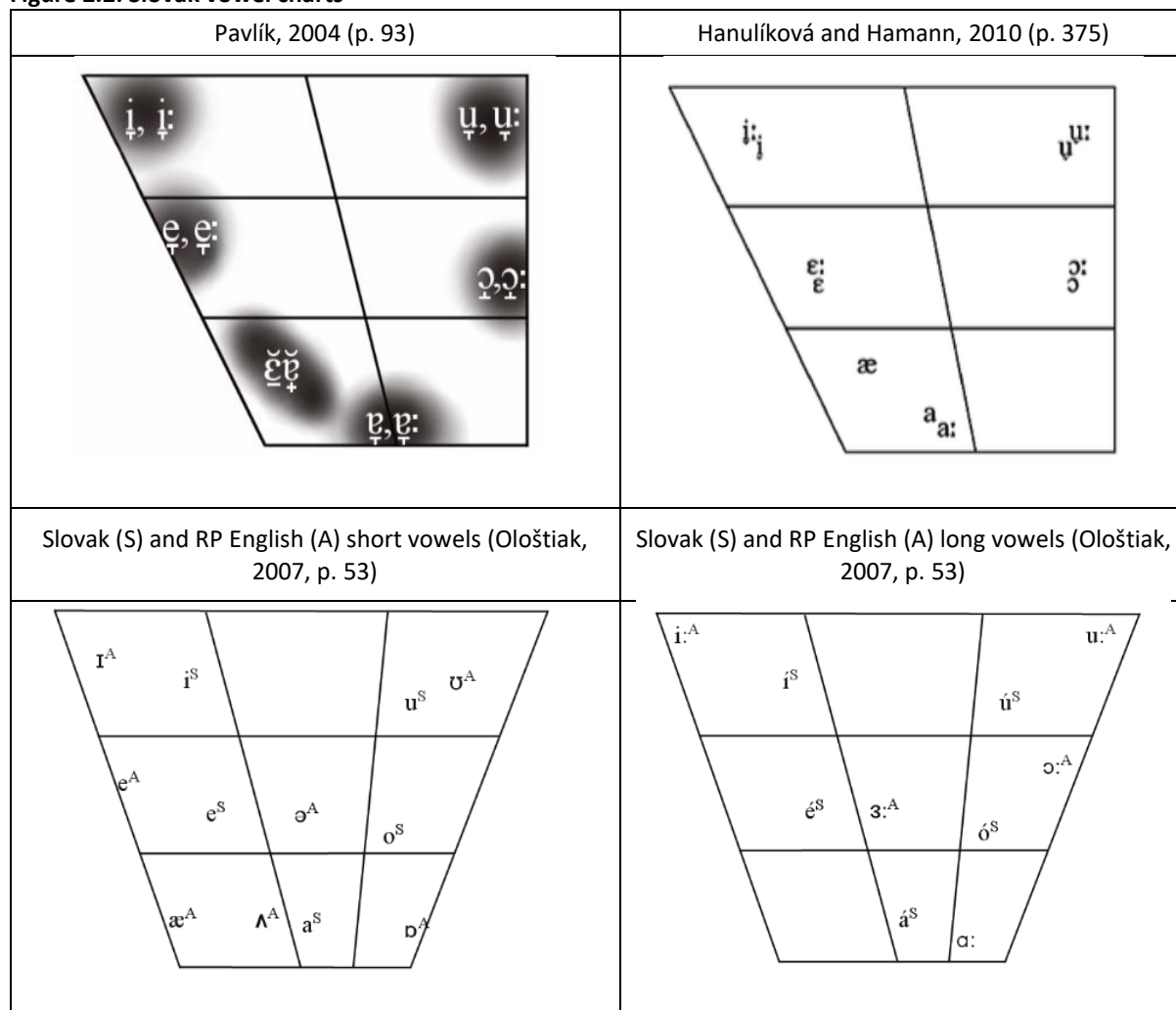
- *Mid back <o>, <ó>*

<o> /ɔ/ and <ó> /ɔ:/ vowels are positioned between the English /o/ and /ɔ/ vowels. In the vowel chart (Figure 2.2 for Pavlík, 2004), the vowels /ɔ/ and /ɔ:/ are positioned slightly lower than /e/ and /e:/ vowels. Gumanová (2015, p. 55) found that Slovak /o/ and RP English /ɒ/ are both produced similarly: they are situated around mid-close position, are both quite

back and close to each other (p. 56). However, Kráľová (2010, p. 44) and Sičáková (2002) stress that English [ɒ] is backer and lower than the relatively more centralised Slovak [o]. Long and short Slovak /ɔ(:)/ differ in their position and quality, as the longer vowel is more open than the short one. The short vowel is most phonetically similar to the English LOT /ɒ/ and the long one to THOUGHT /ɔ:/ vowels (Wells, 1982).

Though the present study focuses primarily on the FACE and GOAT lexical sets (Wells, 1982), the mid vowels reviewed above indicate that there are no Slovak vowel phonemes that are phonetically similar to English FACE or GOAT. Lenhardt (1977, as cited in Gumanová, 2015, p. 50) noted that “the two [Slovak & English] languages are so distant that there are no Slovak equivalents for any English vowel, but rather the closest corresponding sounds.” Slovak mid vowels may potentially be used as FACE or GOAT analogues by novice Slovak ELLs due to their proximity to English vowels, but the differences are enough to distinguish them from English vowels for more advanced learners. Slovak ELLs can therefore reasonably expect to develop a phonemic inventory for English vowels that is separate from their phonemic inventory for Slovak vowels, with very little overlap between the two in their mid vowels.

Figure 2.2: Slovak vowel charts



2.2.1.ii Slovak diphthongs

The Slovak language contains diphthongs but they differ from English diphthongs on several fundamental levels. There are four diphthongs in Slovak, <ia> /ia/, <ie> /ie/, <iu> /iu/, and <ô> /uo/. The first and most immediate difference from English is that Slovak has no diphthongs that start from middle position, or from the mid vowels explored in subsection 2.2.1.i. A second and more subtle difference is that the first part of a Slovak diphthong is shorter than the latter part (Roach, 2000). For example, for the English diphthong in *may*, /eɪ/, /e/ is longer and more pronounced than /ɪ/. Slovak diphthongs, e.g. /ia/ in *viac*, contrast because the second sound (/a/) is considerably longer than the first (Kaprál, 2014).

The first segments of Slovak diphthongs, such as non-syllabic /i/ in /ia/, /ie/, and /iu/, and /u/ in /uo/, are shorter, have reduced acoustic intensity, and are less vocalic than the second segment (Sičáková, 2002, p. 48; Pauliny, 1979). The diphthongs <ia>, <ie>, and <iu> depend on the preceding consonants, which is why they cannot appear at the beginning of a word; the diphthong [uo] can appear in initial position, as in *ôsmy* (Sabol, 1977, p. 100). They tend to occur after fricatives, plosives, and nasals.

2.2.1.iv <j> and <v> compared to FACE and GOAT

The most phonetically similar sounds in Slovak phonology to the English FACE and GOAT vowel lexical sets (Wells, 1982) are combinations of Slovak vowels. The apparent presence of phonetically similar sounds in Slovak to FACE and GOAT vowels opens the possibility of language transfer for Slovak-English bilinguals. Král (2005, p. 43) suggested that combinations of vowel + <j> (/j/) and vowel + <v> (/u/) are close to diphthongs, such as *dvaja* (“two”), and *stav* (“state”). Rubach (1993) made the case that /j/ and /u/ are glides that, when attached to preceding vowels /e, a/ (for /j/) or /a, o/ (for /u/), turn the monophthongal vowel into diphthongs – though later research (e.g. Gregová, 2016) contests the presence of glides in Slovak. In this manner, and most pertinent to the present study, the diphthongs in e.g. *peknej* (“nice”), or *otcov* (“fathers”), are similar to the SSBE vowels in FACE and GOAT, respectively. However, the presence of SSBE-like analogues in Slovak are an unlikely source for variation in FACE and GOAT lexical sets after Slovak immigrants’ immigration to Scotland. The following phonetic examination of these analogues examines their role in Slovak English language learners’ (ELLS’) production of FACE and GOAT lexical sets both before and after immigration.

2.2.2 Phonetic L1 influence on L2 production

A phonetic examination of FACE and GOAT analogues in the Slovak language supports the argument that Slovak immigrants who use /e:/ and /o:/ as monophthongal realisations of FACE and GOAT lexical sets in Scotland do not make these pronunciations as a result of L1 influence. When L2 speakers, including Slovak ELLs, begin learning a new language, anything that already exists in a similar form in their L1 eases learning (cf. Iverson and Evans, 2009; Flege *et al.*, 2003). For reasons that will be explored in greater detail in subchapter 2.3, English language instruction adheres to RP rules of pronunciation, with the FACE and GOAT lexical sets pronounced as diphthongs /eɪ/ and /əʊ/. For Slovak ELLs pursuing English language proficiency, Slovak phonology includes a few options for vowels that can be leveraged into RP-like production. There are long mid vowels in Slovak, /e:/ and /ɔ:/ (<é> and <ó>), but leveraging them into English pronunciation is problematic because they are phonetically different from RP FACE and GOAT diphthongs. Independent observations revealed that RP is the learning accent used in Slovak EFL courses (see section 2.3.3), so Slovak ELLs would probably not be exposed to English varieties that realise FACE and GOAT vowels as long monophthongs (e.g. /e:/ and /o:/ in SSE), nor would they produce long monophthongs in place of FACE or GOAT lexical sets. Two other options exist: that Slovak ELLs would leverage Slovak diphthongs to English pronunciation, or would combine two Slovak monophthongs to create an English-like diphthong. Since Slovak has phonetic diphthongs /ei/ and /ou/, spelled <ej> and <ou/ov>, that could be more feasible analogues to FACE and GOAT lexical sets, the former option seems easier and thus more likely to be implemented.

To test exactly how useful Slovak /ei/ and /ou/ function as analogues to FACE and GOAT lexical sets, a comparison of their acoustic phonetic properties is necessary. In SSBE, FACE and GOAT vowels are both closing diphthongs beginning from a mid-open position.

There is some variation in this pronunciation: /eɪ/ may start from a half-open or half-closed position, and /ou/ is frequently realised as [əʊ] (Hughes and Trudgill, 1996, p. 47-48). As an analogue to the FACE lexical set, Slovak <ej> begins in a similar mid-open front position.

Gregová (2016) argues that Slovak <j> is a palatal fricative, pronounced with the tongue in a very closed position, restricting air movement near the hard palate, making Slovak /ei/ a “closing” combination of phones (p. 76). Therefore, Slovak /ei/ acts as a relatively viable analogue to the SSBE FACE lexical set. The Slovak analogue to the GOAT lexical set, /ou/, starts from a position that is also mid-open but also more back than /ə/. The second vowel /u/, although phonemically a bilabial voiced fricative (*ibid.*), is phonetically a vowel glide, which has a much more frontal place of pronunciation than /ʊ/. However, the bilabial fricative does not take into consideration tongue position, and as the consonant is voiced it is possible to also have the tongue in high back position. The /ou/ is therefore an acceptable analogue to the SSBE GOAT vowel, making both Slovak phone combinations viable analogues that Slovak ELLs can leverage into English language production. Combined with the pressure to adhere to standards of RP in English language production, Slovak ELLs are more likely to use these phonetic diphthongs in their English language production instead of long monophthongs. The phonetic examination therefore provides an argument that Slovak immigrants who use /e:/ and /o:/ as monophthongal realisations of FACE and GOAT lexical sets in Scotland do not make these pronunciations as a result monophthongal analogues stemming from their L1.

2.2.3 Summary

Slovak learners of English likely draw on their L1 to produce new sounds when learning their L2 (cf. Iverson and Evans, 2009; Flege *et al.*, 2003). Although Slovak phonology supports long

vowels /e:/ and /o:/, there is no evidence to suggest that Slovak ELLs use these long vowels as analogues to FACE and GOAT lexical sets. Phonetic analysis of V+C combinations <ej> and <ou> reveal them as viable analogues to FACE and GOAT lexical sets. Although the lexical sets do not themselves exist in Slovak phonology, Slovak ELLs have phonetically similar productions to leverage into their pronunciation. The analysis also provides the argument that if Slovak immigrants in Scotland do produce monophthongal realisations of vowels in FACE and GOAT lexical sets (cf. Schützler, 2011), then this variation would not find its source in L1 influence. Another potential source of exposure to monophthongal FACE and GOAT vowel realisations is an English language instruction in Slovakia. The following subchapter assesses instructional methods and models used to teach English during the time periods most relevant to the immigrant sample in the present study.

2.3 English in the Slovak education system

This subchapter will review foreign language teaching practices in Slovakia before and after 2004, the year when Slovakia and other Central and Eastern European countries were accepted into the EU. It is necessary to explore the foreign language instruction in Slovakia prior to their arrival to the UK, in order to determine whether their L2 accent acquisition was a result of this education, L1 pronunciation, or L2 integration. When answering these questions, the following section takes a comprehensive view of English foreign language (FL) instruction in Slovakia to account for variation in the present study: immigrant participants in the present study arrived to Scotland anywhere from 5-18 years before the time of testing, and had anywhere from 0-21 years of formal instruction before immigration. To fully investigate the educational context applicable to all immigrant participants, this section

will briefly review the background of modern Slovak English FL education and current standards of English FL education in Slovakia.

2.3.1 EFL instruction in Slovakia: Communism and post-Communist periods

English foreign language (EFL) instruction in Slovakia before November 1989 was heavily directed by Communist government and politics. The period between 1970 until 1989 saw almost exclusive use of locally published FL textbooks, since Western English-speaking textbooks were not allowed (Thomas, 1999), and schools used only texts approved by the Slovak Ministry of Education (p. 22). The combination of political restrictions with prescriptive language teaching methods set the stage for future English FL practices: repetitive drills of spelling, grammar, and pronunciation. The coursework set no value to exploring language in an immersive setting, nor to addressing more than one variety of English in its instructional material. With the fall of Communism native-speaking English instructors and foreign-published instructional texts were welcomed into Slovakia, but the abrupt change of teaching methodologies brought its own difficulties. Many existing teachers used to direct instruction with prescribed curriculum were uncertain how to select the untested course books for their class (Butašová *et al.* 2007, p. 24), and the majority of native-speaking English instructors were unqualified and generally incompetent at implementing a successful curriculum (Tandlichová, 2008, p. 10-11). The combination of such rapid change without qualification or oversight led many English instructors to return to Communist-era repetitive and prescriptive teaching practices.

2.3.2 Adaptation to new FL instruction in Slovakia: Late 1990s to present day

Facing difficulties from differences in students' proficiency levels and in instructors' course syllabi with the influx of new teachers and materials, many instructors started to call for a common exam that would indicate proficiency levels needed for students to complete their FL instruction in secondary school. As a result, since the turn of the century FL instruction has been taught in all schools, and is typically a compulsory subject complete with a standard school-leaving examination, or "Maturita." Though the implementation of this test was not a perfect solution – Gadušová and Hartanská (2002) claimed that students' proficiency levels were still questionable even with the final-year Maturita, as nobody really was sure what the students' competency levels should have been achieved with this exam (p. 237) – it represented a successful step forward in standardising theoretical and practical FL instruction. The test was quickly recognised for its success, and Butašová *et al.* (2007, p. 24) mentioned that Maturita is now an important part of the foreign language education programme. As part of foreign language curricula, Maturita presently tests for language competency targets between CEFR B1 and B2 proficiency levels².

Students generally continue to study in a chosen foreign language from primary through secondary school. The size of a foreign language group tends to divide learners into the small groups of about 10 students per group, regardless of the school level. During primary school, Kubanyiova (2007) mentioned that foreign language instruction generally commences between the first to fourth grade, although at this early level FL instruction is not compulsory. The structure and language choices of early foreign language classes are

² CEFR (i.e. Common European Framework of Reference for Languages) outlines six levels of English language proficiency, ranging from basic to proficient levels. B1 and B2 make up the intermediate level ("English Independent User"), where B1 represents intermediate proficiency and B2 represents upper-intermediate proficiency. For more information see www.coe.int/lang-CEFR

dictated by the individual primary schools themselves. In 2013, the Ministry of Education named English as the first foreign language to be taught in primary schools. In 2016, the News Agency of the Slovak Republic (TASR.sk) reported that in 2014 the number of students learning English in primary school reached 95.9% of all students. Secondary schools generally offer a wider selection of foreign languages, as well as more advanced classes. Depending on the EFL curriculum of individual schools, grammar schools (“Gymnázium”) and other language-oriented schools can offer as many as three foreign languages, but often they specialise in one particular language, where subjects such as economics, geography, history, etc. are performed in it by (for example) both English- and Slovak-speaking FL instructors. All secondary school curricula make study in at least one foreign language compulsory for all students, whereas specialised secondary schools such as grammar or business schools tend to make compulsory study in at least two foreign languages (Kubanyiova, 2007). Among these more varied and advanced classes, Butašová *et al.* (2007) observed that English appeared to be the most offered and most popular foreign language across secondary school students, with 96.73% of observed students taking English language courses in some fashion.

In terms of students’ learning, Butašová *et al.* (2007) claimed that it is necessary to drill standard speech productions, even at the cost of hours of repetitive effort (p. 23). It seems that the receptive skills are generally preferred in schools over productive skills. Butašová and her colleagues noted that language instruction focused first on receptive skills, followed by productive skills; in addition, speech skills are taught before writing (*ibid.*). The development of key skills for foreign language education in secondary schools is more complicated due to the number of offered languages, and due to the vocational focus of many secondary schools. For example, grammar schools and hotel and business secondary

schools often offer more FL lessons per week, and supplement these skills by focusing on teaching humanities rather than natural sciences (Gadušová and Hartanská, 2002).

At university level, students tend to choose their foreign language as part of their compulsory credits. As Kubanyiova (2007) mentioned, a single credit-bearing course doesn't offer sufficient foreign language instruction to reach proficiency levels due to the lack of hours offered – typically about two hours per week for the duration of two semesters.

Although university-level instruction is provided by fully qualified Slovak- or English-speaking instructors, depending on the students' language competency, there are generally no standard syllabi to use with these FL courses. However, many Slovak universities offer BA and MA in English language and literature, and among the requirements for these degrees is an extended study of English usually lasting five years.

Private language institutions operate outside of state-run courses, and as such they fill many different niches. Kubanyiova pointed that not all private institutions are accredited, but most offer specific FL instruction. This could be for specific purposes, e.g. business English, conversational English, grammar, English for children, etc.; for a specific language variety, e.g. American English; or for a specific focus in language learning, e.g. conversational English. Private language institutions also vary in size and target audience, from large business units to lessons held in an individual's or couple's home, and instructors can be either bilingual or monolingual in the target language. Some even offer language courses connected with camps or travel trips and with learning the language in a naturalistic context, e.g. an English-language tour of London. However, Kubanyiova noted that "there are no restrictions in terms of the staff employed by these schools, a result of which is, understandably, a considerably higher proportion of unqualified teachers" (p. 110).

2.3.3 Observations of current English language instruction in Trnava, Slovakia



Figure 2.3: Trnava city centre (Source: <http://www.zhmao.sk/zhmao/clenovia/25-trnava.html>, accessed on 2 September, 2017)

To understand the context of present-day language instruction in Slovakia, I visited Slovak instructors of English directly. Through our meetings, I could explore their opinions towards students' preferences for English varieties, discuss which learning aspects cause the most difficulties for students, and what role(s) a language instructor fills from the students' perspective. I visited four language institutions but each one requested to remain anonymous, so this project will address these issues without naming individual institutions.

As Thomas (1999) stated, the role of the native-speaking English instructor has shifted in Slovakia over the past two decades, where they were originally viewed as inexperienced instructors to important role models for foreign language pronunciation. The role of the native speaker has always been that of an advantage for language learners, as learners had a chance to absorb their accent, grammatical rules, vocabulary and even to learn more about the native speaker's country. In the observed language institutions,

materials published exclusively by Oxford University Press and Cambridge University Press were often the only guidelines given to native-speaking English instructors, and these language institutions frequently allowed their instructors free rein to cover the aspects that they felt their students need for greater understanding. It was also noted that when native speakers lead the class, the recordings offered through the books are generally disregarded, while the NS teacher serves as an on-demand role model instead. Despite the independently-led classrooms, all interviewed instructors and course leaders agreed that the main aim is for the students to accommodate native speakers' speech in terms of their pronunciation, grammar, and use of vocabulary. When asked which English varieties were preferred, the answer was clear: the Southern Standard British English variety (SSBE), which mimics the recordings from the published instructional materials.

One of the instructors criticised the methodologies that they are expected to use, saying that although well structured, the methodologies feel somewhat stale. The instructor suggested that this was because the classes continue to use texts by Oxford University Press and Cambridge University Press, and that students' learning is mostly "repetitive and drilled" until the instructor judges that are comfortable to move to the next chapter. This practice, the instructor explained, failed to adequately prepare the students for deeper understanding of the material: although they learned the grammar and vocabulary of one unit, the instructor said her students complained about difficulties following the next section. Conflicts also arose with native-speaking (NS) but non-British English instructors. As the texts and recordings were exclusively in SSBE, students learned to be comfortable with one NS accent but not with another. For example, one mentioned that she unintentionally causes confusion when using her American accent in the classroom. For example, when she used the word "can't" in General American, [kænt], her students appeared to have

difficulties distinguishing it from “can,” [kæn], unless she pronounced its SSBE version [ka:nt].

All interviewed English language instructors were asked whether their students preferred the SSBE accent, and all agreed that their students unequivocally preferred SSBE over any other accents heard in English-language media. However, the instructors also emphasised that students with higher proficiency levels were more interested in vocabulary than pronunciation patterns. This was because they believed that learning vocabulary can help bring them closer to native speakers.

Along with individual choice in subject matter, the observed instructors also had individual preferences for their actual methodologies. One instructor, whose focus in the classroom was on pronunciation, said that it is her and her colleagues’ obligation to correct her students if they mispronounce items. An instructor from a different institution said that her students learn via a mix of old and new ways: some days, the instructor drills students for vocabulary and grammar, while on other days students use online sources to dedicate more time to pronunciation (using the *BBC Learning English* online platform) rather than other structures of language. In terms of the teaching materials used in the classroom, the *Headway* or *face2face* textbooks appeared to be most popular since they cover important listening exercises, have listening examples on CD or DVD, and their methodical structure is familiar, making them easier for either Slovak or English instructors to follow. A consequence of having the recorded material to hand was that any limitations in the recordings may be reflected in the classroom. The present study performed an analysis on the recorded model productions included with the *face2face* material, for example, and found that the productions by Slovak ELLs using this material were very similar to modelled productions. There was also relatively little variation among Slovak ELLs’ English

productions. The *face2face* material was notable due to the fact that the modelled productions almost exclusively used SSBE as the model accent, and did not model or explore other English varieties to an equal extent.

One method that did not appear to be in much use was essay writing, and skill seemed to be neglected for reasons of time management and preference: all four language instructors confirmed that this skill was least preferred among students and instructors, many of whom believed that it would not bring anything new towards communication.

2.3.4 Summary

Evaluations of historic and current English language instruction methodologies in Slovakia suggest that RP is the primary if not exclusive accent presented in pronunciation models to English language learners (ELLs). Although Scottish-accented media provides examples of different accents that can also be viewed as standard English, e.g. Standard Scottish English, this exposure would be infrequent and unsupervised compared to regular language instruction. The focus on prescriptivism in English language instruction in Slovakia combined with a relative lack of diversity in materials for modelling English pronunciations means that Slovak immigrants would almost certainly arrive to Scotland using RP norms of pronunciation.

Aside from sociolinguistic norms of the Slovak language and English language instruction in Slovakia, Slovak immigrants residing in Scotland must also accommodate the sociolinguistic pressures from their host country. The following subchapter outlines the sociolinguistic situation in Scotland in order to provide a background on the most pressing sociolinguistic influences affecting Slovak immigrants' speech and language attitudes.

2.4 Scottish English: Sociolinguistic situation in Scotland

Scotland is currently home for many language communities and languages, including but not limited to Polish, Slovak, Czech, Italian, Spanish, Cantonese, and Arabic (Lawson, 2014, p. 2). However, the historically longest established languages in Scotland have been Scots, Gaelic, and English. At the time of this writing, Gaelic is spoken mostly around the areas of Western Isles and to a limited degree in north-western parts of mainland Scotland, and many of its speakers live in or close to the Central Belt. But the relationship between Scots and English has traditionally been somewhat obscure, and researchers have long struggled to understand whether “Scots is a separate language, a cognate language (with some degree of mutual intelligibility with English), or a dialect of English” (Lawson, 2014, p. 3).

The linguistic history of Scots vs English in Scotland is beyond the scope of the present study, but for context it is enough to note that Scots derived much of its phonology from early Northern Middle English, which was spoken around northern England and southeast of Scotland (Maguire, 2012, p. 53). Scottish Standard English (SSE) developed as a result of the adoption of English by Scottish people from the 17th Century onwards, following Scotland’s loss of autonomy from England (Corbett *et al.*, 2003; McClure and Stuart-Smith, 2003). Adaptation of Scottish English by the Scottish upper classes meant that ‘Broad’ Scots became increasingly associated with lower social classes, resulting in the development of the bipolar SSE-Scots Continuum (Stuart-Smith, 2004), especially in urban areas (Stuart-Smith, 2003).

The continuum describes the range of variations between SSE, a form of Standard English with Scottish phonetic features; and vernacular Scots, which largely derives from historical Scots though with much English influence (Lawson, 2014; Macafee, 1985). However, the continuum also makes it difficult to account for differences between SSE and

Scots. Maguire (2012, p. 55) argued that Scottish speakers do not necessarily operate on the continuum which defines their pronunciation as either more or less Scots as compared to standard, and Lawson (2014, p. 3) suggested that Broad Scots varieties tend to coexist alongside SSE and vary across region and class. Lawson's work supported Aitken's (1979, as cited in Lawson, 2014, p. 3), who noted that the Scots-SSE dialect continuum enables speakers in Scotland to experience style 'shifts' within the continuum depending on the "social class, conversational topic, [and] level of familiarity with an interlocutor."

The close connections between Scots and SSE means that the Scots-SSE continuum in most Scottish communities makes the languages difficult to tease apart, so researchers typically don't claim to be studying either SSE or Scots separately. Instead they examine the speech of people in the local community, much like they do anywhere else in the English-speaking world. The connections also mean that immigrants to Scotland are exposed to a large range of variation, and although they may acquire some Scottish features in their speech they may vary according to the linguistic situation they found themselves in.

How the bipolar continuum and immigrants interact is a huge question, beyond the scope of this thesis. So, I am going to limit it to looking at two (related) features which act much the same in SSE and Scots (i.e. across continuum) to control for Scottish variation as much as possible: FACE and GOAT, which are realised as monophthongal [e(:)] and [o(:)] across the continuum (Macafee, 2003). It is because FACE and GOAT act much the same across the continuum that they were selected as key independent variables in measuring immigrant participants' production. Other studies of immigrant speech in Scotland (see e.g. Lawrence, 2013; Meyerhoff and Schlee, 2012, 2014; Schlee, Meyerhoff and Clark, 2011) have also set aside distinctions within the continuum and have focused on features which are present in most Scottish varieties. Whether the immigrants find themselves in a

working-class, Scots-speaking community, or in a middle-class SSE-speaking community, they are likely to be equally exposed to [e] in FACE and [o] in GOAT. However, in the established middle-class speech and areas with high numbers of non-Scottish speakers, [eɪ] and [əʊ] are also fairly common (for the discussion on SSE and SSBE see Schützler, 2014, 2015). As the immigrant participants in this study have found themselves in approximately middle/upper working-class occupations and areas (see Appendix A15), they will be probably exposed to the Scottish variants [e] and [o] most of the time from native speakers. However, immigrant participants did not report using a great deal of Scots pronunciation, and during interviews they did not use Scots terms, e.g. 'stane,' 'bane,' 'nae,' 'baith,' 'oan,' etc. Based on this evidence, it is therefore assumed that immigrant participants in the present study have more or less SSE lexical distributions of vowels.

As the present study addresses sociophonetic variation in Scotland the following subchapter examines FACE and GOAT in SSE, which provides the context necessary to explore the extent to which Scots/SSE [e] and [o] are present in the speech of the immigrants in my study's results.

2.5 Contemporary research on SSE FACE and GOAT vowels

Watt and Milroy (1999, p. 32) suggested that FACE and GOAT vowels tend to behave as "mirror images' of one another," and exhibit symmetrical up-down movement. Researchers also sometimes consider [e(:)] and [o(:)] in Scottish English to be monophthongs of a stable quality (Jones, 2002; Stuart-Smith, 2008), or even as indicators of Scottish identity (Schützler, 2014, p. 130). Wells (1986) and Schützler (2015, p. 73) pointed out that the FACE and GOAT vowels are not always realised as monophthongs, particularly among middle class speakers who tend to produce relatively more diphthongal vowel quality, while

monophthongal realisations were most common among lower middle class speakers. Similarly, Giegerich (1992, p. 50) transcribed FACE and GOAT vowels as /e/ and /o/ for both RP and SSE, stating that “the realisations of /e/ and /o/ are not invariably diphthongal in all accents of English: in SSE they are monophthongs – [e] and [o].” He continued that FACE and GOAT vowels are not “true” diphthongs as is the case for /aɪ/, /aʊ/, and /ɔɪ/, which carry diphthongal realisations in both accents. Stuart-Smith (2008, p. 60) and Schützler (2011) claimed that these two vowels behave as pure monophthongs in SSE, and only rarely behave as diphthongs (see Figure 2.4).

Figure 2.4: FACE and GOAT in SSE (Scobbie, Gordeeva and Matthews, 2006) and SSBE (Hughes, Trudgill and Watt, 2012)

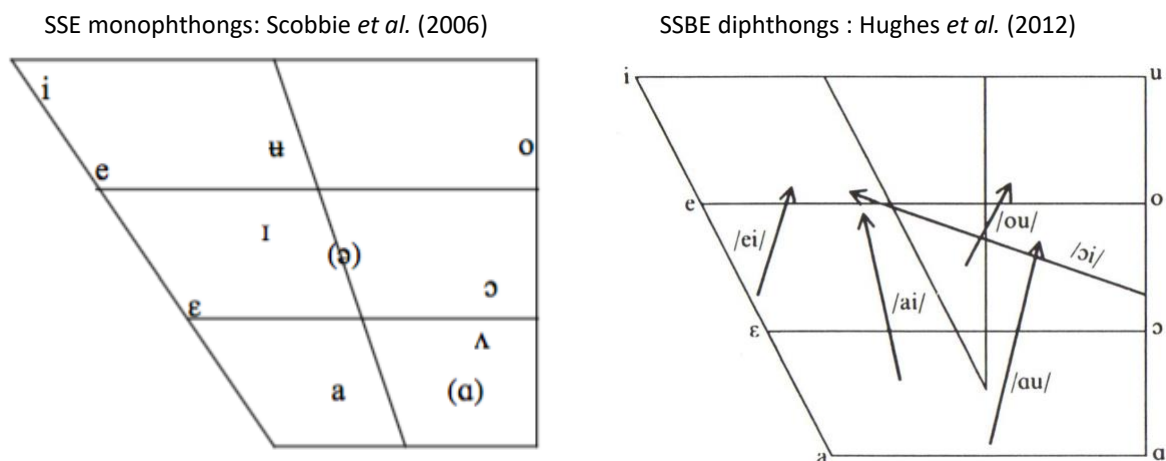


Figure 2.4 shows the monophthongal and diphthongal variants of FACE and GOAT vowels across SSE and SSBE varieties. Several researchers (e.g. Wells, 1982; Giegerich, 1992; Schützler, 2015) pointed that FACE and GOAT behave in a parallel fashion, so that any variation to one vowel tends to correlate with variation in the other. These researchers also noted that mono- and diphthongal realisations typically vary accent-to-accent (Table 2.1), mostly based on regions in which they occur. For example, one of the key characteristics of

SSE is that it shares more features with SSBE than other Scottish varieties of English, so it stands that SSE speakers produce diphthongal FACE and GOAT realisations more frequently than would speakers of other Scottish English varieties.

Table 2.1 provides additional context on how Wells’ (1982) lexical sets are realised in SSBE, Scots, and SSE.

Table 2.1: Vowel systems in Scots dialects (Maguire, 2012, p. 56) for the lexical sets relevant to this study

Older Scots	Keyword (Aitken, 1984; Johnston, 1997)	Scots	SSE	RP Lexical Set (Wells, 1982)
a:	MATE	e	e	FACE
ai	BAIT	e˞		
ɔ:	COAT	o, o˞	o	GOAT

As the SSBE diphthongal vowels can be realised as monophthongs in Scots and SSE, vowels from Wells’ FACE and GOAT lexical sets (1982) were used to compare productions between immigrants and their native peers both in Scotland and Slovakia. The present study also performs a similar analysis on model recordings available with *face2face* material available for English language instruction (see section 2.3.3), which was used extensively in English classrooms in Slovakia at the time of this writing. Most English-language instruction textbooks and their media in Slovakia are produced by Oxford and Cambridge publishing companies, which include recordings of Received Pronunciation pronunciations as examples of native English speech. Via these textbooks Slovak ELLs learn the diphthongised vowels from the FACE/GOAT lexical sets characteristic of RP and typically ignore other (i.e. monophthongal) realisations used in other parts of the UK. This contrast between learned and acquired speech creates a clash between pre- and post-immigration identities, as immigrants in speech communities where varieties other than RP are prevalent (e.g.

Scotland) reconcile the language they learned with the language that is witnessed first-hand.

There is evidence to suggest that monophthongal and diphthongal vowel realisations may vary depending on contexts of different perceived formality, even among native speakers. Recent works (e.g. Schützler, 2015) have suggested that factors such as age and social class can have effects on pronunciation. These findings supplement established results such as Johnston's (1984) study of the Morningside area of Edinburgh, where speakers displayed variation of /e/ and /o/ vowels among upper (UMC) and lower (LMC) middle classes. He found that UMC speakers produced diphthongal forms of /e/ and /o/, with a tendency to diphthongise /e/ in formal styles; for LMC respondents, he found that they mostly favoured monophthongs, but showed a tendency to diphthongise /o/ in the wordlist style. He also found that older women favoured monophthongal forms whereas older men used a higher proportion of diphthongs. This gender pattern was reversed for younger speakers. Variation by social context was replicated in Schützler's (2015) more recent study, which examined patterns of variation of FACE and GOAT vowels among twenty-two middle-class SSE speakers collected from the University of Edinburgh and a private Edinburgh's school. Schützler's study is of importance as it examines the same variables (FACE and GOAT, i.e. /e/ and /o/) and speech styles (reading passage, wordlist, careful speech). Schützler examined how strongly these two vowel variables display diphthongal properties linked to SSBE rather than SSE. The results showed that overall, /o/ displayed strong variation between men and women, in regard of its position and formant pattern; /e/ displayed much less variation between speakers. In the case of the style shifting, younger and older women were found to produce monophthongal forms of /e/ particularly in the wordlist style, whereas men displayed only a slight tendency towards diphthongal

pronunciations. Age appeared to be a strong predictor of vowel variation, particularly for /o/, where older speakers tended to revert towards monophthongal patterns. For both vowels, the results showed that both older speakers and women produced more monophthongal vowel variants. However, Schützler also observes that variation by age and gender are heavily reliant on the amount of contact that participants have with Anglophones, and that the variation instigated by this contact differs according to each participant's age or gender. He concludes that "only those speakers who found (or still find) themselves in an exceptionally close situation of contact with speakers of SSBE display the markedly different patterns of diphthongization" (p. 97). Schützler therefore demonstrates how effects from age or gender are compounded by myriad other factors related to personal experiences, resulting in variation that is not easily linked to specific factors. Immigrant experiences are themselves compounded by conflicting cultural and social standards affecting immigrants, so the following subchapters provide further exploration of variationist studies that examine how these standards affect speech.

2.6 Who are immigrants?

Before investigating how social and linguistic factors affect immigrants' lives, it is worth addressing the limits of the definition of "immigrants" for the purposes of the present study. Defining the focus of the present study provides an outline for the participant groups examined later in the analyses of production and perception. Since the Brexit referendum British politics and media has become increasingly focused on immigration policies in the UK, with questions such as who, how many, and what kind of immigrants can enter the UK at the forefront of most public debate (BBC 7 March 2018; Hawkins, 2018; Wadsworth, Dhingra, Ottaviano and van Reenen, 2016). In Scotland, discussion has been shifted towards

who can “integrate” in an increasingly diverse Scottish community (Lehva and Croston, 2016). Researchers, media, and public representatives are starting to realise that as soon as immigrants settle the country, they are seeking opportunities to belong and to participate in the country.

Research studies tend to use the terms “migrant” and “immigrant” interchangeably (see e.g. Bidzinska, 2013; Block, 2008; Debaene and Harris, 2013; Drummond, 2010; Forsberg Lundell and Barning, 2015). Anderson & Blinder (2018, p. 3) note that there is no consensus distinguishing between the two terms, and that even legal documents refer to foreign-born individuals as “persons subject to immigration control.” However, Anderson and Binder note that dictionary definitions make distinctions between the terms, where “migrant” indicates temporary residence and “immigrant” suggests permanent or near-permanent residence (p. 3). Since this study focuses on individuals who settled in Scotland from outside countries and have lived in the country for at least five years, it uses the term “immigrants” to describe the Slovak participants residing in Scotland who participated in this study.

Forsberg Lundell and Bartning (2015) suggested the term “cultural migrant,” referring to “people who choose, out of their free will, to move permanently to another country and to learn the language” (p. 3-4). Benson and O’Reilly (2009) used the term “lifestyle migrants” to refer to “relatively affluent individuals of all ages, moving either part-time or full-time to places that are meaningful because, for various reasons, they offer the potential of a better quality of life” (p. 2). Although similar in their nature, Forsberg Lundell and Bartning (2015) argue that lifestyle migrants seldom underwent traumatic experiences, and cultural migrants were motivated “by their interest in and fascination of another culture and language” (p. 6). Immigrants are also often defined by whether the immigrant group is

more dependent on their settlement patterns or more transnational. Previous studies (e.g. Lawrence, 2013; Clark and Schleef, 2010) have explored their life stories as expatriates, classic immigrants, or transnationals and how they adapt as residents of Scotland. Immigrant samples in these studies are often regarded through “their ethnic, racial, national, gendered, social class, and above all, language identities” (Block, 2008, p. ix). However, many of these factors are already determined before immigration, especially for adult immigrants. Daily experiences in the host country continue to shape immigrants’ language and national identities as multicultural and multilingual individuals. Post-immigration experiences also continue to shape their stereotypes and language attitudes, and to validate or suppress their motivations to remain settled in the host country. Such immigrants could be characterised by what Kelsky (2001, as cited in Block, 2008, p. 105) called “internationalist,” meaning their lives are defined by the international dimension and confined by traditional cultural values from their country of origin.

2.7 Immigrants’ mobility in Europe

Pronunciation is not merely acoustics; it has an active social life.
(Rubin, 2012, p. 11)

The present study has taken place at a time of high tensions and increased debate about immigration to the UK, when more researchers are starting to enquire about what it means to be an immigrant and what it means to immigrate. Recent research started to address questions of multilingualism and vast ethnic diversity, and their position in a large-scale migration (Ferguson, 2015). The present study adds to this research by examining transnational issues in particular. The term *transnationalism* (Basch, Schiller and Blanc, 1994, as cited in Darwin and Norton, 2014) refers to the collection of cultures, experiences,

and identities that are shaped by changing attitudes and technologies that permit migrants to maintain connections with both their home and host countries. Transnational immigrants' attitudes and identities are therefore highly complex due to both national and international influences. Vertovec (2007, p. 1043) suggested that not all migrants maintain the same level of transnational connection – many migration factors are conditional on migrants' ability to stay in the United Kingdom, such as immigrants' migration and settlement history, gender challenges, political issues in their homeland, economic situation, and so on. The transnational practices among immigrants are often challenged by an interplay of multifaceted conditions among immigrants arising from attitudes in the host country about immigrants' home country and ethnicity (*ibid.*). This variety of factors affecting migration led to Vertovec's (2006) term "super-diversity," which describes the result of widely varied socio-cultural differences instigated by the migration processes. Recent research has revealed that many Europeans reinforce the "one country, one language" concept (Joseph, 2004), as due to standardisation and dissemination of a single national language many European citizens appear to exhibit ongoing bias favouring monolinguals despite many residents of those states speaking other languages (Ferguson, 2015). This bias causes friction with the arrival of immigrants from other European countries and, as Ferguson mentioned, especially when "recent migrants have remained more transnationally engaged than previous migrant generations, often expressing dual or multiple national loyalties" (Ferguson, 2015, p. 3).

In the European Union (EU), the A8 countries consist of Central and Eastern European countries only relatively recently added to the union: Slovakia, Poland, the Czech Republic, Latvia, Hungary, Estonia, Slovenia, and Lithuania. Since the 1 May 2004 accession of the A8 countries to the EU, immigrants from these countries have experienced increased

rights of movement, which affected their mobility and East-West economic opportunities (Burrell, 2009). East-West migration has provided conditions for shaping migrants' lives and has enabled them to develop varied tastes and lifestyle choices (Luthra, Platt, and Salamonska, 2014). Sekeráková Búriková (2016) examined Slovak *au pair* workers who arrived to the UK before and after the accession date. She found that "prior to EU enlargement, *au pair* positions were viewed as a popular and comparatively unproblematic route to the United Kingdom, which was the most popular destination of Slovak *au pairs*" (p. 209). Following the accession, migratory movements were primarily traced across foreign labour markets (Okólski, 2007; Drinkwater, Eade, and Garapich, 2009). In the UK, results from the most recent Census (as reported by Hawkins, 2018) indicate that 2.68 million immigrants from the EU were living in the UK as of March 2011. This number is high in comparison to many other immigrant nationalities: between 2005 and 2006, National Insurance Number statistics (NINO) recorded levels of immigration to the UK by country, and Poles, Czechs, and Slovaks were each among the top 20 immigrant groups (Okólski, 2007, p. 13). Slovak immigrants formed a considerable part of that immigration, as in the years immediately following accession over 100,000 Slovak immigrants were registered with the Worker Registration Scheme (WRS), making immigrants from these countries a significant portion of the UK work force (Blanchflower and Shadforth, 2009). This trend continued in subsequent years, as Office for National Statistics (2010) reported a 117% increase of Slovaks in the UK from 2005-2009.

In Scotland, McCollum *et al.* (2012) reported that the areas with "the highest absolute inflows of A8 migrants" between May 2004 and April 2011 were large rural areas such as Angus, Perth, and Kinross; and cities, such as Glasgow, Edinburgh, and Aberdeen (p. 16). The 2011 Census indicated that migration "inflows" to Scotland have continued to

increase over the past decade, although immigration growth is still relatively small when compared with the other European nations. Packwood and Findlay (2014) reported that 7% of Scotland's population were born outside of the UK, and later research by the National Records of Scotland (2017) revealed Scotland's population as of 2016 was "the highest ever" at 5.4 million, an achievement due in part to the increase of immigration. The National Records of Scotland's (2017) statistics showed that the strongest in-migration in Scotland is from the age of 19, meaning that the highest flow of migrants are adults. The National Records also showed that new immigrants were most concentrated in Edinburgh (6.4%), followed by Stirling (5.9%) and Glasgow (5.7%). However, Edinburgh's population is far less diverse than that of London, which remains by far the most attractive place for immigrants in the UK (Packwood and Findlay, 2014).

Despite the impressive immigration statistics from census and national studies data, it is unclear what proportion of these immigrants stayed for the long term and what proportion subsequently returned home. However, it is clear that different motivations drive immigrants' decisions to stay temporarily or permanently in their host country. Perhaps one of the obvious motivations to migrate was expected earning differences, i.e. differences in wages and career opportunities between home and host countries (Fidrmuc, 2002). Elaborating on the context of Slovak economy, Buček (1999, p. 360) reported a "severe decline of industrial output and rising unemployment" in Slovakia between 1990 and 1997. In contrast, McCollum and Findlay (2015, p. 430) stated that the decision of the UK market to offer limitless opportunities to the East-Central European immigrants was a "pivotal moment," which preceded a large influx of migration. The combination of these factors may have primed a large part of the Slovak population for immigration after the 2004 accession. Slovakia's socio-economic situation in the late 1990s followed by its

accession to the EU represented significant macro-level motivations for immigration, but relying on this explanation for all discussion of motivations is an overly simplistic approach. The following subchapter explores research that outlines immigrants' more personal motivations, both before and after immigration.

2.8 Motivations behind mobility

Previous studies have addressed the myriad reasons behind Eastern European immigrants' movement into EU countries, but they largely avoided critical analysis as to what motivates people to immigrate and why. Since the accession, European immigrants have enjoyed relatively unencumbered border controls and work restrictions have been mitigated over time (Luthra *et al.*, 2014). Other prohibitive effects of migration have lessened further over recent years, as communication through Skype (Dekker and Engbersen, 2012) and cheap flights (Williams and Baláž, 2009) mean that immigrants can easily maintain connections to their families and native countries.

To explain immigrants' reasons for their mobility, Block (2008) and Papastergiadis (2000, as cited in Block 2008, p. 8-12) discussed "models of migration" which influenced immigrants' decisions to migrate. The "voluntarist push-pull model" described the reasoning for the economic opportunities which were the driving force where "people are "pushed out" of stagnant rural peasant economies, and "pulled" towards industrial urban centres" (p. 9). Block explained that the migrating process is often accompanied by "[a] political right of potential migrants to migrate, transportation to get migrants to their chosen destinations, sufficient money to pay for passage and the skills and intellectual wherewithal to organize a move" (p. 9). Papastergiadis argued that immigrants make decisions based on myriad factors that are not always apparent (p. 10). He found that it is the influences of

lifestyle and not just socio-economic reasons that drive motivation to migrate to preferred countries. Multi-level migration systems, which Block (p. 12) defines as micro, macro, and meso levels, are conceptualised as overlapping and interacting systems at the base of immigrants' mobile choices. Micro-level motivations, for example, focus on the individual aim to improve lifestyle expectations and values. Macro-level motivations represent global forces behind migration, such as differences in cultural setting, demography, politics, and economics. Finally, meso-level migrations represent a middle point between individual and global factors, and includes social (i.e. family) and symbolic (i.e. ethnic, national) ties which arise with immigrants' adaptation to their host country while forming transnational identities.

Sociolinguistic research examining motivations for learning the language of the host country frequently divides motivations into "instrumental" and "integrative" categories. Instrumental motivations are typically linked to practical benefits, such as a better job, higher pay in one's existing job, or a perceived increase in social standing. Integrative motivations are linked to less tangible benefits and the wider community, such as closer connection with families and friends, or a personal sense of fulfilment and belonging in one's community (Carrie, 2014), though integrative motivations are by nature difficult to define (Dörnyei *et al.*, 2006). Gardner and Lambert (1972, pp. 12-14) and Baker (1992, pp. 33-35) pointed out that integrative and instrumental attitudes or motivations play a key feature in learning a second/foreign language. They suggested that students who learn the language and are more "integratively oriented" (i.e. adapting to the language and cultural norms of their target country) are generally more successful in acquiring a language variety than students who are more "instrumentally oriented" (i.e. learning the second language for professional purposes). However, studies by Gardner and Lambert (1972), Clement and

Kruidenier (1983), and Noels *et al.* (2003) found that integrative and instrumental motivations apply to different types of contexts. Instrumental motivations, for example, have the potential to apply to a wide range of contexts, and for a wide range of language learners. Integrative motivations, in contrast, are primarily evident in contexts where language learners recognise a “clearly dominant group” which they can join by learning the language (Noels *et al.*, 2003, p. 37). But despite their limited context, Baker (1992) suggested that integrative attitudes “may both be the cause and effect of becoming or staying bilingual” (p. 34), making these motivations much greater predictors of language learning as a result of forming friendships and cultural adaptability through positive attitudes and identity forming.

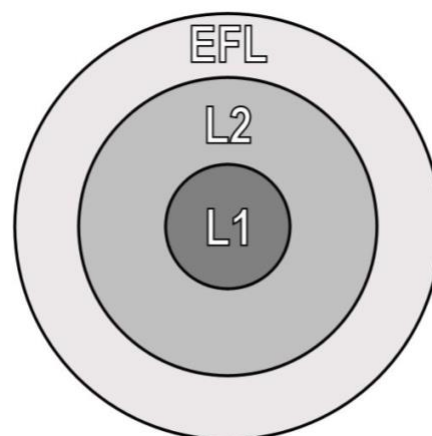
Evidence of layered motivations during immigration is demonstrated at length in post-accession migration research. Cook *et al.* (2011) examined motivations of A8 immigrants who entered the UK after the 2004 accession. They investigated immigrants’ perceptions towards new locations and their ability to work alongside local workers. The authors found that immigrants’ motivations and transnational identity “are subject to change as migrants live their lives across time and space” (p. 56). Martin and Radu (2012) reported on work experience abroad and how it affects the labour market of Eastern European immigrants. They found that Eastern European migrants successfully earned incomes that were higher than they would have received in their home countries, to the point that they were inclined to become self-employed rather than re-entering the existing labour market on their return. This research seems to concur with the study of Williams and Baláž (2005), who found that Slovaks who immigrated to the UK were highly motivated to pursue economic opportunities, especially higher quality education, professional work opportunities, or more general transferable skills. Sekeráková Búriková (2016) found that *au*

pair women who arrived in the UK before 2004 “tended to have higher levels of education and were more focused on learning the language than those coming after” (p. 211), who expressed stronger economic motivations. These studies pointed to the idea that European immigrants acquire skills while abroad that they would not have been able to acquire in their home countries.

Research has revealed that immigration is often driven by non-professional factors as well, such as marriage (Sinke, 1999) or self-improvement (Cook *et al.*, 2011). These factors as well as those mentioned previously are what drove the immigrants in the present study to visit and, ultimately, to remain for years in Scotland. Alternatively, specific instrumental attitudes toward local English language communities are seen as losing strength, as English language learners (ELLs) increasingly view their language learning as a self-evident part of education and, as a result, prefer global English over local accents (Dörnyei *et al.*, 2006). Dörnyei *et al.* (2006) note that “global English” represents an English variety that is not associated with specific English-speaking countries, for example, the UK, the US, or Australia, but instead represents an “imagined international community” (McKenzie, 2010, p. 2; Jenkins, 2009, p. 39). As a speech community, speakers of global English have varying standards that distinguish global English from other varieties. Kachru (1985, 1992, as cited in McKenzie, 2010) uses a model of three concentric “circles” of English language use to provide distinctions between the phonological rules governing native and global English varieties. At the core of the model is the inner circle, comprised of English varieties from countries where English is the national language, e.g. the UK, the US, and Australia (see Figure 2.5). In each of these countries standards of pronunciation are well established and are sourced from within the country’s borders. The second level of the model, the outer circle, consists of countries where English is used as a second language

(L2), e.g. Commonwealth countries. In these countries, argues Kachru, English phonological norms are still being developed, and there are contrasts between norms imported from the inner circle and norms developed in-country. The outermost level of the model, the expanding circle, consists of countries where English is used as a foreign language (EFL) in primarily educational or professional settings. Slovakia is an example of a country in the expanding circle, but also any country where English is neither a native nor a second language falls within this definition. English speakers in this circle still may look to the inner circle for ideal versions of phonological norms, but it cannot be assumed that speakers prescribe to these norms. Instead, English becomes a tool to facilitate communication between speakers of different countries, who vary their English use depending on context. As a result of this variation and constant updates to the expanding circle, no set phonological rules are evident that define global English.

Figure 2.5: A visualisation based on Kuchru's (1985, as cited in McKenzie, 2010) concentric circles of global Englishes



Although this section provides a somewhat brief summary of motivations behind migrations, the concept of migrating is often a combination of various social and linguistic factors. To review the social and linguistic factors particular to the participant samples in the

present study, the following subchapter outlines immigration research performed in the UK, and specifically in Edinburgh, Scotland.

2.9 Immigrant studies in Edinburgh

As the capital of Scotland, Edinburgh is positioned north of the Scottish Borders and south of St Andrews, and due to its varied population and its political and cultural significance the city is home to myriad standard and non-standard speech communities. It has been argued that Edinburgh is home to more near-RP speakers than Glasgow, with Anglo English having a more visible presence in Edinburgh than anywhere in Scotland (Meyerhoff and Schlee, 2014, p. 103; Scobbie *et al.*, 1999, p. 242). The prevalence of both Scottish Standard English and SSE as “standard” varieties may create some variation among not just Scottish speakers, but also among those who came to Scotland and wished to adapt to its community.

More studies on Edinburgh English have emerged since Meyerhoff, Schlee and Clark (2009) had lamented their scarcity, with many focusing on documenting Edinburgh English from L1 (e.g. Dickson and Hall-Lew, 2017; Reiersen, 2013; Schlee and Ramsammy, 2013; Schlee, 2013a; Schützler, 2011, 2015) and L2 perspectives (Elliott and Hall-Lew, 2015; Lawrence, 2013; Meyerhoff and Schlee, 2012, 2014; Rosseel, 2013; Schlee, 2013b). Since the main aim of this study is to discuss acquisition and language variation among Slovak immigrants, this chapter will outline important findings from L2 speakers and their language and cultural adaptation or its lack in Edinburgh. By outlining some of the important concepts of language acquisition, it contributes to the debate about Edinburgh English and its migrants.

2.9.1 Context: Immigrants' speech variation in the UK

Schleef *et al.* (2011) were among the first to examine linguistic variation among Central and Eastern European immigrants in the UK, and their study examined the extent to which Polish teenage migrants acquired local Edinburgh and London (ing) speech variants, i.e. velar [ŋ], apical [n], and [ŋk] variants. The study found that Polish migrants were sensitive to the vernacular variants and were able to partially replicate local linguistic and social constraints of their community, and in some cases, linguistic constraints found in native-born teens as well. More importantly, however, they seemed to introduce novel constraints which weren't previously found in the speech of their local peers. Meyerhoff and Schleef (2012) continued working on the project by comparing effects of social and linguistic factors on immigrants' adaption to their local norms. Their findings suggested that the immigrants' productions tended to reflect linguistic constraints more than non-linguistic constraints (e.g. attitudes, gender). If social factors emerged as important predictors of speech variation, they tended to be associated with social meanings such as gender. However, the authors admitted that acquiring social constraints tends to be a difficult process, as it often requires non-native speakers to identify several linguistic constraints, whether consciously or unconsciously (p. 409):

1. Variants and their relative frequencies
2. The independent linguistic and non-linguistic factors constraining those variants
3. The ordering of specific constraints in those factors
4. The stances, acts, activities, and styles that index gender

The acquisition of linguistic variants often varies based on individual variables, and depends on the constraints acting on individual variables. For example, Meyerhoff and Schleef (2014) found that teenagers who spent more time in Scotland appeared to produce individual

variables similar to native-speaking peers. They concluded that “among NSs the order of constraint acquisition may differ from variable to variable. Very little is known, however, about the order of constraint acquisition among NNS” (p. 122).

2.9.2 Contemporary variationist study on British immigrants

Sociolinguistic variationist study within the past few years has moved beyond determining whether immigrants acquire pronunciation features in their local (British) language communities, and the focus is now on specific indicators of and effects on variant pronunciation. Taking into consideration previous findings, Meyerhoff and Schlee (2014) further asked whether Polish teens acquired vernacular variants naturally or via English language instruction, based on the teens’ English proficiency. The results showed that the Polish-born teens recognised linguistic and social constraints on their productions differently depending on their foreign language proficiency levels, suggesting that for ELLs the level of English instruction is an important predictor in language acquisition. One of the core aspects of this study was the style constraint: the authors found that overall, the Polish teens “correctly identified the [ʔ] variant as being associated with the conversational style, and the oral stop as being associated with reading aloud” (p. 117). They also found that style was statistically significant only among the low proficiency group who were able to identify variants associated with conversational and reading styles. This is an interesting finding, as the present study examines specifically how style influences Slovak immigrant adults’ speech. Unlike the Meyerhoff and Schlee (2014) study, all the immigrants in the present study were highly fluent.

To date, few L2 studies have investigated the acquisition process among long-term adult immigrants by analysing vowel variables. Elliott and Hall-Lew (2015) examined the FACE

and GOAT vowels spoken by long-term Slovak and Czech female immigrants who permanently reside in Edinburgh. Our paper followed previous studies by examining linguistic and social constraints, and investigated the extent to which Slovak and Czech female immigrants acquired monophthongal pronunciations of their local peers in Edinburgh. They found that Slovak and Czech immigrants' vowel quality was somewhat gradient, relatively more monophthongal in the *Interview* style, relatively more diphthongal in the *Wordlist* style, and productions in the *Reading* style were between the two. Also, the results suggested that immigrants did, at least partially, make accommodations towards Scottish vernacular variants that weren't accessible in their home country. Schlee (2013b) suggested that the varying results across immigrants' acquisition might be the result of the differing strategies that learners follow to accommodate to their local speech communities. As a result, Schlee found that speakers tend to acquire vernacular varieties at differing speeds based on their use by native speakers. He argued that "some constraints are (1) replicated completely, (2) some are altered, (3) some are rejected, and (4) some are re-interpreted, resulting in new constraints (notably grammatical category and gender)" (p. 9), meaning that the complexity of observing linguistic constraints is as much due to what immigrants do with these constraints as the social effects on them.

Many factors affecting immigrants' experiences in their host country are rooted in their attitudes toward their local language communities. Other studies have also examined immigrants' attitudes towards their language community: for example, Clark and Schlee (2010) found that Polish teenagers successfully recognised Polish-accented English significantly more often than their native-speaker peers, but were significantly less successful in identifying British English varieties. When applied to language attitudes, the authors suggested that low identification rates of localised language varieties may be

detrimental to forming clear attitudes in favour of (or in resistance to) local speech communities. However, although many studies exist on language attitudes, few make direct links between attitudes and pronunciation. In order to cover the background of research into language attitudes, the following subchapter reviews literature that evaluates language attitudes in detail.

2.10 Language attitudes

The term “language attitudes” refers to attitudes which are directed towards the language as a reference point (Fasold, 1984). Oppenheim (1982, as cited in Garrett *et al.*, 2003, p. 2) suggested that attitudes refer to behaviour outcomes which influence how people interact with other people’s attitudes. He characterised attitudes as:

A construct, an abstraction which cannot be directly apprehended. It is an inner component of mental life which expresses itself, directly or indirectly, through such more obvious processes as stereotypes, beliefs, verbal statements or reactions, ideas and opinions, selective recall, anger or satisfaction or some other emotion and in various other aspects of behaviour.

Language attitudes tend to be described from the social psychology point of view, where they are characteristic for their tripartite aspects: affective, cognitive, and behavioural (for details see e.g. Baker, 1992, 2008; Carrie, 2016; Edwards, 1982; Garrett, 2010; Garrett *et al.*, 2003; Ladegaard, 1998; McKenzie, 2006, 2008, 2010, 2015). Affective language attitudes involve feelings towards a particular attitude object (e.g. a keen interest in Scottish poetry), cognitive language attitudes are associated with beliefs about the world (e.g. speaking with a Scottish accent would help me make more friends in my Scottish community), and behavioural language attitudes make users operate in a certain way (e.g. learning and using Scottish accents). It must also be noted that each attitude may be associated with multiple behaviours, and vice versa (Carrie, 2014; Agheyisi and Fishman, 1970). The present study

examined language attitudes of Slovak immigrants and their Scottish peers, taking into consideration primarily behavioural aspects.

One of the most popular experimental methods in social psychology is the Speaker Evaluation Method (Giles and Billings, 2008), where respondents typically rate a series of audio recordings uttered by anonymous speakers. Respondents assess the recordings on an adjective scale, with rating items such as *elegant*, *intelligent*, *beautiful*, *rough*, *likeable*, *pleasant*, etc. The main aim of this method is to elicit participants' attitudes towards language varieties, and data on these assumptions represent an attitudinal profile of the recorded speaker group (Soukup, 2009, p. 86). Lambert and colleagues (1960) and Gardner and Lambert (1972) introduced what is now a popular method that utilises speaker evaluation experiments, the matched-guise technique. This technique presents a single speaker who was recorded reciting the text while imitating language varieties, with the intention that informants then evaluate the text based on different "guises" they heard. The ratings for the guises themselves could therefore be obtained and, since the same speaker performed all guises, the task could be controlled for speaker differences (e.g. pitch, intonation). Although this method was a success in evaluating speakers' language varieties, it also received criticism that imitating various speakers did not adequately represent language varieties. Thus, some researchers (see e.g. Soukup, 2001; Garrett, 2005) switched to an adapted version called the "verbal guise" technique, in which multiple speakers of different backgrounds – each with different language varieties – are used instead of a single bilingual. Gallois and Callan (1981, in Soukup, 2009, p. 87) argued that the verbal guise is preferable to matched guise: "[the verbal guise] employs natural, rather than feigned, accents which may really only represent the speaker's stereotypes; in addition, it eliminates the possibility that speakers will systematically vary their voice qualities in an attempt to

exaggerate differences between their two guises.” For these reasons the present study uses the verbal guise technique for speaker evaluation tasks.

Although research into language attitudes typically examines immigrants’ attitudes separate from other factors, the attitudes themselves do not exist without context. The following subchapter explores the current state of research into the associations between language attitudes and related factors in migration studies.

2.11 Linking second language acquisition, language attitudes, and identities to migration studies

Global migration is a frequently discussed issue in recent news, politics, and research; however, studies that link the topic of migration with language acquisition, language attitudes, and identities are still rarely present in current research. Duchêne *et al.* (2013, in Forsberg Lundell and Bartning, 2015, p. 1) criticised this, saying that “migration studies in the social sciences rarely examine the central role of language and, similarly, socio- and applied linguistics have given much more time to education than to the workplace.”

Similarly, Diskin and Regan (2015, p. 137) pointed out that migration studies within the social sciences tend to focus more on transnationalism rather than immigration. They claimed that “migration research has thus shifted from assimilationist and integrationist perspectives to studies of transnationalism.” The authors noted that migration research has become particularly interested in immigrants who maintain international and inter-cultural connections with the help of increased travel and improved technology, rather than immigrants who become wholly integrated with their host country. Diskin and Regan also argued that highly mobile migrants may still strongly cling to their traditional nation states and thus should be redefined as “trans-destinational” (*ibid*). In other words, language is the

most important factor in adult immigration because it allows them to meet with their local community, develop their perceptions and identities, and integrate economically and socially into their host country. Given the significance of language in creating opportunities for interaction within their host countries, immigrants daily face the consequences of adapting to (or resisting) native-like pronunciation, and weigh the possibility of further integration with their local language communities against the erasure of links to their home countries. Although migration has changed within the last decade, transnationalism remains a topic for current research (Forsberg Lundell and Bartning, 2015). However, “highly mobile” is an ambiguous term: the present study examines immigrants who remained in Scotland for at least five years (Munro and Mann, 2005), yet they were as likely to self-identify as transnational individuals as short-term immigrants. Long-term immigrants also have had the time to consider the implications of (consciously or unconsciously) adapting their speech to their local language communities. The following sections will examine issues which influence adult L2 learners acquiring ‘native-likeness’ of their local peers.

2.11.1 Language attitudes and identity

Studying the relationship between identity and language attitudes has gained interest among sociolinguists, particularly when studying L2 speakers. Ellis (1994, as cited in Clark and Schleef, 2010, p. 302) argued that examining language attitudes among L2 speakers and language learners has been acknowledged as being of “major importance.” This is because researchers (e.g. Rindal, 2010, 2015; Newlin-Łukowicz, 2015, 2016) are discovering that shifts in identity have far-reaching implications for language attitudes, and subsequently on pronunciation.

Identity, or the collection of attitudes and preferences that indicate affinity or affiliation, has been acknowledged as having a direct effect on the assumptions and stereotypes that form the core of language attitudes. The present study is particularly interested in aspects of identity that are associated with citizenship and nationality, as opposed to aspects of personal identity associated with gender, class, or age (see e.g. Bechhofer and McCrone, 2010). Drawing on their previous research on English-Spanish bilinguals, Anderson and Souza (2012) examined bilinguals' perceptions to determine how their language proficiency and identity formations influence their attitudes. The authors found that when English learners of Spanish were asked whether a speaker they listened to via a matched-guise task sounded like them, they demonstrated greater solidarity with the native-like Spanish varieties than they did with L2-influenced Spanish varieties. Their data also showed that language proficiency was an important factor in predicting participants' ability to rate and identify the native language. Further, the authors found that positive attitudes towards immigrants' host country influence the way L2 speakers acquire pronunciations of their local peers by improving language acquisition and retention. The authors criticised Piske *et al.*'s (2001) study, saying that many studies focus primarily on accent acquisition among L2 learners instead of "asking whether our learners even know what the end-goal of their L2 pronunciation acquisition is, and (perhaps more importantly) whether they care" (p. 28). This study addresses these issues by asking Slovak immigrants to evaluate their own accent to understand how they see themselves in regard of their local language community. It also asks them to evaluate their identities and motivations to understand what influences their decisions behind their stay, and reasons to their adaptations (or lack thereof) towards local language communities.

Research suggests that identity shifts, or the gradual change of preferences or affiliations in response to outside stimuli, occur along multiple lines of social and cultural connections (see e.g. Moore, 2011). In the case of immigrants, one key identity shift would be the gradual change of association from one's home country to one's host country. Maintaining local social contacts is well-known to be one such connection, but integration strategies in the form of assimilation, preservation, and adaptation also have effects on identity change. Sharing public spaces with local community speakers also causes immigrants' identities to shift, whether consciously or unconsciously. In other words, immigrants' desire for integration and their individual motivations help them to absorb new cultural and linguistic behaviours, and measuring these connections may shed more light on the question towards the relationship between pronunciation and identity. Vertovec (2007), however, claimed that although much academic work has focused on these two topics, most had taken an all-or-nothing approach towards integration in local language communities. Vertovec considered the relationship between transnational identities and integration, but argued that "the 'more transnational' migrants are, the 'less integrated' they must be" (p. 1046).

Pre-immigration identity continues to shape language attitudes after immigration, even for long-term immigrants. Kerswill (2006) found evidence to suggest that this is because many immigrants continue to hold close links to their home countries, regardless of their length of stay in the host country. These links are almost entirely separate from social and familial bonds, as immigrants who move long distances are likely to break existing social ties with their home countries. An alternative hypothesis is that social ties are dynamic, and that social circles shift and change over time (Smout, 1994, as cited in Braber, 2009, p. 308). Under this theory, immigrants in particular would have highly expansive social circles, with

social ties strengthening or weakening with changes to geographic location, and McCrone (1992, 2002) suggested that immigrants would have multiple identities based on which social ties are “closest” in any given situation. Despite differing theories on the relationship between social ties and national identity, it is clear that personal factors – e.g. motivations to integrate – may have effects on identity that are at least as strong as effects from interpersonal factors such as social bonds. Continued attachment to one’s home country despite the changes associated with immigration is especially remarkable given how identity shifts in response to these changes. Bucholtz and Hall (2005) observed that identity represents an ever-shifting sense of self, a “relational and sociocultural phenomenon” (p. 585) that appears in social context. Combining this definition with the multi-dimensionality explained by Anderson and Souza (2012) and McCrone (1992, 2002), Bucholtz and Hall explain that identity consists of several often overlapping, complementary relations, including “similarity/difference, genuineness/artifice, and authority/deligitimacy” (p. 599). Like language attitudes, specific identities are therefore difficult to identify, however on the micro level “languages and dialects [are] indexically tied to identity categories” (p. 597). In immigrants, shifts to identity are strongly associated with shifts in attitudes and pronunciation, and these changes are especially evident across pre- and post-immigration identities. Measuring these changes therefore becomes a means of indexing immigrants’ identity and their successful integration in the host country, for example when Clark and Schlee (2010) found no significant differences in the explicit language attitudes of Polish- and UK-born participants.

2.12 Language production

Following on the theme of what immigrants experience in their host country, the present study incorporates speech production as a means of quantifying immigrants' language attitudes. Where the previous subchapters summarised previous research on immigrants' language attitudes, the following sections outline the context of research into immigrants' speech production. This background establishes how the FACE and GOAT lexical sets (Wells, 1982) are used as linguistic factors in the present study. The exploration of existing research also begins to trace the links between language attitudes, speech production, and identity that will be discussed in detail with the present study's findings.

2.12.1 *Native-likeness and the critical period*

The immigrant sample in the present study consists of adult immigrants, so the question of the critical period (CP) hypothesis becomes relevant when exploring whether language learners' productions can shift to approach native-like or nearly native-like pronunciations. The primary principle of the CP stems from the age when the speakers start learning their second language, where those that learn the language after the CP often experience difficulties with L2 pronunciation (see e.g. Flege, 1987, 1988, 1995). This hypothesis has been the focus of a rapid growth in SLA research that examines the acquisition of native-like accents among immigrants (e.g. Abrahamsson and Hyltenstam, 2009; Birdsong, 2007; Hammer and Dewaele, 2015; Hyltenstam and Abrahamsson, 2000; Major, 2004; Meyerhoff and Schlee, 2012, 2014; Moyer, 1999, 2007; Muñoz and Singleton, 2011; Rampton, 1995, 2013; Sorace, 2003; White and Genesee, 1996). A typical aspect of studying "native-likeness" involves testing the critical period hypothesis, particularly of those who started learning their L2 later in life (cf. Granena and Long, 2013). The age which marks the

boundary when the learner can achieve native-likeness is a constant discussion among researchers: one claim is that critical age appears at the onset of puberty, between 12-15 years of age, leaving the acquisition of native-like speech “hypothetically impaired” (Leather, 2003, p. 29). Some studies proposed that there should be differences in accent ratings of individuals who obtained formal instruction before and after the end of the CP. For example, Piske and his colleagues (2001) found that “the degree of L2 foreign accent is linear without any sharp discontinuities near the beginning of adolescence” (p. 197). For other studies discussing critical age hypothesis, see for example, Abrahamsson and Hyltenstam, 2009; Flege *et al.*, 1995, 1997, 1999; Flege, 1987; Hyltenstam and Abrahamsson, 2000; Muñoz and Singleton, 2011; Muñoz, 2003; Piske *et al.*, 2001).

A contrasting claim is that adults can acquire native-like pronunciation after the critical period (e.g. see Bongaerts, 1999; Bongaerts *et al.*, 1995, 1997; Bongaerts, Mennen and van der Slik, 2000). Though these researchers proposed that native-like pronunciation is hypothetically attainable after the onset of puberty, they also acknowledged that such an achievement is rather rare. For example, Bongaerts *et al.* (2000) examined thirty adult learners of Dutch who settled in the Netherlands between the ages 11 and 34. These immigrants were native to eleven different language backgrounds: French, German, Spanish, English, Armenian, Berber, Czech, Greek, Italian, Swedish and Turkish. The participants read out ten Dutch sentences in an immersed Dutch setting, and these sentences were then judged by thirty native speakers of Dutch who had no training in phonetics and linguistics. The authors found that two immigrants (native speakers of German and English) achieved native-like ratings, both of whom expressed high integrative motivations to learn the Dutch language and refine their pronunciation via their Dutch spouses and children. The authors also noted that these participants had very little to no

second language (L2) instruction before being exposed directly to target language, unlike L2 learners in one of the author's previous studies (i.e. Bongaerts, 1999) where speakers were drilled to learn pronunciation prior to their arrival to their host country. Forsberg Lundell and Bartning (2015) added that to achieve native-likeness, one must consider "maturational constraints, e.g. social, psychological, linguistic and linguistic experience" such as motivation, opportunities to use L2, and sufficient length of residence, among other factors (p. 3).

Finally, some researchers have raised questions about the validity of the CP hypothesis altogether. For example, Oyama (1976) and Flege (1995) claimed that there is no supportive evidence that the learners' pronunciation will be accent-free when learnt before the CP. Others have noted that the process of acquisition is as important as the age of acquisition, with researchers finding that when learners' L2 pronunciation became more native-like when they undertook any formal instruction at all in their home country (Flege and Fletcher, 1992; Flege *et al.*, 1995; Moyer, 1999). Additionally, Scovel (1988) noted that language proficiency is not limited to pronunciation alone, and added to the discussion by claiming that while CP does apply to phonology, areas such as participants' lexicon or syntax do not experience variation because of the CP.

One aspect that these studies fail to explain sufficiently is their definition of "native-likeness." The present study therefore explores two definitions native-likeness. The first and most immediately apparent definition is immigrants' acquisition of local features, which is assessed in comparison to native English speakers residing in Scotland. In addition to production, speech perception is also addressed to determine whether Slovak-accented speech that approaches native-likeness is still perceived as native-like speech. If so, then results could demonstrate that there's no firm boundary between native-like and foreign-

accented speech, which offers contrasting evidence against the significance traditionally given to the critical period in sociolinguistic research.

2.12.2 Factors influencing variation in the L2

Having outlined the context of native-like L2 acquisition and motivations for immigration, this section discusses variables which may have an influence on acquisition of the local Edinburgh variants among Slovak immigrants after immigration. The following sections discuss factors that are included in the current study, and reviews how they have been examined in existing sociolinguistic literature. While linguistic factors used in the present study (e.g. following phonetic environment, lexical set) have immediate and predictable effects on pronunciation due to any coarticulatory effects, social factors require background to understand their associations with speech variation among immigrant speakers. The purpose of this section is to review these factors in regard of the previous research on L1 and L2 dialect acquisition, to therefore provide the context needed to begin addressing these variables in the present study.

2.12.2a Age

The present study investigates English language use across L1 (i.e. Scottish) and L2 (i.e. Slovak immigrants and bilingual Slovaks in Slovakia) speakers. Previous studies have used participants' age as both categorical and continuous factors when identifying language variation among bilinguals' repertoires.

Age as a social variable has played an important role in L1 variation. Milroy and Gordon (2003, p. 38) suggested that although age is easier to measure than socioeconomic status, age-linked categories (e.g. "young" vs "old" participant groups) create artificial

divisions that may prevent research from being replicated under different contexts. As such, Eckert (1997, as cited in Milroy and Gordon, 2003, p. 39) recommended that age should be examined through life stages rather than as a simple chronology. Regardless of how age is presented, it is an important factor for sociolinguistic study “because the individual’s place in society, the community, and the family changes through time” (*ibid.*).

Physical age is often examined in tandem with age of acquisition, and particularly their connections in “late” second language learners who acquire their L2 after their CP. Although correlations between AOL and accent acquisition are well acknowledged (see section 2.12.1) some studies have singled out age as an important predictor in language acquisition in regard to learners’ “ultimate attainment” in L2 acquisition, separate from AOL (Moyer, 1999). Other studies also found that learners who begin formal instruction at an early age may still produce a foreign accent in their L2 (Flege and Liu, 2001; Flege *et al.*, 1995), while other studies found that it is still possible for adults to achieve native-like pronunciation after their critical period (e.g. Bongaerts, 1999; Bongaerts *et al.*, 1995). There is evidence to suggest that speech variation is therefore not wholly linked to the onset of speech acquisition, so age is included as being distinct from age of acquisition in the present study.

2.12.3b *English language instruction*

As explored previously, the age when speakers are first exposed to their second language, either in the classroom or naturalistically, is an important factor in determining proficiency and pronunciation. However, the methods used when learning the language also have an effect, particularly when it comes to formal language instruction. Larsen-Freeman and Long (1990) pointed out that SLA researchers find the language instruction process intriguing

since language is acquired by both children and adults with differing results. It was the adults who were found to be “better” learners due to their faster learning process (Flege, 1987; 1995), though it was also the adults who tend to struggle with the phonological aspect of the language (McLaughlin, 1984).

Though the age of learning incorporates theoretical matters surrounding the practical issue of when their L2 language instruction begins at school (García Mayo, 2003), Dziubalska-Kořaczyk (1996) pointed out that successful L2 acquisition should be supported by formal instruction. Dziubalska-Kořaczyk found that formal instruction was actually a better means of learning than simple immersion, as formal instruction, in a formal setting, “[was] a much better guarantee of success in L2 acquisition than a natural setting” (p. 250). The second-language learning setting thus plays an important role in how much input the learners receive, particularly at the beginning of their language learning: García Mayo (2003, p. 95) confirmed that second language learning in a community setting “had very little in common with the situation of foreign language learning environment in which the language is taught in the classroom but not readily available in the world outside (e.g. learning English in Spain, French in the USA, etc.)”. The studies of acquisition in various settings provided different results for acquiring language variation in diverse contexts. For example, Adamson and Regan (1991) and Major (2004) used the acculturation model (see Schumann, 1978, 1986) to confirm that native speaker input is an important factor in language learning. These studies found that learners who were exposed to language contact with native speakers (NS) were able to produce NS variation patterns approximately as frequently as their native-speaking peers. Regan, Howard, and Lemee’s (2009) study offered a glimpse into a more formal learning setting by examining a study course that incorporated study abroad for a year. They argued that, following a year of study in a naturalistic setting, “the learner is

characterised by more balanced access to both formal and informal input than the instructed learner outside the TL [target language] community and the naturalistic learner within that community” (p. 20). In other words, by attending a year’s study abroad, L2 learners are exposed to formal study settings but also to naturalistic contact with L2 community (via informal setting). As Freed (1995, as cited in Regan *et al.*, 2009, p. 34) confirmed, study abroad learners were found to have an improved “fluency” by speaking their L2 more often and more confidently than learners who had their L2 education in their home country.

Some studies examined the effect of the degree of formal language instruction on L2 speakers’ foreign accents but found no effect (e.g. Thompson, 1991; Elliott, 1995; Flege *et al.*, 1995). However, Bongaerts *et al.* (1997) investigated five Dutch late learners of English who were rated by the native English speakers and their ratings were comparable to their native English peers. The authors explained that the learners received intensive but unspecified training of English RP sounds. Moyer (1999) examined 24 Anglophone graduates in German, who had no exposure to German language before the age of eleven. She found that participants who had previous language instruction of segmental and suprasegmental features obtained ratings similar to native speakers of German. Regan *et al.* (2009) found that L2 learners typically switch between classroom instruction and naturalistic (i.e. host community) settings when learning L2. In summary, there seems to be some evidence that formal instruction obtained in learners’ home countries has an impact on the degree of L2 foreign accent. The review on English language instruction in Slovakia makes clear that SSBE is the main model for English pronunciation in both private and state-run institutions. The present study incorporates several factors linked to education to assess the degree to which

both length of study and age of onset affect participants' pronunciation even after years in a host country where SSBE is just one of many models of English pronunciation.

2.12.3c *Length of residence and age of arrival*

Length of residence (LOR) specifies the number of years participants spent within their host country, learning their L2 in an immersive environment. There have been several studies which claimed an effect of LOR on the degree of foreign accent (e.g. Purcell and Suter, 1980; Flege and Fletcher, 1992; Flege *et al.*, 1995), whilst others argued that they found no effect of LOR (e.g. Oyama, 1976; Thompson, 1991; Flege *et al.*, 2006). Additional studies found that immersion in the L2 environment might be an advantage for immigrants, and that the length of immersion did not correlate with foreign accent (cf. Moyer, 1999). Research on immigrants found mostly that it was the age of arrival to the L2 environment (and not the physical age or immersion experience) which accounted for the most native-like accent acquisition (Flege, 1995). For example, Flege *et al.* (1997) investigated L1 speakers of German, Korean, Mandarin and Spanish who arrived in the US as adults, and found that they were able to produce vowels similar to their local speakers, and though it was expected that some immigrants produced higher frequency of local variants than did others the reasons behind the variation were not understood. Length of residence was considered as a factor, but in an earlier study Flege (1988) argued that LOR does not affect L2 pronunciation for immigrants who arrive to their host country as adults. Drummond (2010, p. 52) attempted to resolve the situation by pointing out that SLA research simply rarely uses age as a social variable, instead preferring participants of similar ages in their samples.

Piske *et al.* (2001) provided an example that explored LOR further, which cast doubt on whether LOR has a significant effect on pronunciation when immigrants had extensive

English language education in their home country. They compared two previous studies (Flege *et al.*, 1995 and Meador *et al.*, 2000) that examined Italian speakers who moved to Canada at the age of eleven, and have been living in Canada for an average of thirty-five years. They used the same participants (N = 62) across four years. Italian speakers' pronunciation was rated on 9-point scale, from strongest foreign accent to native English-no accent. Both previous studies found that participants' degree of foreign accent remained constant within the four years of separated recordings. Piske *et al.* (2001) argued that since participants were highly experienced in their L2, four extra years of immersive experience didn't alter the degree of their L2 accent. In this example, therefore, the authors suggest that increased pre-immigration experience mitigated changes to pronunciation normally associated with increased LOR.

Out of all age-related factors, the age when immigrants were first exposed to their second language (e.g. age of their arrival) tends to be one of the factors that best predicts L2 accent acquisition (McKay, Flege and Imai, 2006). Previous literature found that the later immigrants were exposed to and interacted with their target language community, the stronger foreign accent they had (Flege, Munro, McKay, 1995; Flege, Yeni-Komshian, and Liu, 1999). For many researchers (see DeKeyser, 2000), these findings tied in well with the critical period theory for L2 learning. As Moyer (1999, p. 82) claimed, immigrants who learn their L2 after the critical period tend to be subject to "neurological and motor skill constraints," suggesting a "highly unlikely or impossible" probability of acquiring a native-like accent. However, although the age of arrival may have a strong effect on pronunciation it is not a consistently strong effect, and it is uncertain why some individuals have stronger foreign accents than others (see e.g. Birdsong, 2007). The decision to include LOR and age of arrival in the present study because previous research has demonstrated how each factor is

associated with traits related to the present study's focus: LOR, for example, was strongly associated with L2 accent acquisition, while age of arrival was mostly investigated in conjunction with the critical period. My study thus contributes to the existing literature by focusing on long-term immigrants who obtained their L2 learning in their home country and were directly exposed to local English variants only later in their adult life. As immigrant participants' exposure to Scottish English variants would have happened well after their critical period, the present study separates LOR from age of acquisition with regards to the specific English varieties particularly to life in Scotland.

2.12.3d First language (L1) influence

It is important to understand how the vowels are produced in learners' second language, as segmental perception might slow down the processing of their L2 (Munro and Derwing, 1995) as well as create difficulties in L2 word recognition (Bradlow and Pisoni, 1999).

Previous research discussed native and non-native differences and their limitations in regard of the L2 phonetic segments and their production (Flege and MacKay, 2004). The aim of this section is to briefly discuss L1 interference found in the previous studies to assess to what extent adults who began their L2 early in their childhood produce L2 vowels in a native-like fashion.

Kormos (2006, p. 116) suggests that the language learning process starts with incorporating "L1 phonemes for similar but non-identical L2 ones, often apply[ing] L1 rules of encoding to L2 phonology." In other words, before language learners develop a phonemic inventory for their L2, they are likely to use elements from their L1 phonemic inventory as much as possible when producing their L2. Flege (1987), however, argued that adult L2 learners might not find the leveraging process as helpful as younger learners, and instead

may begin developing a “new” L2 phonemic inventory without incorporating elements from their L1. Thus, it is important to discuss how L1 comes to play a role in phonology as well as its segments and syllables, and how these aspects are acquired among L2 speakers.

The Speech Learning Model (SLM) developed by Flege (see e.g. 1995; 2007) focuses on a naturalistic learning setting, where immigrants learn their L2 in their host country. He argued that L2 beginners’ speech might be different from native speakers because of their learning process rather than their lack of abilities in learners’ L2 instruction. For example, he found that in the short term, learners’ L1 phonetic inventory may overlap with their L2. For specific vowels which were non-existent in learners’ L1, learners might treat them as a “new” variant while the rest of the vowel inventory emerges over time. The SLM generates some predictions on language acquisition:

1. L2 vowels which are phonetically similar to their L1 inventory will be pronounced with less difficulties in earlier stages of language acquisition.
2. L2 vowels which are phonetically dissimilar to any L1 vowel would be pronounced with higher difficulty in L2 learning resulting in substitutions of adjacent L1 vowels.

In case of immigrants who are long-term users of their L2, the model suggests that after years or decades of use L2 vowels would be produced with high accuracy, similar to native speakers’ use. However, the model assumes a gradual shift from L1 to L2 phonetic inventories, and that the rate of the shift varies on an individual basis. Therefore, in the case of the long-term Slovak immigrants in the present study, the SLM model predicts that they would use a phonetic inventory that is neither like native speakers nor like their L1. Instead, the model suggests that these immigrants’ phonetic inventories would be along a continuum between the two “ideal” pronunciations. While the model considers age of arrival as a key factor in determining how far along the continuum immigrant Slovak

participants' productions are, the present study also considers social elements and attitudes as additional factors that may encourage or hinder eventual change into native-like pronunciation.

2.12.3e *Social class*

Variationists have shown that individuals typically reflect the speech patterns that are associated with their social classes. Social class has been a well-studied factor affecting pronunciation due to its traditional definition as an intersection of education, occupation, wealth, and behaviours associated with perceived status. In his attempts to quantify social class, Labov's (2001) work on five Philadelphia neighbourhoods considered levels of education, occupation, and family income to represent social class, with a hierarchical six-point scale per factor. His work was similar to Trudgill's (1974) attempts to quantify social class via six fixed factors, with a hierarchical five-point scale per factor. Though the scaling systems are nearly identical, the factors themselves demonstrate how the definition of "social class" is almost entirely reliant on the researcher's interpretations of cultural values. For example, Trudgill's evaluation includes *father's occupation* as a factor but not *mother's occupation*, reflecting and reinforcing socially constructed gender norms. The result is that definitions of social class are often problematic, and care must be taken when they are applied to social research.

The problematic nature of social class is further compounded when applied to an immigrant sample. Most divisions between established social classes in an L1 setting are shifted to a degree in different L1 settings, making class identification for immigrants significantly more subtle and indirect (Drummond, 2010). Establishing class for immigrants is complicated further when observing that many immigrants initially find employment in

occupations that do not accurately reflect their education or status levels in their home countries (Grabowska, 2005, as cited in Kobiałka, 2016). This could even apply to immigrants who found employment in their host countries that matched their training and previous employment in their home countries, yet found that their social class changed dramatically due to different contexts between countries (Kobiałka, 2016).

Despite the problematic nature of using traditional definitions of social class, the factor remains an important part of sociolinguistic analysis. Drummond (2010) notes that identifying immigrant participants' approximate class is a fair indicator of the type of exposure they receive in their L2 – in Drummond's example, the "type of English" that immigrants of different social classes receive (p. 60). Identity analysis also continues to rely on data from social class identification, although Block (2008) indicated that the definitions behind class identification need upgrading from traditional social stratification. Therefore, my study considered social class to a degree when selecting participants for the study, attempting to reach immigrant participants in relatively middle or upper working-class occupations – employment ranged from retail sales, to hairstyling, to waiting staff, for example – as well as comparatively similar indicators of wealth between participants. Due to the relatively homogeneous selection of social class between participants, the present study did not use class in its models predicting participants' pronunciation.

2.12.3f Identity

In the context of migration, identity is formed at the crossroads of languages, nations, and subcultures, where the immigrants' world transforms due to new economic, social, and political forces (Du Bois and Baumgarten, 2013). Block (2008) claimed that identity "is not seen as something fixed for life, but as fragmented and contested in nature" (p. 26). As he

pointed, migration is a form of de-stabilisation during which migrants struggle to find a balance after leaving the security of their home country, and moving permanently to another with the intention of learning the new language and inserting themselves into the new community. Because of this intention, migrants usually link their identities with their target language community, whether in solidarity with or in rejection of that community. These identities are often reflected in how migrants speak, as Darwin and Norton (2014) noted, “when migrant language learners speak, they do not just exchange information, they also reorganise a sense of who they are and how they relate to the world” (p. 57).

Piller (2002) argued that identity is an important social variable often associated with gender, ethnicity, nationality, race, and migration (see also e.g. Besnier, 2003; Bidzinska, 2013; Block, 2008; Diskin and Regan, 2015; Diskin, 2013; Drummond, 2012; Drummond and Schleef, 2016; Moyer, 2007; Newlin-Łukowicz, 2015, 2016; Norton, 2013; Rampton, 1995; Regan, 2013; Rindal, 2010). Le Page and Tabouret-Keller (1985, p. 181) argued that “an individual creates for himself [or herself] the patterns of his [her] linguistic behaviour so as to resemble those of the groups with which from time to time [s]he wishes to be identified or so as to be unlike those from whom [s]he wishes to be distinguished.” In other words, they argued that the way speakers use language depends not just on how we perceive ourselves but how we wish others to perceive us. The differences in how individual speakers use the language, or the differences between speakers could be thought as an “act of identity”.

Block (2008) argues that identity is multidimensional, incorporating dimensions such as ethnicity, nationality, gender, and social class, which occur simultaneously (p. 36). In a study that demonstrated how identities emerge with adoption of ethnic constraints, Newlin-Łukowicz (2016) examined linguistic and social constraints on ethnic identities among two

generations of Polish migrants in New York. She found that immigrants tend to adopt linguistic variables which help them construct different types of ethnic identities based on their persona (i.e. “Polish-Americans” and “Polish New-Yorkers”). Wenger (1998, in Block, 2008) suggested that the theory of the community of practice involves a close relationship between migrants and their community by creating an opportunity for social interaction and subsequent formation of their identities. He argued that “social participation refers not just to local events of engagement in certain activities with certain people but to a more encompassing process of being active participants in the practices of social communities and constructing identities in relationship to these communities” (p. 28).

Bucholtz and Hall’s (2005) study presented five key principles (Emergence, Positionality, Indexicality, Relationality, and Partialness) outlining identity through linguistic, social, cultural, and ideological processes. The first principle suggests that “identity is best viewed as the emergent product rather than the pre-existing source of linguistic and other semiotic practices and therefore as fundamentally a social and cultural phenomenon” (p. 588). This is particularly relevant to my study since it discusses identity as a post-immigration emergent product, much as language variation is an emergent product after immigration. It aims to examine how identity develops in conjunction with formation of new pronunciation norms.

2.12.3g Speech style

Sociolinguistic variationist studies have traditionally aimed to capture production from a range of contexts, or speech styles, representing different levels of formality. Since the 1970s, much of Labov’s research (esp. 1966, 1972, 1984, 2001, 2006) set the foundations for the methodologies behind modelling and explaining sociolinguistic variation and change

among both L1 and L2 speakers. The traditional Labovian aim was to elicit vernacular patterns of speech by focusing on a natural way of speaking with the intention to reduce attention speakers pay to their own speech (Labov, 1972, 2001). He proposed different topics as a means to cause distraction to speakers while recording and eliciting their spontaneous speech – for example, a story about death, or the danger of death (p. 9). Over the years, this methodology has been modified to fit researchers' interests and needs. Third-wave approaches to variation (e.g. Eckert, 2005; Coupland, 2007) explored different concepts that linguists utilise for analysing language variation and change. Due to the extensive framework and options already explored, existing studies demonstrate a variety of methodologies to elicit speech in different speech styles. In the present study, three speech styles are explored: a guided interview to encourage an unscripted style, a reading passage for a scripted style but natural-language style, and a wordlist with a scripted and artificial style.

Rampton (2013, p. 361) defines style as “a distinctive set of linguistic (and other semiotic) features indexically linked to typifications of the social world, produced and construed in situated interaction”. Researchers often examine speech produced in different style settings: for example, interviews are used for eliciting the relatively more naturalistic (or vernacular) speech, while reading passages and wordlists are meant to elicit “scripted” speech. The difference between scripted and unscripted styles is demonstrated in speech patterns, for example increased vowel reductions for spontaneous (i.e. unscripted) style (e.g. Sharma and Sankaran, 2011) and less so in the reading style (e.g. DiCanio *et al.*, 2014). That is not to say that speech styles are grouped into binary formal/informal settings only: according to Trudgill (2000, p. 83), “styles can be ranged on a continuum from the very

formal to the very informal.” This continuum enables the assessment of multiple levels of style, often even in the same experiment.

The variationist approach tends to isolate variants under study often drawn from sociolinguistic interviews, which typically set the bar for the lowest level of formality in research settings. Sharma (2011, p. 465) argued that the interview (i.e. less formal) style is an important predictor in exploring vernacular variants in speech because interview speech is “a reliable indicator of style range as comparable across individuals and social explanation as inductively observable in the interactions of a single variable with macrosocial factors.” Less formal speech is less constrained by social and linguistic norms, argues Sharma, which means that linguistic variation is affected by fewer variables. Hall-Lew (2009) pointed that some speech styles were found to be inappropriate in certain speech communities. She suggested that semi-structured and conversation-like interviews should be used to account for more comfort and ease in sounding more spontaneous.

Among sociolinguistic and phonetic researchers, style has been used to control for linguistic variation, enabling researchers to understand and predict how participants’ speech vary across different social contexts (DiCanio *et al.*, 2014; Schilling-Estes, 2002). A recent study by Boyd *et al.* (2015) investigated intra-speaker variation in different elicitation methods of a single speaker of San Francisco English. The data elicitation consisted of six tasks ranging from highly formal to less formal interview styles, including self-recorded speech away from the interviewer. The results found a significantly higher frequency of vernacular variants of the California Vowel Shift produced in self-recorded speech rather than formal interview speech. The authors concluded that although the laboratory tasks have been a “proven” tool for measuring vernacular speech, self-recorded tasks should be

incorporated into the future sociophonetic methodologies due to their potential to more closely approximate naturalistic settings.

The present study used a sociolinguistic interview setting without self-recorded speech due to having the data collected in one setting, and due to time management. Although it could be argued that a single session would have arbitrarily increased the formality of the entire data collection period, the different types of tasks were still able to demonstrate variation according to speech style.

2.12.3 Summary

Studies of immigrants' production have revealed numerous linguistic and social factors that affect variation. The wide range of factors affecting production indicate that speech production may be at least as complicated as identity (Bucholtz and Hall, 2005; Block, 2008; Du Bois and Baumgarten, 2013), with some variationist research (e.g. Diskin and Regan, 2015; Newlin-Łukowicz, 2016) suggesting a link between the two. However, much of variationist research does not overtly draw connections between variation, language attitudes, and identity. The exceptions to this rule are explored in greater detail in the following subchapter.

2.13 Links between immigrants' language attitudes, production, and identity

Having established the context of research into language attitudes and speech production separately, the next logical step is to explore connections between the two. Recent research has begun to examine these connections, although some sources date back to the late 1990s. The following sections outline key facets of the production-attitudes-identity connections explored in the present study.

2.13.1 Foreign accents and language attitudes

Studies have found that speakers' accent plays an important role in evaluating behaviour traits and second language (L2) competence (Dalton-Puffer *et al.*, 1997). A large body of research is dedicated to exploring how these judgments negatively affect immigrants at a disproportionate rate, regardless of whether the judgments are coming from native speakers or even other immigrants. For example, Johansson and Molin (2016) argued that non-native speakers tend to evaluate native speakers more favourably than they evaluate their foreign-accented native peers. The authors examined Swedish students' language attitudes towards their teaching instructors in Sweden, who spoke Swedish with a foreign accent, and compared them with their native-like accented teachers. They found that Swedish students evaluated native-like teachers of Swedish more favourably than they did foreign-accented teachers. Similarly, Boyd (2004, as cited in Johansson and Molin, 2016, p. 6) also found that the moment when the native Swedish listeners heard the teachers resulted in negative judgments towards those who differed from their native language norm. They argued that prejudice against non-native speakers due to their foreign accents is common, and typically results in an additional barrier to finding employment.

Many studies in language attitudes research (e.g. Clark and Schleef, 2010; Chiba *et al.*, 1995; Dalton-Puffer *et al.*, 1997; McKenzie, 2008, 2015; McKenzie and Gilmore, 2017) have shown that "native-speaker" varieties tend to be favoured over accented "foreign-sounding" ones, and usually by native and foreign participants alike. Holliday (2006) criticised this, arguing that native-speakerism is "a pervasive ideology within ELT [English Language Teaching], characterized by the belief that 'native-speaker' teachers represent a 'Western culture' from which spring the ideals both of the English language and of English

language teaching methodology” (p. 385). In other words, L2 learners are typically taught a prescribed and often idealised single language variety (e.g. Received Pronunciation), which forms their ideology of how the learned foreign language should sound, often deliberately excluding other language varieties from L2 speakers’ knowledge and repertoire.

2.13.2 Accent loyalty and accent standards

The preference to speakers’ own varieties, where individuals tend to rate their own accent as more pleasant or appealing, has been well-documented. Giles and Powesland (1975) and Coupland and Bishop (2007) coined the phenomenon as “accent loyalty”, while the phenomenon of preferring other language varieties was dubbed “linguistic difference”. The differences between the phenomena are investigated in McKenzie and Gilmore’s (2017) examination of 158 Japanese nationals studying in national and private universities in Japan. All participants went through at least eight years of previous language instruction prior to the researchers’ fieldwork. During the testing, they listened to seven female speakers: four L2 Asian forms (Japanese English, Thai English, Chinese English, and Indian English) and three L1 English varieties (Southern American English, Mid-West American English, and Scottish Standard English). The discriminating audience consisted of Japanese students who had been previously aware of the three English varieties. The results showed that the students judged native English varieties more positively in status, followed closely by the local accented variety (i.e. Japanese English), and last the other L2 Asian guises. For social attractiveness, the participants evaluated the Japanese English guise as the most attractive of all seven of the guises. The authors argued that the recognised accent features only added preference towards positive evaluation, suggesting a safeguarding of their

“intergroup loyalty”: “...identifiable forms of Japanese English were found to be salient markers of ingroup identity and accordingly, were also rated very favourably” (p. 161).

As non-native or foreign-accent language varieties typically receive low prestige scores, they are also usually identified with greater ease. For example, McKenzie’s earlier (2008) study found that the most easily identified accent for second-language Japanese learners of English was also the most heavily-accented one, Japanese English (90% accuracy score), followed by native accents (American and Scottish Standard English). The most problematic was the “moderately-accented” speaker of Japanese English, who was also the more integrated L2 speaker. Integrated speakers appeared to cause most difficulties in other researchers’ guise recognition tasks as well. Bresnahan *et al.* (2002) argued that “speaking with a foreign accent identifies the other as a member of an out-group and is likely to evoke negative stereotypes” (p. 172). Their study explored the role of ethnic identity by investigating the attitudinal and affective responses of 311 undergraduate students towards two speaker roles, a listening exercise describing a visit by a friend and a lecture given by a teaching assistant. Each role in the listening task (“friend” and “teaching assistant”) was presented via three stimuli, an American English accent, an “intelligible foreign” accent, and what Bresnahan *et al.* describe as an “unintelligible foreign” accent. Intelligibility was auditioned by 15 non-native male speakers, two of which were selected for the most and least intelligible speakers. Judges were further employed to assess these four speakers to further determine their intelligibility. The confounding was controlled by reading of the two scripts, which were similar in length, loudness and rate. The results showed that students strongly favoured friends over the teaching assistants regardless of their accent. Students also favoured American English and the intelligible foreign accent over the unintelligible foreign variety. However, the study also found that students who

exhibited a strong personal preference for American English in their own speech strongly favoured American English for both speaker roles, while students without this accent aim were far more likely to favour the intelligible foreign accent. The authors concluded that the foreign-accented teaching assistants were perceived as highly attractive and competent by undergraduate students, but only so long as the variety they heard was intelligible.

A study by Ahmed, Abdullah, and Heng (2014) also investigated Malaysian university students' attitudes towards native (British and American) and non-native English varieties (Japanese English, Korean English and Austrian English) and their familiarity with these accents. The study adopted a verbal guise technique and an accent recognition task to explore direct and indirect instruments in language attitudes. The results indicated that Malaysian students strongly favoured the non-native varieties in terms of both social attractiveness and status; however, in terms of the familiarity with accents, they were far more successful at distinguishing the foreign accents from the native accents, though they were not able to distinguish between the two L1 varieties. The authors argued that this might have been due to the lack of exposure to either of the varieties through their local speech communities or available media.

The above findings go the opposite way to what other research has found in regard of the Received Pronunciation (RP) variety, which is often evaluated as highest in terms of social status and/or prestige by both L1 speakers (e.g. Edwards, 1982), and L2 speakers (e.g. Coupland and Bishop, 2007; Dalton-Puffer et al., 1997; Giles, 1970; Ladegaard, 1998; Ladegaard and Sachdev, 2006; Taylor, 2000). In their study, Ladegaard and Sachdev (2006) investigated language attitudes among Danish students who were taking courses of English as a foreign language (EFL), and during their courses the students studied British and American English varieties. The researchers tested the students on their attitudes towards

American English, Australian English, Received Pronunciation, Scottish English, and Cockney varieties. They found that the degree of accent self-evaluation positively correlated with keenness of interest in American culture, and with rates of American English lexical use. However, although the students generally expressed positive attitudes towards American culture, their attitudes were nowhere near as positive at the prospect of acquiring American English. Instead, they demonstrated strong interest in RP for competence, linguistic attractiveness, and prestige. That said, the participants still downgraded RP in terms of social attractiveness and personal integrity dimensions. The authors concluded that although EFL students reported favouring American culture, their preference for learning RP might have been the influence of EFL instructors. Taylor (2000) interviewed 83 EFL students from twenty-one countries in the EU, Asia, and South America. He reported that students found the RP variety more prestigious than their local variety on every observed quality related to prestige, i.e. status, competence, solidarity, and speech quality. Taylor also found the same results for South American and Asian students who received English language instruction via an American medium, i.e. American instructors and texts; EU students, meanwhile, received instruction via RP media only. He concluded that aside from General American and RP, there was no alternative “international” model for EFL learners.

This conclusion was supported by other research both before and after Taylor’s study. For example, Dalton-Puffer *et al.* (1997) also confirmed these findings with Austrian students, and reported that RP was indexed as the students’ most important model of pronunciation. Coupland and Bishop (2007) studied 34 English accents varieties using the *BBC Voices Project* survey materials. The 5010 UK listeners who took part in the study rated the varieties on social attractiveness and prestige to assess individual varieties and elicit participants’ stereotypes. The results confirmed that the standard varieties such as

“Standard English” and “Queen’s English” were generally favoured most of all on both social attractiveness and prestige. However, between-groups evaluations revealed that only the respondents from South-East England rated them highest in attractiveness, from all regions tested, and the response was strong enough to influence the overall results. The authors also used two varieties for Scottish Standard English, namely “Edinburgh English” and “Scottish.” The findings demonstrated in-group loyalties for Welsh, Northern Irish, and especially for Scottish respondents who indicated “more positive judgments than respondents from all the other regions” on both social attractiveness and prestige (p. 81). The authors also found that respondents favoured their own accents, the Southern Irish English, Scottish English, Edinburgh English and New Zealand English above Queen’s English, in terms of social attractiveness. The study an example of how social attractiveness is linked to solidarity, and this association will be explored in the present study.

In all, these studies present similar trends where RP is regarded highly in terms of prestige, and non-standard varieties are mostly evaluated high on social attractiveness – though only the non-standard variety most associated with each participant group. In such an example, judgements of the selected non-standard variety are less reliant on objective language assessment than marking one’s membership within that in-group (Joseph, 2010). McKenzie (2008) suggested that familiarity with RP might be the result of previous language instruction imposed on students in their home countries. Low prestige scores for non-standard varieties, as Clark and Schlee (2010) pointed out, may be the result of reactions towards varieties that speakers aren’t familiar with. They acknowledged that it is debatable whether the speakers’ ratings were due to genuinely considering standard varieties more prestigious, or to simply reacting to their familiarity. These findings are important as they provide the reason for including the Slovak-accented Englishes during the accent evaluation

section of the present study, as Slovak-accented English is a non-standard but familiar variety to the long-term Slovak immigrants. The Slovak-accented English varieties therefore fill a niche between the (standard, familiar) SSBE variety and the (non-standard and unfamiliar from ELLs' perspective) Scottish English variety.

2.13.3 Identity and production

Traditional studies that examined the relationship between pronunciation and immigrants' integration into their host countries suggested that identity, integration, and language attitudes had little effect on pronunciation. Oyama (1976) and Thomson (1991) found that positive attitudes and motivation did not play any role in whether L2 speakers exhibited native-like productions. These results made the concept that identity has effects on attitudes and pronunciation a contentious issue for a generation of linguistic research. However, with improved methodologies and more globalist philosophies recent research has begun to refute these assumptions. Previous research has confirmed that positive attitudes towards language (see e.g. Gardner and Lambert, 1972; Garrett, Coupland and Williams, 2003) and success in L2 acquisition are strongly linked with learners' ability to self-identify with the host country (e.g. Moyer, 2007; Rindal, 2010).

Much of the research examining L2 learners' attitudes, formation of identities and learners' production has also documented them through post-colonial countries (e.g. Johansson and Molin, 2016; Lindemann, 2002; McKenzie, 2006, 2008; McKenzie and Gilmore, 2017), many of which – e.g. Australia, India – have increased rights of movement due to their relationship with the UK. Modiano (2009) argued that with increased rights of movement throughout the EU, L2 attitude studies have begun to focus on European immigrants as well. Slavic immigrants in the UK have been a particular focus of this study.

Schleef, Meyerhoff, and Clark (2011) observed teenage Polish immigrants' productions of the *-ing* variants in Edinburgh and London locales. The researchers found that Polish participants in London and Edinburgh replicated the *-ing* variants common to the local language communities in these areas. Despite these conclusions, further studies are necessary to support the researchers' hypotheses: the researchers limited their evaluations to adolescents who specifically came to the UK on a temporary basis with the intention to learn English.

While Schleef *et al.*'s (2011) and Clark and Schleef's (2010) studies oriented their focus on short-term immigrants, other studies have found that effects from other motivations far outweigh effects from immigrants' length of residence (LOR). Moyer's (1999) earlier study investigated a situation where immigrants' length of residence did not have a direct impact on their performance. One subject in particular, an adult male first exposed to the German language at age of 22, differed consistently from the rest of the participants in that he had no prior knowledge of German, and Moyer argued that his motivation stemmed from personal "fascination with the language and with Germans" (p. 98). As a result, the speaker was rated by four judges as a native speaker during all speaking tasks. Regan's (2013) study used a variationist approach to investigate a similar situation of vernacular use of Polish speakers in France, namely their deletion and retention of *ne*, the first negation particle. She hypothesised that with longer periods of residence in France, Polish speakers would use more vernacular variants. However, Regan found two participants with special situations that set them apart from the rest. The first, a high-proficiency bookseller who identified closely with his L1 culture, claimed a very long length of residence (LOR) but had a very low *ne* deletion rate. The second participant was a basketball player, and despite her short stay in France she achieved a high deletion rate.

Much like Moyer's special case, the second speaker showed very positive attitudes towards French culture and language, while in the first case the LOR had little impact at all in a non-motivated immigrant. While Meyerhoff and Schlee (2014), Flege *et al.* (1995), and Moyer (2007) reported LOR to be a crucial factor in accent acquisition, Moyer (1999), Flege *et al.* (2006) and Tahta *et al.* (1981) found that length of stay in a host country did not help improving L2 immigrants' pronunciations. Thus, while studies suggest that LOR may not be the ultimate deciding factor in determining immigrants' productions, other studies indicated that LOR should still not be discounted when measuring relationships between immigrants' language attitudes and production.

Bidzinska's (2013) study offers that length of residence alone may not drive acquisition, but that motivation plays a significant role as well. The study explored the Polish diaspora in Austria, analysing attitudes, the process of integration, and identity formation among Polish immigrants. She closely examined the identity of Polish-ness addressing Slavic heritage, Catholicism, and immigration policies in Austria. She found that participants were torn between two cultures, which led to the creation of transnational identities that incorporated elements of both cultures. These conclusions closely matched those of Norton (1997, 2001, 2013), who argued that L2 learners who were highly motivated to learn a second language achieved higher cultural understanding and were more likely to integrate into their local communities. These language learners created identities that accommodated both native and non-native cultural values. A means by which immigrants accommodate multiple cultures is the balance of associative and dissociative attitudes. Rindal (2015) documented that Norwegian participants preferred native English accents (British and American) to signal "comfortable" qualities associated with these accents (p. 259). Although many students were hesitant to use L2 accents, they recognised that native accents were

associated with high status both in and outside of the classroom. Rindal mentions that language choices are “influenced by cognitive and affective evaluations; the participants have *beliefs* [emphasis original] about the qualities and associations English accents might signal, and *feelings* (emphasis original) of favour and disfavour, approval and disapproval towards the accents” (p. 261). Rindal’s example demonstrates how associative and dissociative attitudes can exist simultaneously: the students in the study felt uncomfortable “imitating” a native accent, causing resistance to its use (i.e. dissociation); but the students recognised the apparent prestige in successfully using the native accents, so it remained a model and final goal of instruction (i.e. association). In essence, the L2 speakers felt pressure to both keep using Norwegian-accented English and to use British- or American-accented English. As motivational attitudes, elements of association and dissociation are therefore the foundation of learners’ beliefs and choices, onto which they map their identities. The balancing act between associative and dissociative attitudes, particularly with respect to accents from primarily English countries, has also led to the philosophy that the English language belongs to all speakers, “[whether] native or non-native, whether ELS³ or EFL⁴, whether standard or nonstandard” (Norton, 1997, p. 427).

So far, the reviewed literature on migration has focused mainly on long- and short-term immigrants who visited their host countries with the intention to work and interact with a native community. Sociolinguistic and SLA research has also examined learners in a study-abroad context and has shown evidence that positive attitudes generally lead to learners’ increased exposure to the L2, and that language instruction through native speakers is very beneficial for the acquisition process (Regan *et al.*, 2009). Research into the

³ English-Language Speakers

⁴ English for Foreign Learners

relationship between short-term study abroad and L2 proficiency has yielded varying results so far (see e.g. Yager, 1998; Freed, 1995). In many cases, students experience particular growth in their language skills when they are motivated to learn a second language while in a foreign country. For example, Nagy (2008) investigated ten Hungarian undergraduates who came to live with English-speaking families through *au pair* programmes and took English classes while studying abroad. She investigated participants' language skills during their short-term residence abroad (16 months) and found that whilst the participants' vocabulary, fluency, and pronunciation skills achieved high levels of improvement, their grammar, reading, and writing skills did not. This ceiling in language development may have been affected by a resistant identity, which was maintained in part because the immigrants "found it difficult to establish closer contact with [native speakers]" (p. 172), and ultimately decided to return to their home countries despite their positive attitudes toward local speech communities. These results agree with a similar study performed by Brecht *et al.* (1995), who found that only certain aspects of students' L2 proficiency increased with living and studying abroad as opposed to attending language instruction in their home country. Students who studied abroad achieved higher results in listening, speaking and reading proficiency, and skills related to writing were unchanged. An earlier study by Brecht and Davidson (1992) strongly suggested that hurdles to develop language skills in an immersive setting are linked with the context of the setting, which in turn shapes learners' identity. In their 1992 study, Brecht and Davidson found that female American Russian-language learners were subject to high degrees of sexist behaviour while learning the language in Russia, which their male (American) colleagues did not experience. The result, the authors noted, is that the experience caused the female language learners to resist shifting their

identity to integrate with the local speech communities, which in turn “negatively affect[ed] their learning opportunities” (p. 44) in comparison to their male colleagues.

Though comparatively fewer studies have examined transnational identity in immigrants, those which have done so tend to recognise transnational identity as a representation of the relationship between language attitudes and cultural integration. Block (2008) characterised identity as “socially constructed, self-conscious, ongoing narratives that individuals perform, interpret and project in dress, bodily movements, actions and language” (p. 27). Furthermore, Derwing and Munro (2008) built on Block’s definition of identity as the relationship between attitudes and integration, arguing that identity also encompasses language production, and “reject[ed] the idea that pronunciation instruction and identity preservation are mutually exclusive” (p. 487). A further theory of identity construction is Schumann’s (1986) Acculturation Model, which draws links between the formation of identity and immigrants’ length of residence. In this model, increased exposure to the target community is associated with higher integration to that community. While this model forms the basis of later research into transnational identity formation, it does not place great significance on the role of personal motivation and language attitudes to immigrants’ adaptation to their host country, and as a result this model is not a key contributor to the overall themes of the present study.

Examples of the connection between identity and pronunciation have appeared as notable case studies in recent research. Rindal (2010) explored L2 pronunciation of American and British varieties among Norwegian adolescent learners, who used English pronunciation as a mean of self-representation in their community. She found that in case of their GOAT vowels (Wells, 1982), more than half of her sample used American English (associated with “informal”) narrow closing diphthong [oʊ] instead of geographically and

culturally closer British English (i.e. associated with school) [əʊ] variant. However, the speakers who used RP pronunciations consistently had the most positive attitudes and the highest levels of interest towards the British culture. A study by Yitzhaki *et al.* (2013) explored the situation of two adolescent Russian immigrants in Israel. The first participant, Faina, demonstrated a strong attachment to her host country, including near-total integration into Israeli and secular Jewish culture. Though she preserved her Russian roots for 'practical' reasons and did not hide her Russian background, she distanced herself from similar immigrants who self-identified as Russian. The second participant, Rina, showed more attachment towards her Russian identity, but demonstrated a keen awareness that her identity was no longer singularly Russian. Instead, Rina appeared to acknowledge elements of a more transnational identity as a result of her immigration. These studies demonstrate the varying identities found across immigrants of similar social backgrounds (cf. Nguyen and Benet-Martinez, 2013), a feature that shapes the methodology of my own study.

Variationist studies have begun to observe that immigrants do successfully acquire features of local language communities, even when these features are not evident in standard language varieties. In her studies with immigrants' replication of the French *ne* particle, Regan (2007) reported a "dramatic increase in deletion" (p. 343) among speakers who spent a year in France and subsequently a year back in the classroom. However, outside the receiving country, she found learners' acquisition only "stable" (ibid.) and their *ne* particle deletion increased only slightly. In their longitudinal study, Regan *et al.* (2009) found that while studying abroad, learners acquired "pseudo-naturalistic status" (p. 20), which allowed them to acquire informal features displayed by their receiving community "through naturalistic contact with the L2 in everyday social situations" (p. 20). Regan and

her colleagues also reported that after a year of studying abroad, L2 speakers resembled native speakers of their community significantly more than those who received L2 language instruction but never left their home country (p. 134). The results suggested that standard models of production evident in formal L2 instruction may not be sufficient for helping learners acquire native-like production, and that the desire or the opportunity to integrate with local language communities is far more effective at acquiring native-like status. This desire may also apply to language learners who have already left their home country, as Drummond (2012) found when investigating variation of *-ing* variants, the social identity and future plans among Polish teenage immigrants in Manchester. He found that speakers who produced the [ɪn] variant more frequently were also those with a decreased desire to return to Poland, unlike those who produced L1-influenced [ɪŋk] variant. Drummond used his participants' decision to remain in their host country as a means of quantifying their identity. The present study also inquired about future plans to investigate Slovak immigrants' choices and to establish whether or not this variable plays any role in formation of immigrants' identities.

In all, recent research has suggested that immigrants' positive attitudes and different motivation reasons (either instrumental or integrative) increased immigrants' chances of adapting to the receiving country (Bongaerts *et al.* 2000; Dörnyei, 1998; Feldman *et al.* 2008; Kerswill, 2006; Lamb, 2004; McKenzie, 2010; Moyer, 2007; Regan, 2013; Schleef, *et al.*, 2011). While some studies found that integration and positive attitudes go hand-in-hand with formation of bicultural identities, some research showed evidence that immigrants struggle to adapt to their receiving country. For example, Flege *et al.* (1995; 2006) and Piske *et al.* (2001) examined immigrants' difficulty in replicating local language norms regardless of immigrants' lengths of residence, but they found strong correlations between age of

arrival and pronunciation acquisition. As a result, previous studies found that motivations, age of L2 learning, and age of arrival strongly predict strength of perceived foreign accent.

As links between identity and pronunciation have been well established in literature, recent studies in L2 production have focused on how to measure and report identity. Hammer and Dewaele (2015) conducted a study on 149 Polish immigrant university students residing in the UK that focused on immigrants' perceived acculturation to the host country as a metric defining identity. The participants in the study filled out an online questionnaire with close-ended questions, which asked about their integration towards their English group, followed up by open-ended questions about their L1 and L2 linguistic experiences when entering the target country. The results confirmed that Polish-born immigrants who self-identified as "highly and completely" acculturated rated their L2 proficiency higher than did the immigrants who were less acculturated. They also found that participants who reported frequent L2 use attained higher proficiency levels than participants who claimed to use English less frequently. Self-reported acculturation scores were also closely associated with age of arrival and participants' physical age in a positive relationship, as was participants' length of residence. Hammer and Dewaele's findings are congruent with previously established literature which examined acculturation level and proficiency (Schumann, 1986; Clément, 1986; Hammer, 2017) and age of onset (Hyltenstam, 2014; Abrahamsson and Hyltenstam, 2009). Hammer and Dewaele's (2015) work is particularly relevant to the present study as it links identity with participants' self-reported scores representing their own experience, similar to how identity scores and the SCOTACCENT scores (see subchapter 4.3) in the present study allowed participants to represent their own experiences.

Other recent research has explored different ways of quantifying identity. Howley's (2015) doctoral study explored the acquisition of local dialect features (*lettER*, *happY*, *GOOSE* vowels) across Roma immigrant adolescents in Manchester and associated dialect acquisition with participants' social circles. Incorporating ethnographic methodologies, Howley found that the immigrants can and do acquire features evident in local language variation, and that the key factor in immigrants' acquisition for the immigrants is their social network. Howley's results suggested that social networks enabled immigrants to access language resources in the form of input from local language speakers, in addition to social input that shapes speaker attitudes and social integration. In short, Howley argued that input from members of the local community helped immigrants to construct their identity as members of that community, and that wider social circles allowed for increased input. By exploring such close links between identity and social networks, Howley's study provides further means of quantifying identity. The present study therefore incorporates social networks in its questionnaire, and uses self-reported results on social networks as a factor in later analysis of language attitudes and speech production.

2.13.4 Summary

Connections between immigrants' speech production, language attitudes, and identity are evident in existing research, though the research examined did not observe the three factors at once. The present study builds on existing research by observing the triple connection, and by exploring how significant the connections are to immigrants' experiences in their host country. The linguistic and social factors explored in the present study also have a solid presence in existing research, indicating that the study is replicable. The following chapters explore the methodologies used to assess immigrants' language

attitudes and speech production in detail, with separate results and discussion subchapters for language attitudes and speech production. The separate parts of the analysis will then be brought together and evaluated in Chapter 8, which outlines overall conclusions and implications of the current study.

Chapter 3: General Methodology

3.1 Introduction

This chapter describes the participant groups and methodologies that apply to all aspects of the research. The present study adopted variationist concepts outlined by Labov (1966, 2001, 2006) to investigate immigrants' language variation and how it is influenced by language attitudes, identities, and speech styles. The purpose of the present study is to investigate how long-term immigrants' pronunciations approach those of native speakers (e.g. Bongaerts, 1999; Moyer, 1999; Regan, 2013). Piller (2002, p. 188) suggests that learners' identity, motivation, agency and "the control they have over their own learning" is more important than the age when they started learning their L2. While subsequent chapters will investigate the specific methods and results from analyses of identity, language attitudes, and speech production, the present chapter outlines the factors and methods that will be repeatedly examined throughout the present study.

3.2 Pilot study results and publications

The final methodology for the present study was shaped by the author's previous research and a forthcoming publication. The most crucial works for the present analysis are a pilot study with Czech and Slovak participants, completed in August 2014; and a paper co-authored with Dr Lauren Hall-Lew in May 2015. An overview of these works and their contributions to the present study are as follows.

3.2.1 Pilot study: Findings and implications

One of the primary aims of the pilot study was to establish links between informants' acquisition of and attitudes towards a different variety of English than what they learned in their home country. As a result, the methodology was built to elicit respondents' details in several categories: their L2 learning backgrounds; the amount of and type of L2 formal instructions received in their home country; self-perceived competence in English; language use with their family, friends, co-workers, their familiarity with Scottish accents; the amount of time spent abroad; and their perceptions towards their learned (i.e. primarily RP English) vs acquired (i.e. Scottish) varieties. The study elicited results that quantify emotional attachment to the SSE variety, motivations behind immigration, and attitudes toward local peers. The pilot methodology also examined participants' English proficiency and social networks. Finally, a secondary goal for the reading passage in the pilot study was to acquire speech to be used later for creating the Verbal Guise Task (e.g. Carrie, 2014; Ladegaard, 1998; McKenzie, 2010; Soukup, 2009).

Cohen *et al.* (2000) claimed that piloting is the most important component of any research study (p. 260), particularly when examining respondents' attitudes and perceptions (McKenzie, 2010). In an effort to assess whether the instrument fulfilled its purpose, the main aim of the pilot study was to test the reliability and practicality of the research instrument (Cohen *et al.*, 2000, p. 260). The pilot study was presented at postgraduate and international conferences during the course of its development and analysis to obtain as much feedback from peers as possible.

The pilot study demonstrated that methodologies for both production and perception sections generated viable data for use in the main study. No difficulties were encountered when using the production stimuli to generate ample data (for production

results see Elliott and Hall-Lew, 2015). The data compared phonetic realisations of the FACE and GOAT vowels across different language groups, vowel classes, and the speech styles. The results appeared to suggest that Slovak and Czech immigrants produced similar patterns to their local peers, and to non-immigrant Slovak ELLs in Slovakia, in response to different speech styles. Vowel choice also proved to be a significant factor in analysis, with mixed-effects models analysis demonstrating acoustic differences for the FACE and GOAT vowels, across Czech and Slovak immigrants and across all speech styles. With respect to speech style, only the word list appeared significantly different from the other styles (i.e. interview and reading passage) moving into different directions for all four language groups: while Scottish English speakers exhibited relatively more monophthongal pronunciation patterns, immigrants and Slovaks in Slovakia shifted into other direction, producing more diphthongs. Although previous research by Meyerhoff and Schlee (2014) found that style appeared to have little impact on immigrants' pronunciation, this pilot study appeared to provide contrasting evidence, prompting the main study to further investigate the relationship between immigrants' language production and their attitudes towards local language community.

When factoring identity results from the language attitudes section it was apparent that immigrants' pronunciation patterns were divided across those who self-identified as Scottish, signalling a change in social self-construction (+identity); and those who consciously resisted to adapt to their local language community, and self-identified as Slovak or otherwise non-Scottish despite their long-term residence in Edinburgh (-identity). The element of self-identification therefore became an important part of data analysis in the main study, and additional methodologies (e.g. verbal guise task) were developed to confirm the relationship between immigrants' production, attitudes and identity. Though

not a definitive measure by any means, this binary definition of identity helped with selecting different foreign-accented guises for the Verbal Guise Task (see subchapter 5.2). Chapter 4 unpacks the notion of identity, and particularly immigrants' identity, in a much more nuanced manner.

3.2.2 Elliott and Hall-Lew (2015). Production of FACE and GOAT by Slovak and Czech immigrants in Edinburgh.

The 2015 collaboration with Dr Lauren Hall-Lew was a re-examination of the pilot study results, particularly the effects of style on production results among the immigrant groups. Like the pilot study, the 2015 paper was also notable for the fact that it used production results from raw data, i.e. without vowel normalisation or data transformation.

Elliott and Hall-Lew's (2015) paper discusses the analysis of four main variables that have shaped the analyses in this thesis: participant's L1, PLACE OF RESIDENCY (later combined with participant's L1 to become GROUP), STYLE, and VOWEL (i.e. LEXICAL SET). Mixed-effects model and best-fit analyses were used to examine interactions between factors. Key results indicated that the STYLE was the strongest predictor of monophthongal productions, followed by VOWEL and GROUP. Wordlist style was strongly associated with diphthongal realisations among the three non-Scottish groups and monophthongal realisations for the Scottish group. The analysis of GROUP variable indicated that Slovak and Czech immigrant participants exhibited productions that were significantly different from both the native Scottish and the Slovaks in Slovakia groups. In particular, Slovaks in Slovakia were found to produce the most diphthongal productions for FACE vowel and Czech respondents produced GOAT vowel with higher diphthongal quality than Slovaks in Slovakia. Scottish participants produced the most monophthongal productions, especially for FACE vowel in the wordlist.

The results of the 2015 study revealed some interesting effects between factors, but the analysis itself left much to be desired. The mixed-effects model proved useful in finding associations between factors on multiple levels, but the results were largely interpreted by visual analysis. As a result, the model did not permit more than 3-4 factors of analysis before becoming too complicated for further visual analysis. Though sufficient for that specific paper, results from the 2015 study prompted the need for a different model in the final dissertation. A multiple regression model with random effects was selected for the analysis because it permitted me to build a model that incorporates the wide range of linguistic and social factors investigated with each participant group.

3.3 Participants in the main study

The present study used three participant samples: immigrant Slovak participants residing in Edinburgh, Scotland, native Scottish participants residing in Edinburgh, and native Slovak participants residing in Trnava, Slovakia. A comprehensive perspective is needed to investigate how language learners acquire English pronunciation in the immigrants' home country, i.e. during language instruction. The present study therefore utilises comparative study of both pronunciation and attitudes: language attitudes are compared across immigrant and non-immigrant participant groups in Edinburgh; and a third group, the non-immigrant participants from Trnava, was added for comparative study of FACE and GOAT pronunciation. Not only would comparative analysis help to identify interlanguage effects (e.g. see Jenkins, 2009), but the data would also provide a baseline to determine whether significant pronunciation differences between language groups are indeed indicative of dialect acquisition or resistance. The combination of these samples was meant to produce "pre-immigration" and "ideal" representations of the immigrant production – i.e. SSBE as an

English production model before immigration, and Scottish varieties acquired after immigration. The selected participants were all female respondents, who were chosen based on evaluation from the pilot study (subchapter 3.2): the vast majority of total respondents were women, and out of my desire to create a non-threatening and comfortable atmosphere for myself and my participants I chose to work with exclusively female participants for the pilot and for all subsequent data collection. Norton (2013) used a similar approach when studying variation and cultural acquisition of immigrants in Canada. She was also approached by primarily female volunteers regardless of the time she spent getting acquainted with her class, and she chose to use only women in her study. She explained that this was particularly due to the comfort of mutual meetings (they met in participants' homes and her own) and the "intimacy of the project as well as the time commitment involved" (p. 65). The current study collects data on participants' personal opinions and judgements from a period shortly before the 2016 Brexit referendum, so I sought all measures to create a comfortable environment and encourage participants to provide intimate detail of their backgrounds and attitudes.

3.3.1 Slovak immigrants in Edinburgh

The immigrant sample consisted of 20 first-generation female immigrants, 7 of whom arrived before and 13 after the accession of A8 countries to the EU (see Introduction subchapter 2.1). Though all were adults living in Edinburgh and were fluent in English, their backgrounds varied in terms of age, length of residence, amount of formal English instruction, and occupation (see Appendix A15). Participants' families in Scotland also varied in terms of their nationality and background, though data on each spouse's nationality was considered for qualitative analysis only, in conjunction with participants' social circles.

Participants' exposure to English language instruction included state-funded instruction in primary and secondary schools, and some respondents undertook further English language instruction at private institutions. All participants were also resident in Scotland for at least five years. The length of residence requirement for immigrants was set for a minimum of five years in order to ensure participants' familiarity with local variation and their adaptation to their local culture and community (Munro and Mann, 2005; Edmonds and Guesle-Coquelet, 2015).

The sample was selected based on the following criteria. All immigrant participants:

- Were aged between 18 and 65
- Were born and lived in Slovakia until late adolescence or later
- Had a length of residence (LOR) in Edinburgh of five years at minimum
- Were exposed to English instruction prior to arriving to Edinburgh
- Had lived primarily in Scotland after immigrating to the UK, and no more than a year outside of Scotland within the UK post-immigration

Immigrant Slovak participants were aged between 22-42 (mean: 33.0, SD: 5.81), and had lived in Edinburgh (LOR) between 5-18 years (mean: 9.2, SD: 3.77). Participants were approached by contacting previously piloted participants (see section 3.2.1) and using announcements on Facebook. Both methods were successful, and they further led to friend-of-a-friend recommendations after initial interviews. Early participants recommended their Slovak friends or neighbours, who were of similar ages, had similar lengths of residence, and had comparable English proficiency. One of the greatest sources of participant leads was the Czechoslovak Children Club Edinburgh (www.scsfund.net), a group that organises meetings for Slovak and Czech children and parents. Using Milroy and Gordon's (2003) and

Tagliamonte's (2006) judgement sampling, Slovak participants were further selected from the pool of applicants to ensure they met expectations of length of residence and English language proficiency, and that they had similar occupations (i.e. representation of social class). In total, I interviewed 25 highly fluent bilingual Slovak immigrants in one-on-one sessions. Bilinguals living in Fife were later excluded from the study, as was one participant who held dual citizenship and Slovak-Hungarian national identity. Therefore, five immigrants were removed from the study before data analysis.

All immigrant participants were working residents, as opposed to temporary students or students who came for a study abroad (see Regan, Howard and Lamée, 2009), who tend to have limited contact with native speakers and local community (cf. Edmonds and Guesle-Coquelet, 2015). Examples of participants' occupations included office positions (e.g. human resources) and the service industry (e.g. restaurant service, hairdressing). Regan (2013) found that students could acquire only limited variation depending on their length of residency, social networks, and self-identification. Therefore, the purpose of this study was to explore the degree of sociolinguistic variation among long-term residents with strong social connections (i.e. local and foreign) and cultural awareness.

Reiersen (2013) pointed that the judgement sampling method is not ideal as it does not represent a random sample from the population. Chambers (1995, p. 39-40), however, argued that "truly random samples [...] have proven to be both unmanageable and unnecessary in sociolinguistic research" because to gain a random sample would require a very large number of participants. The present study's non-random sample focused on immigrants who have lived long-term in speech communities that have relatively low visibility in formal language instruction. The specific subset of participants in the present

study is still general enough to apply to other groups, i.e. immigrants living in non-standard speech communities, so results can be generalised to similar immigrant populations.

Although the number of immigrants in this sample is relatively small to give the full picture of the speech of the immigrant community in Scotland, this study aimed to give a closer look at pronunciation differences between Slovak immigrants, Slovak residents in Slovakia, and Scottish English participants.

3.3.2 Native Scottish participants

The study also included 8 native Scottish English monolingual female participants, born and residing in Edinburgh. In order to avoid introducing undue variation to an otherwise small sample, the Scottish English participants were typically part of the immigrant participants' extended social circle, including friends, friends-of-friends, and work colleagues. The analyses of these native participants should therefore result in a better sense of the production input specific to my key participants.

All native Scottish participants were aged between 22 and 46, with a mean of 34.88 years ($SD = 9.52$ years). Their families had history of living in Edinburgh or nearby regions of Scotland. As with the immigrant Slovak participants, individual Scottish participants are referenced using pseudonyms decided at the start of data analysis. Two native Scottish participants, "Agnes" and "Leslie," said that they spent a number of years outside of Scotland. In particular, Agnes said that due to her father's and husband's early occupations as naval officers, she had spent a considerable number of years outside of Scotland as a child; whereas Leslie studied and consequently worked as an English instructor in Spain for 7 years total.

3.3.3 Slovak L2 learners in Slovakia

The native Slovak sample selected for this study consisted of 6 Slovak participants who were born and have lived in Slovakia until early adulthood, and who were comfortable and fluent bilinguals of English. As a local to the area, I was able to easily approach them through personal contacts and recommendations, Internet advertising, and word of mouth. The participants were selected from 33 bilingual female English language learners (ELL) who responded to the ad, and whose language fluency was tested either by universities, English language-specialised secondary schools, or individual language institutions prior to our meetings. Out of all respondents, 6 with the most similar language backgrounds were selected for this study. The speakers were aged between 33-42 years old (mean = 38.8, SD = 4.06) and were born and permanently reside in Trnava, Slovakia. These participants had never resided in English-speaking countries, though some said they visited the UK (primarily Cambridge and Oxford) annually for periods of up to two weeks, with the purpose of their visits being to improve skills in EFL instruction. The families of these participants were also from Trnava. All learners achieved C1 fluency, commonly referred to as “Effective Operational Proficiency” (CEFR online⁵), which they obtained through Master of Arts degrees in English or language certificates of C1 proficiency approved by Ministry of Education in Slovakia. Although the participants studied English as a foreign language, the majority of the participants spoke with ease about their language use, language learning, and future goals abroad. A total of six native Slovak participants of similar ages, social background, and levels of education were selected due to the high quality of their recordings (e.g. clarity, a lack of ambient noise, or a lack of clipping in their recordings).

⁵ CEFR (Common European Framework of Reference for European Languages: Learning, Teaching, Assessment), accessed in <https://www.coe.int/en/web/common-european-framework-reference-languages/>

Several studies (e.g. Gadušová and Hartanská, 2002; Thomas, 1999; Stanling, 2008; Reid, 2009) examined foreign language instruction in schools and institutions in Eastern Europe, with particular focus on the acquisition of Received Pronunciation (RP) phonetic variants as ideal examples. Slovak learners of English have the option to study English in Slovakia from a variety of English and Slovak instructors and methods, for example at university, private tutors, work courses, and language courses. All English-speaking instructors I met in Trnava were required to teach students the RP pronunciation modelled in language instruction textbooks published by the Oxford University Press and Cambridge University Press (Stanling, 2008). See subchapter 2.3 in the Introduction for a more thorough overview of contemporary standards in English language instruction, as well as evaluations of historical educational methods during most immigrant participants' lifetimes.

Books published by Cambridge University Press and Oxford University Press companies formed the backbone of instruction at every language institution I visited, and exercise books were supplemented with samples of the speech of native English speakers via audio exercises on CD and DVD. These two publishing companies also appeared to be the source of English language tests and certificates of English proficiency in Slovakia (discussion with English language instructors and students in language courses and universities). Less formally, students in Trnava also have access to English-language entertainment, from English songs on radio, to English-language films (with Slovak subtitles), and television programmes from English channels (e.g. BBC, CNN). However, the majority of Slovak residents admitted in their interview the lack of time spent watching movies in the original language due to differing degrees of understanding and variety of English accents presented in media. Instead, their main source of learning came from face-to-face meetings with instructors and English textbooks, such as upper-intermediate or advanced *face2face*,

Headway, or English Unlimited. See section 2.3.3 for more detailed observations of English instruction in Trnava.

3.4 Self-reported questions on background

Section 2.12.2 of the Introduction outlines some of the most common factors explored in immigration and SLA research. While these factors are used in the present study's analysis as well, additional factors are also included to fully explore participants' speech production and language attitudes. During a questionnaire at the start of the task, participants were asked to report their own personal background on a range of topics that would be used as independent variables throughout the remainder of the study. The following sections outline these additional variables and their justification for their use as demonstrated in previous research.

3.4.1 Accent aim

Self-reported accent aim study was first used as a factor by Rindal (2010) and was further discussed in her follow up studies (2014, 2015). At its core, accent aim is a self-assessed and typically overt measure of preference: in Rindal's studies, the participants are asked to discuss their accent aim using a questionnaire item about their accent preferences, i.e. "Which accent/pronunciation are you aiming at when you speak English?" In her paper, Rindal (2015, p. 245) offered several alternatives which defined and labelled informal conversations from the students of the same ages (e.g. *British* [referring to SSBE], *American*, *Norwegian*, *neutral*, *other*, *I don't care*). In the present study, accent aim choices were somewhat more limited, with *Scottish* (i.e. SSE or other Scottish variant), *English* (i.e. SSBE), and a write-in *Other* option. The main aim of this methodology is to (qualitatively)

understand how L2 learners tend to refer to their L2 accent in terms of their integrativeness, and whether they try to consciously mimic their locals' competence by focusing to acquire the local features (Rindal, 2015). Their acknowledgement is then analysed as a factor against guise evaluations and speech production.

As an extension to immigrants' self-assessed accent aim, in the present study immigrants were also asked to self-assess their own Scottish English accent (SCOTACCENT) – that is, to provide a value from 0 to 100 that represents how “Scottish” is their current accent. While the question was phrased in a manner that encouraged participants to think about their own manner of speaking, the variable did not actually assess speech. The self-reported nature of the variable - and the fact that all participants were non-linguists - meant that the SCOTACCENT variable actually assessed participants' perception of and preferences for their accent, which should align with their self-reported accent aim.

3.4.2 Decision to remain in Scotland

The question asking whether immigrants had decided to reside indefinitely in Scotland was chosen to establish whether correlation exists between participants' intentions to return to Slovakia (or not) and their attitudes and accent acquisition. Drummond (2012) found that Polish immigrants in Manchester tended to produce more vernacular features [ɪŋ] if they planned to stay in their target country, as opposed to those who aimed to return back to Poland, who produced the L1-influenced variant [ɪŋk]. Drummond measured participants' decision to remain through a direct question with three categorical responses, *Return to Poland*, *Stay in UK*, and *No plans*, though Drummond found that participants who selected either *Stay in UK* or *No plans* exhibited similar trends in pronunciation (p 123). The present study reduced the number of choices to *Remain in Scotland* or *Return to Slovakia*. Some

participants chose to write in their own version of *No plans*, and after justifying their choices during discussions their responses were accepted for analysis.

3.4.3 English use at home, at work, and with friends

For immigrant participants, these variables provided a means of recording English use in different personal and professional contexts, where each context (i.e. at home, at work, and with friends) was its own variable. As independent factors, self-reported measurements of English use assessed whether frequent English use in different social circles were associated with immigrants' speech productions or language attitudes. These variables were inspired by Drummond (2010), who assessed Polish immigrants' English and Polish language use at home, at work, and with friends. Not surprisingly, he found that the increase of Polish use at work led to immigrants' decreased use of the local STRUT variant in Manchester. He argued that more proficient speakers could potentially produce local variants they hear, but they can also consciously choose to avoid acquiring the local variant.

3.4.4 English language proficiency

Measures of language proficiency are frequently used as metrics for language acquisition, though the need for two metrics - L2 speakers' language proficiency at the time of testing, and their proficiency at the time of their immigration - is becoming clear. Drummond (2010), for example, observed the surprising result that length of residence (LOR) appeared to have low correlation with immigrants' language acquisition, as all participants in the study were highly proficient in their L2 regardless of their LOR. However, Drummond analysed language proficiency on arrival against proficiency at the time of the interview, and the results suggested that in terms of proficiency, "the effect [of LOR] is masked by recently arrived

high-level speakers (i.e. high proficiency and low LOR)” (p. 144). Although immigrants’ proficiency may not improve with their stay in the country, he also admitted that it is highly likely that their improvement will happen, and that the effect would be evident after taking into consideration pre-immigration proficiency.

Determining language proficiency for research purposes does not require test scores or ad-hoc examinations, and recent sociolinguistic research has relied on self-assessments from the participants themselves. Recent work by Debaene and Harris (2013), for example, allowed immigrant Polish participants to assess their own proficiency levels of English of Polish immigrants before arriving in Ireland. Although the participants tended to self-assess as lower to upper intermediate levels, many reported that their proficiency and their way of speaking has changed since they first arrived to Ireland. These participants emphasised that the Englishes they experienced while studying in their home country were entirely different from the language that they were exposed to when they arrived to Ireland. As a linguistic variable, proficiency served as a starting point to assess language acquisition, but even highly proficient participants saw the need to acquire new English varieties after immigration. Debaene and Harris demonstrated that language proficiency alone is insufficient to explain language performance and integration after immigration.

The present study assessed two groups of Slovak English language learners (ELLs), and English proficiency to high or high-intermediate levels were required for participants in either group. Like Debaene and Harris’s (2013) study, self-assessments were used to determine participants’ English language proficiency, although in the present study their professions and background were taken into consideration as further evidence. The Slovak ELLs residing in Slovakia had all undergone extensive English language instruction or had university degrees in English. Immigrant participants in the study had all resided in Scotland

for at least five years at time of testing, and most were employed in customer-facing roles in Edinburgh. These aspects of Slovak ELLs' backgrounds justified their self-assessed proficiency levels at the time of testing, and in the interest of saving time during data collection their self-assessments of language proficiency at time of immigration were also taken at face value (*ibid.*).

3.5 Data collection: Study design

Meetings to collect data from Slovak immigrant and Scottish participants were arranged at quiet places on the premises of the University of Edinburgh or at the participants' homes. In Trnava, meetings were held in quiet rooms on the premises of the University of St. Cyril and Methodius, at local institutions of English language learning, or at participants' homes. In each case, the participant's preference of location was the most important factor for ensuring their comfort to obtain the data. Regardless of the selected place, it was important that participants felt relaxed and regarded me as a fellow immigrant with whom they could be comfortable for the duration of the testing session.

To mitigate the effects of the observer's paradox (Labov, 1972) I engaged in small talk before each session, and often started our conversation talking about my own migration experiences. In this way I was able to relate to similar problems that the participants faced. This discussion helped ease any stress that the questionnaire might have induced (Regan *et al.*, 2009). Thanks to a common background, language, and migrant situation, the participants were eager to describe their experiences with migrating and local accent acquisition. However, communications were English-only at the researcher's request, even if participants began speaking Slovak during introductions. All interviews were held in English as much as possible, including pre-interview introductions and icebreakers. When

recruiting participants I informed them that the sessions would be in English only, and by using exclusively English myself during the sessions I was able to discourage code-switching without making the situation socially awkward. All correspondence with participants relating to scheduling and logistics were also in English. All interviews were conducted in a format meant to elicit formal and informal aspects of speech (Labov, 1984). Data collection for native Slovak participants in Trnava, Slovakia, were held between 15 October until 01 December 2014; for immigrant Slovak and native Scottish English participants in Edinburgh, Scotland, between 12 September 2015 until 24 February 2016.

Each participant's data was collected in one sitting. The data from Slovak participants in Slovakia were obtained using the three tasks: questionnaire, reading and wordlist; the remaining two participant groups were given a series of six tasks, which measured identity, language attitudes, and vowel realisations:

- Questions on social background, personal preferences, and language choices (henceforth, Identity) (e.g. Llamas and Watt, 2014)
- Interview (e.g. Drummond, 2010, Redinger and Llamas, 2014)
- Reading passage (Sharma and Sankaran, 2011)
- Wordlist (Drummond, 2010)
- Task testing knowledge and use of word of local origin (KUWLO, Löw-Wiebach, 2005)
- Verbal Guise task (Ladegaard and Sachdev, 2006; Clark and Schleef, 2010)

The three production tasks were essential for measuring participants' vowel productions across different speech styles, so the tasks were included for all participants. However,

native Slovak participants were not given the identity, verbal guise, or vocabulary tasks, having insufficient exposure to Scottish culture to provide relevant data.

In order to avoid any potential equipment hazards during the fieldwork, the data were recorded using two digital audio recorders (see Hall-Lew and Plichta, 2013). The first was a Marantz PMD661MK2 (44.1 kHz sampling rate, 24 bits precision) with a head-mounted microphone. The second audio recorder was a Tascam DR-07MKII (48 kHz sampling rate, 24 bits precision), which was placed unobtrusively close to the participant. Both audio recorders were used during the home and school fieldwork for all participants to ensure no technical difficulties during the recording. By default the Marantz recorder was used for speech processing due to its microphone attachment, which collected higher-quality speech recordings than the built-in microphones on the Tascam unit. Recordings were saved as .wav files on an 8GB SD memory card and later transferred into a Macbook Pro laptop and stored in two external hard drives.

3.5.1 Ethical considerations

A high degree of anonymity was very important to preserve and protect the identity of the speakers (Soukup, 2009), as they were providing many personal details and most participants were less willing to contribute unless their recordings and data were kept anonymous. However, unlike Soukup, who used formality and distance to remain impersonal while engaging with her participants, fieldwork in Edinburgh and Trnava required a friendly, personal and informal approach when engaging with and observing immigrants. Since the time of the tasks was not limited, participants were free to discuss individual aspects of stimuli. Due to its length, participants were compensated £20 (€20 in Trnava) for their time and effort.

The study location in Trnava, Slovakia, also constituted an important factor for my study. Since Trnava is my home town, it offered the advantage that I was familiar with local people, places and linguistic habits; and my network connections provided invaluable to the success of this study. Bilingual participants were approached directly from personal recommendations, using a similar friend-of-friend approach developed from during the pilot study. I also addressed a local university and obtained permission from the university's English language professor to interview her final-year graduate students. These students were aged of 18 and older, as were all other participants in the study, so there was no need to request for specific ethics approval in working with children.

Finally, before beginning the actual tasks, each participant was given a series of forms to sign indicating their agreement to participate in the tasks (Appendices A1-A2), followed by a debriefing form at the end of the session (Appendix A3). The initial forms were short documents written in accordance with University guidelines: a brief overview of the purpose of the study, an agreement to keep personal details confidential, and a place for participants to sign indicating their consent to be recorded for the task. The debriefing form provided additional details about the purpose of the study, and offered contact details in the event than any of the participants wished to get in touch.

3.5.2 Challenges and difficulties

For the current study, it was necessary that the participants felt comfortable to answered all the questions in the survey without much difficulty. Unlike the immigrants in Edinburgh, participants obtained through the local university in Trnava appeared to be more conscious of my presence, perhaps due to our mutual differences in age and academic standing. The nature of the interview was rather formal, impersonal, and distanced, just as

Soukup (2009) described in her study. During recruitment and testing the participants were particularly conscious of data security, and the vast majority stressed that they wanted their data placed under the utmost anonymity of this study. During the pilot study it was also apparent that participants wanted to keep each session as short as possible, at least in repetitive tasks such as the wordlist. All participants found the stimuli interesting throughout the session - this was particularly evident with Slovak participants in Slovakia who had degrees or certificates in teaching English as a foreign language (TEFL). One of the main challenges of this fieldwork was difficulty telling my participants about the details of my research design, i.e. vowel production and acquisition of local accent features. It was necessary to preserve a certain naïve perspective on bilingual participants living in Slovakia, who as previously stated were largely unaware of Scottish English, so that they would not pay overly close attention to their own speech. Therefore, when asked about the details of the study, participants were only informed about examining cultural habits and differences in living between Slovakia and other countries.

Another challenge that I found was the place of meeting. Since each recorded session required a quiet place that also had a power source for the recording equipment, selecting a reliable place to undertake the study required careful consideration. Initial participants in Slovakia insisted on meeting in public places, such as cafes or nearby local parks, but excessive ambient noise rendered the recordings indecipherable – which was the primary reason why so many of these interviews were dropped from the main study. Later participants were interviewed on the premises of a local university, and were acquired with the condition that they consent to meet in a reserved room at the university. Otherwise, I interviewed participants at their homes, provided that they could offer a quiet place to carry

out the recording. This approach proved successful in Slovakia, so it was adapted for approaching and recruiting participants in Edinburgh.

In Edinburgh, one of the main challenges this study faced was finding and interviewing local female Edinburgh Scottish native speakers who fit the participant briefing. Although I hoped to utilise friends of the immigrant participants who had taken part in the study, most of these participants initially offered contacts who were immigrants themselves. Although the majority of the immigrants stressed the importance of engaging with their local (native Edinburgh) speakers, some appeared reluctant to offer me their local native Edinburgh contacts, or otherwise offered potential participants who did not match the necessary participant profile. Eight participants who matched the profile were finally recruited for this study, six of whom were direct friends of immigrants, and the remaining two were friends of those six Scottish participants. Scottish locals found some interview questions concerning, and in some cases they were somewhat hesitant to provide their opinions about foreigners in the country. This is perhaps the most evident effect of the observer's paradox, where being a foreigner myself I may have prevented locals from offering their opinions in full (Labov, 1972; Soukup, 2009). A possible solution considered was to post written questionnaires to Scottish participants while disguising my name, which may have increased the likelihood that Scottish respondents would have been completely frank about their opinions of foreigners in the country. However, the written questionnaire would negate the second purpose of the questionnaire, i.e. collecting pronunciation data from spontaneous speech, so the written questionnaire would ultimately lengthen the data collection period as spontaneous speech was a key element in the present study design. Given constraints on time and funding, the choice was made to deliver the questionnaire in a personal interview, as with the immigrant Slovak participant group.

Chapter 4: Identity

4.1 Introduction

This chapter examines the portion of the study dedicated to measuring participants' identity. Methodologies used for quantitative identity measurements are explored in subchapters 4.2, with quantitative results presented in subchapter 4.3. Qualitative analysis of identity is also performed, with results presented in subchapters 4.4 and 4.5. Subchapter 4.6 discuss these results, outlining how the results are relevant to the research questions and discussing the significance of a multi-cultural identity.

4.2 Identity: Methods

Language attitude and identity data was collected from the questionnaire via the participants' responses on the following sections:

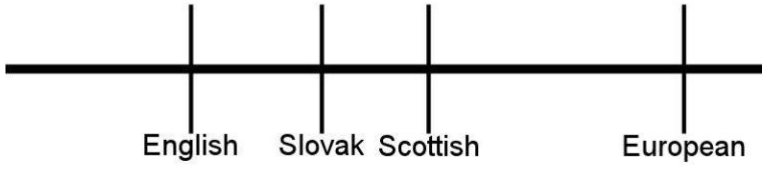

- Personal and language background information: language background excluded for native Scottish participants
- Identity
- Attitude statements

The current chapter is focused on participants' responses to the first two parts of the questionnaire, the personal background and identity sections. The first section of the questionnaire covered personal background information such as each participant's age, general information about the participant's family, and occupation. This background section was shortened for native Slovak participants, eliminating questions on citizenship and children. As the most "direct" section to the interview, this was meant to generate discussion as well as to acclimatise the participants to the task before beginning more in-

depth queries. The language attitudes data from this section were used as independent variables in later analysis. All participants read each question or statement aloud as they were recorded, though only their responses were used to generate production data. The questionnaire also covered English language use and instruction, both before and after immigration (where applicable). This section was eliminated for the native Scottish participants, given their native status. The language background section was also modified for the native Slovak participants, and enquired about English learning materials and preferences in addition to the amount of time spent using English at school and home.

The first part of the questionnaire given exclusively to the two participant groups in Edinburgh enquired about participants' self-identification. Using a Relational Analogue Scale (Llamas and Watt, 2014), participants were to pinpoint where they saw themselves in terms of their identity along a horizontal line (Figure 4.1). In this task, participants placed vertical ticks on the line, one representing each identity, and labelled each mark accordingly. Marks placed closer to the right-hand end of the line indicated participants' closer association with that identity, and marks placed on the left half of the line indicated identities that were less associated or less "important" for the respondents. For immigrant Slovak participants, four identity options were given: Slovak, English, Scottish, European; for native Scottish participants, English, Scottish, and European. The present study does not include *British* label as an identity choice given close associations between *British* and *English* terms that are not present with other devolved countries, e.g. between *British* and *Scottish* (Barnett, 1997, as cited in Bechhofer & McCrone, 2010).

Figure 4.1: Self-reported identity instrument for Slovak immigrants

<p>Below is a line that represents your self-image: who you are, based on your interests and background. Place along this line the words below, depending on how important these words are to you. Place each word with a mark on the line, and label each mark accordingly.</p>		
<p>For example,</p>		
<p>Least Important</p>		<p>Most Important</p>
<p>Please use the words provided below.</p>		
<p>Scottish</p>	<p>I am:</p>	<p>Slovak</p>
<p>Least Important</p>	<p>English European</p>	<p>Most Important</p>
		

4.2.1 Identity data coding and analysis

The first part of the questionnaire consisted of essential questions outlining participants' background and self-assessments dealing with their own perceived identity and related attitudes. Most of these questions involved direct answers (e.g. occupation) or multiple-choice responses (e.g. years of English language instruction), and data for these questions were input manually. The self-assessed identity question deviates from this norm with a Relational Analogue Scale (Llamas and Watt, 2014), which had immigrant Slovak and native Scottish participants place a series of marks on a 10cm line indicating their preference for that identity.

Following the principles of Llamas and Watt's (2014) and Redinger's (2010) identity measurement methodologies, the individual responses were measured using a free digital image processing program, *ImageJ*, to process high-resolution (200ppi) images received

from an Epson scanner. The purpose of this program was to measure digital scans of the magnitude scale lengths in the questionnaires, which could be otherwise done with manual measurement tools. Although using a manual ruler would have been a simpler option, electronic line measurement allowed for easy replication by identifying the program and its visual resolution. The 10cm lines were divided into units of 100, and ticks were rounded to the nearest unit (i.e. 1mm = 1 unit of measurement). Since scores ranged from 0 to 100, individual and mean scores are reported as percentages – where percentages indicate a measure on the scale (e.g. 50% = 50/100).

4.3 Results: Quantitative Identity

4.3.1 Measurement of identity

For the present study, participants placed ticks on the scale indicating varying levels of importance for labels *Scottish*, *English*, *European*, and, for the immigrant group, the additional label *Slovak*. The left side of the scale was labelled *Least important*, and the right side of the scale was *Most important*. These marks on the identity scale meant that the participants evaluated simultaneously which identity they associate with the most and which the least.

The choice to refrain from including British as a label stems from close associations between *British* and *English* labels that do not appear to be present between *British* and labels for other devolved countries in the UK. Bechhofer & McCrone (2010) performed extensive analysis of cultural associations between identity labels in the UK, citing earlier work claiming that classical definitions “often fail to understand how the two [English and British] can be contrasted at all,” to the point that “Englishness and Britishness seem inseparable” (Barnett, 1997, as cited in Bechhofer & McCrone, 2010). They found that

Scottish natives were more likely to self-identify as *Scottish* than *British*, even while residing in England. English natives living in England, in contrast, were equally likely to self-identify as *English* or *British*, while English native living in other UK countries were more likely to identify as *British*. Later work by McCrone & Bechhover (2015) re-visited this topic, this time using free-choice questionnaires that permit participants to associate with multiple identities. Using this tool, a greater proportion of all participants indicated association with the British identity, although “more than two-thirds” of the English sample self-identified as British compared to only half of the Scottish sample (p. 171). The evident and consistent links between *English* and *British* identities complicates the use of *British* as an option for identity in the present study. The decision to include *English* and not *British* as identity choices was made to avoid having two identity choices in the task that were strongly associated with England and English culture.

4.3.2 Group-level results

For initial overall analysis, a one-sample *t*-test confirmed that scores for each identity within the whole participant sample were significantly different from each other ($p < .001$).

Independent-samples *t*-tests were then used to evaluate differences between participant groups, where significant results indicated that the tested variable had a strong effect on the data (Laerd Statistics, 2015). Comparisons between the participant groups

demonstrated significant between-groups differences for the self-reported SCOTTISH ID ($t(20.8) = 7.20, p < .001$) and EUROPEAN ID ($t(26) = 2.11, p = .045$). There was no statistical

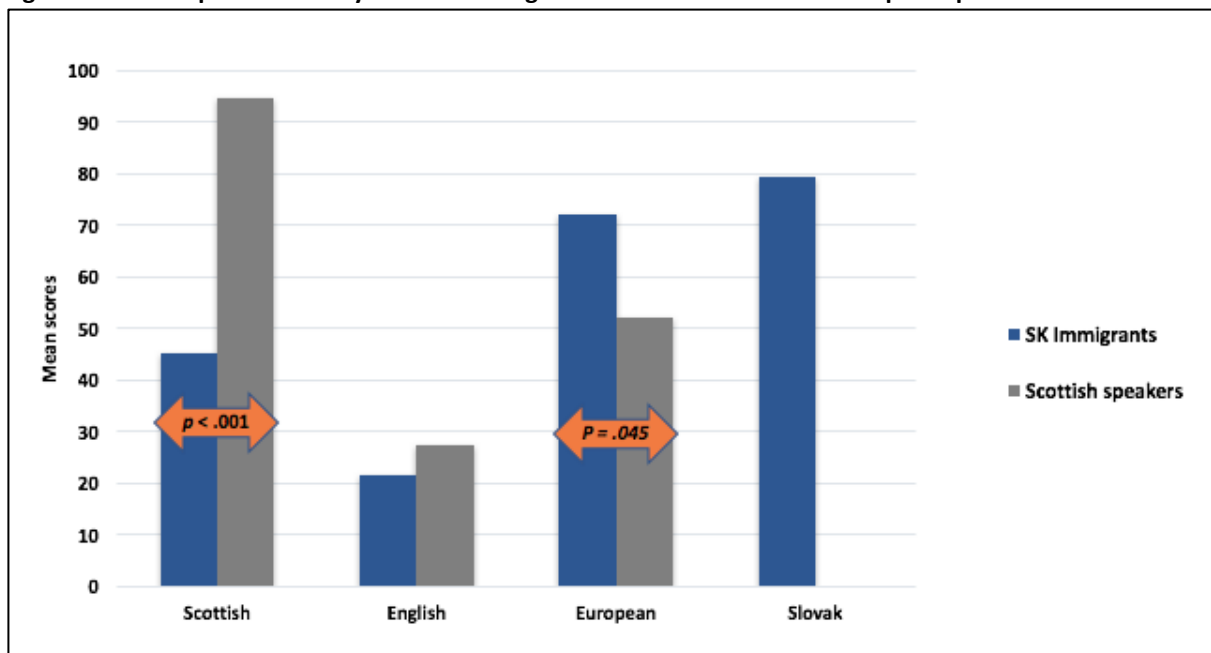
difference for ENGLISH ID between both language groups, and SLOVAK ID was for the immigrant group only. Figure 4.2 shows the self-reported identity for both language groups.

From the mean scores it is evident that Slovak immigrants prefer to self-identify primarily as

European (72%) and Slovak (79%). The Scottish participants approached a ceiling effect when identifying themselves with the Scottish identity (95%).

It must be noted that the scores for identity were not transformed in any way to account for potential skewness. The reasons for taking self-reported identity scores at face value are twofold: the scores are independent variables, not dependent variables such as the Verbal Guise Task results or speech productions; and the number of data points for self-recorded identity was drastically lower than for either dependent variable, making skewness and z-score calculations difficult to perform and interpret. As a result, skewness was not considered for self-reported identity scores despite some trends where participant groups repeatedly gave high (or low) scores to given identities.

Figure 4.2: Self-reported identity for both immigrant Slovak and native Scottish participants.



4.4 Qualitative analysis: Identity

Supplementing the self-reported data available from the questionnaire, qualitative data was obtained while participants answered the questionnaire and the attitude statements (discussed in subchapter 5.5). This conversation with participants helped them to become more relaxed when answering the questions, but it also enabled them to elaborate and provide perspectives on the topic that would not have been available via quantitative data alone. The Attitudinal Relational Scale for self-reported identity (see subchapter 4.2) was a particularly relevant example, as the scale prompted questions from participants regarding their interpretation of both the scale and the ticks they placed on the scale. Given the intertwining nature of participants' comments and scores, in the following sections excerpts from the interview are presented alongside each respective participant's identity scores. Each score's range was from 0-100, and each participant's name was a pseudonym drawn from common female names for each nationality (i.e. Slovakia and Scotland).

4.4.1 Attachment to Slovakia

Part of the interest behind immigration studies is the examination of whether immigrants retain connections to their home countries. This attachment was evident from participants' comments and identity scores. Some participants were highly attached to their Slovak culture and heritage, as evidenced by Kristína's comments:

Excerpt 4.1: Interview on 16 Nov 2015

Kristína

LOR: 13 years	I am a really, really proud Slovak. I don't like when people mix up when they hear me first and then judge you straight away like, 'Oh you're from...XYZ!', No-no-no-no, I am not from there, I am from Slovakia! And, I am not from where the Prague is, I am from where the Bratislava is! Lately, I am very proud to be Scottish a little bit, I have to say!
Scot: 68	
Eng: 38	
Eur: 71	
SK: 90	

Participant Kristína made it especially evident that she considered herself primarily Slovak. Her identity scores appeared to reflect this opinion, with very high SLOVAK ID scores, followed by near-equal EUROPEAN ID and SCOTTISH ID scores. Despite her subsequent admission of attachment to SCOTTISH ID, Kristína's comments and identity scores suggest strong connections to Slovakia.

Participant Michaela explained in her interview that she identified as neither Scottish nor English, although both languages and cultures had value to her. Instead, she favoured attachment to Slovakia as an expression of her nationality:

Excerpt 4.2: Interview on 13 Nov 2015

Michaela

LOR: 5.5 years	Many people admire me to come here [to Edinburgh], get the education, find the job, but I still feel proud of who I am. I still feel European, because I know that I can travel within Europe and it feels like home, but it never feels like home. That's why Slovak [identity] is the most important for me.
Scot: 10	
Eng: 18	
Eur: 70	
SK: 92	

Both Michaela and Kristína were examples of very high attachment to Slovak culture, often at the expense of integration with their host country. However, while many immigrant participants felt a connection with their heritage this level of attachment was not common. Most felt connections to their host country as well as their home country, and this led to the creation of multi-layered cultural identities.

4.4.2 Complex cultural identities

In some cases, Slovak immigrants found themselves somewhat undecided about settling on specific ratings: they expressed feelings that they were at times at a “middle” point between two worlds. The excerpt below exemplified these conflicting feelings:

Excerpt 4.3: Interview on 01 Dec 2015

Júlia

LOR: 9 years

Scot: 60

Eng: 1

Eur: 23

SK: 32

When [an]other country becomes your home...you really lose big part of your old identity, so now I don't really feel Slovakian and neither fully Scottish!

Júlia's comment suggested a need to adjust to her host country, though in her case her identity scores were generally low for all identities. In effect, she claimed a NOT-SCOTTISH ID and NOT-SLOVAK ID, instead of positive association with a particular identity. Nonetheless, comments and identity scores for the participant therefore suggests a new transnational identity that appeared to replace any strong connections to Slovakia.

Júlia's favouring SCOTTISH ID over ENGLISH ID was not uncommon among immigrant Slovak participants, even though many of these participants appeared to be aiming more for the SSBE variety in their pronunciations. Most tended to consider Scotland their home – or, at the very least, they were aware of distinctions that are primarily accessible only to local residents, as demonstrated by Stela:

Excerpt 4.4: Interview on 15 Oct 2015

Stela

LOR: 10 years

Scot: 32 Everybody from Slovakia thinks of UK as England, everybody says: 'Oh, you go back to

Eng: 10 England!' And I say, 'No! I live in Scotland!'

Eur: 86

SK: 90

This type of regional and cultural awareness was shared by many other participants in the study.

4.4.3 European identity

Despite cultural differences and adherence to Scottish over English cultural values, most participants still chose to give higher scores for EUROPEAN ID than SCOTTISH ID. The EUROPEAN ID option on the Relational Analogue Scale (Llamas and Watt, 2014) stems from the pilot study: the option was included after pilot participants were eager to discuss their thoughts on what it means to have a European identity, as separate from both Slovak and British identities. The accession of member states from central Europe to the EEA in 2004 led to a relatively recent increase in travel and immigration across the continent, so this identity choice appeared to be an essential aspect to include in the current study. By giving themselves high EUROPEAN ID scores, participants highlighted the importance between what it means to live abroad and the connection to their home countries, given the ease of travel and relative proximity of the UK to Slovakia and central Europe. Testing with immigrant Slovak participants was performed between September and December 2015, less than a year before the Brexit referendum on 23 June 2016.

Lenka demonstrated evidence of a separate European identity as she elaborated on her identity as separate from SLOVAK ID or SCOTTISH ID:

Excerpt 4.5: Interview on 08 Dec 2015

Lenka	Living here I mostly feel myself as European, because although I am from Slovakia, now
LOR: 13 years	it seems to me not as important as being from the continental Europe. I've been
Scot: 59	influenced by also other countries living around, so now Slovakia doesn't seem to me
Eng: 13	as important as being part of the Central European community, travelling around and
Eur: 91	being influenced by cultures and TV. That's how I feel the difference between [being]
SK: 79	British and European, and I identify myself more European rather than British.

The development of an international European identity was common among the long-term Slovak immigrants included in this study. For some, the development of this identity meant decreased focus on their individual nationalities. For example, Marta valued being European as a very important aspect in her life, and certainly more important than her Slovak nationality, and this was reflected in both her comments and her scores:

Excerpt 4.6: Interview on 13 Oct 2015

Marta	The most important is the European [identity], because I see myself as European. I am
LOR: 11 years	not... I don't see myself strong as Slovak citizen or Slovak person, the Slovak nationality
Scot: 85	is not important for me, just came from... my parents are Slovak, my family are Slovak,
Eng: 11	most of my family are in Slovakia, but my identity is NOT Slovak! I can't see myself...
Eur: 100	that the mentality, the kind of problems people have in Slovakia [...] with the
SK: 70	corruption, the problems they have, I just don't understand how the things like that are
	actually... how it's possible that the things like that are happening, and they can't deal
	with them in a nice civilised way.

As is evident from her high *Scottish identity* score, Marta appeared to be ambivalent toward being viewed as “Scottish” by her peers. When she was asked whether she felt Scottish in any way, her answer did not embrace a Scottish identity but it also did not reject a Scottish identity in the same way she rejected the Slovak identity. However, in the following statement she re-affirmed her identity as European first and foremost:

Excerpt 4.7: Interview on 13 Oct 2015

Marta	I like the way the Scottish people deal with people. I don't say British or English,
LOR: 11 years	because I'm kind of in touch with what's going on in Edinburgh and in Scotland, and I
Scot: 85	like the way they think, they deal with things, so that's where I see that it's close to
Eng: 11	how I would deal with it, which is why I see myself more of a Scottish [...] nationality or
Eur: 100	identity than the Slovak, and European that's because I've never been a Slovak
SK: 70	nationalist. I see myself as a person living in Europe and it doesn't really matter where
	you were born or what nationality your parents happen to be, they are European.

Participant Laura also found that being European was a very important aspect of her identity, though unlike Marta she found herself drawn more to a more pro-Slovakia secondary identity. Throughout the interview she made note that she valued her birth place, her family, and the time she had spent with her family. Despite having made Edinburgh her home for over five years, her identity scores as well as her comments apparently rejected a Scottish identity:

Excerpt 4.8: Interview on 18 Nov 2015

Laura	It's just a different culture, and although I'm here I am still an immigrant, it's not that I
LOR: 5.5 years	haven't assimilated, or that people aren't accepting me, it's just I don't think that I will
Scot: 1	ever feel Scottish because I moved here and I was already older so... I don't pick up
Eng: 0	stuff easily from other cultures anymore, so maybe that's why Scottish [identity] is
Eur: 91	even less [important] than English.
SK: 86	

The difference between this attitude and Marta's pro-Scotland attitude was clear, as was the difference in their respective lengths of residence. Marta had lived in Scotland for more than twice as many years as Laura, so Marta's ambivalence towards a Scottish identity may have developed with time. However, both Marta and Laura demonstrated a recurring theme with many participants: a multi-cultural European identity was more important to them than any single nationality, due to strong connections with both Scotland and Slovakia.

While Marta and Laura based their attitudes on sentiment, participant Zora took a more practical approach to her self-identification, explaining that her European identity had its origins in her being able to see her family easily while living in a different country:

Excerpt 4.9: Interview on 22 Oct 2015

Zora

LOR: 5.5 years I feel European quite a lot, because it's amazing how we can travel in Europe and you
Scot: 24 can see so much stuff, and there're cheap flights, people are almost the same
Eng: 0 everywhere so I feel that Europe is kinda like US in a way... and I feel a bit Scottish, kind
Eur: 71 of, because I've been here for 5 years, if I didn't like it at all, I wouldn't be here!
SK: 96 [laughs]

Participant Vilma explained that being European was the most important aspect of her identity, but again this importance was due to rather practical reasons. Like Zora, she valued the ability to travel and be part of different cultures:

Excerpt 4.10: Interview on 30 Oct 2015

Vilma

LOR: 5 years
Scot: 50 I think now the world is really small so, I see myself rather European, because I can go
Eng: 23 anywhere I want, hopefully for a while, still.
Eur: 83
SK: 67

Aside from travel, Vilma also cited the pervasiveness of English as an inter-cultural language as a second practical reason for maintaining a largely European identity. By learning the English language and being immersed in English-speaking culture, she could use her English language skills to assist travel without having to learn other European languages. English, therefore, becomes not just a gateway to the UK, but to all of Europe.

Vilma found Slovak to have less multi-purpose use, so in terms of practicality English was more “useful” to a European identity:

Excerpt 4.11: Interview on 30 Oct 2015

Vilma	Everywhere I would speak English since I don't know other languages fluently, so I see myself as European... and Slovak pretty much equally, but I couldn't really use [Slovak]
LOR: 5 years	language [...], and Scottish, it's sort of half way because I live in Scotland so I
Scot: 50	understand the culture, understand the history, I see myself in a way becoming
Eng: 23	Scottish because I live and I talk to people and I have friends who are from here, and
Eur: 83	English, just because of the language, but I don't really go to England, so it would be
SK: 67	probably least important [part of my identity].

4.4.4 Summary of responses

As is evident by the participants' excerpts, immigrant participants' identities were extremely complex as even the simplest answers had layers of justification to them. In this sample of immigrant Slovak participants, many felt predominantly European, which in their eyes meant a middle point between the two countries and cultures that dominate their lives. However, connections to their Slovak nationality clearly formed important parts of their overall identities, and only in rare cases (e.g. Marta) were these connections refused outright. This heritage was an extremely important part in other participants' identities, and some (e.g. Kristína, Laura) used it to resist integration into Scottish culture despite having lived in Scotland for years. This result corresponds to Norton's (2013) study who also found that immigrant women tried to create multicultural identities which embraced their host country while they preserved links to their home countries. Still others viewed “identity” in purely practical terms, weighing the consequences of adopting different identities and choosing what best benefits their situation. These findings may suggest that immigrants' identities shift to form bi- or multi-cultural identities, accommodating both their nationality and their present environment. What's more, the immigrants in this study appeared fully

aware of the multi-layered interactions between cultures and nationalities behind their identities.

Despite the differences between individual participants, common elements revolved around the recognising of immigrants' own transnational identities. All immigrants in the study were highly aware of British cultural differences, including their contrasts with Slovak culture, just as they were aware of the fact that they did not "fit" into any one national identity. Block (2006) suggested that this 'non-fitting' might be the result of the fact that migrants live in London, a global city with a large international population. The presence of such a population may have helped some immigrant participants feel integrated with the city and their local communities, if not Scottish culture as a whole.

Having evaluated immigrant participants' qualitative statements, the following subchapter will examine their identity choice and accent aim from a quantitative perspective.

4.5 Qualitative identity results: Accent aim

As the present study makes language a particular focus as an element shaping identity, it was necessary to further explore participants' accent choice and to learn why they chose to pursue their pronunciation. Much of this discussion occurred while participants were completing the Relational Analogue Scale (Llamas and Watt, 2014) in the interview, so conversation at this time used scores from the scale to both direct the focus and encourage elaboration on which accent varieties (i.e. SSBE, Scottish English, Slovak-accented English) had an impact on immigrants' self-reported identity scores. However, the questionnaire as a whole was constructed to measure participants' opinions about their accent choices. In line with the previous research where the Southern Standard British English (SSBE) appeared to

have both higher status and higher prestige than ‘non-standard’ English varieties (e.g. Ladegaard and Sachdev, 2006; McKenzie, 2010; Rindal, 2010), this study explored the reasoning behind Slovak immigrants’ accent choice of the SSBE-like variety as opposed to the accents present in their Scottish local community. The actual choices available for accent aim included *English*, *Scottish*, or *Other*. The choice to use *English* instead of *British* stems from results in the pilot study, where immigrant participants tended to associate *British* accents with SSBE, despite the fact that *British* applies to all countries in the UK. Rindal (2015) found similar associations among immigrants, most of whom indicated that “British” varieties meant SSBE in particular. With long-term immigrants, the choice was made to switch the SSBE indicator of accent aim to *English*, in the event that *British* caused confusion or ambiguity among immigrants who were more familiar with geographical and cultural terminology of the United Kingdom.

Regarding the SSBE accent variety, Slovak immigrant participant Vilma explained the reasons why she aimed to speak with an SSBE accent instead of a local Scottish accent:

Excerpt 4.1: Interview on 30 Oct 2015

Vilma I don't think that I can imitate Scottish, it would just sound so strange... Oh, I cannot
LOR: 5 years imitate English, but my speech probably naturally sounds more English rather than Scottish. I would like it to be English rather than Scottish, [laughs], I think it sounds a little bit nicer, I am sorry! [laughs]

When asked why she perceived the (Southern Standard British) English accent important to her, she answered:

Excerpt 4.12: Interview on 30 Oct 2015

Vilma I think it's in movies and in general, when you talk to people. It just sounds more
LOR: 5 years natural than Scottish, English people sometimes have a problem with Scottish accent and even when you even talk to somebody from outside of the UK, and people start with a Scottish accent, they have a problem. Rather than with English, they understand more than in Scottish...

When pressed, Vilma elaborated further about her accent aim:

Excerpt 4.13: Interview on 30 Oct 2015

Vilma I think that I would just look very funny if I tried to use a Scottish accent! It just would sound weird if I imitated something that doesn't come naturally! If I would force it then it would just... people would find it funny, who are local! And who knows how - how it should sound and I would probably get it wrong, because it's just not my vocal cords, I am not adjusted to this level of speech they are using and it's not easy to master the accent!

The following four participants answered similarly, though with less elaboration, when they were asked about their accent aim:

Excerpt 4.14: Interview on 02 Oct 2015

Gizela I would like to have the proper English accent.
LOR: 12 years

Excerpt 4.15: Interview on 02 Oct 2015

Matilda I prefer English accent because it's clear, better to understand and it is more proper
LOR: 10 years [than Scottish].

Excerpt 4.16: Interview on 15 Oct 2015

Stela I would like to speak with the proper English accent, and I want to make sure that it is
LOR: 10 years understood!

Excerpt 4.17: Interview on 16 Nov 2015

Kristína I would like to speak with posh London's accent!
LOR: 13 years

The above four participants indicate that what they describe as the "English accent" is the most "proper" variety of spoken English, which suggests that they prefer a perceived 'standard' as opposed to any Scottish English variety, despite the number of years spent living in Edinburgh. However, Kristína elaborated further on her earlier opinion, and

mentioned that even if she would like to acquire a Scottish accent, she felt that Scottish society was never open enough to her to feel accepted:

Excerpt 4.18: Interview on 16 Nov 2015

Kristína I went to school here but we were mostly socialising with people from America or from Europe rather than people from the UK, because when we went to class the Scottish people would sit on one side and the other ones would sit on the other. For some reason we were just like separated from each other, 'cause they [the Scottish] were never really... they never really had willingness to socialise with us, so... It's not that I don't want to, it's really hard to get close to them, it's hard. Sometimes it's really hard to get **Scottish** Scottish friends!

(Note: Text in bold represents emphasised speech)

To summarise, the majority of Slovak immigrants stated that they preferred the “standard” English accent variety over the Scottish one, which may be due to standards taught during previous English instruction received in Slovakia. Also, most immigrant participants felt that imitating a local English variety might alienate them from their society, making them feel “artificial” due to imperfect imitation, a likely cause of their anxiety and distress. Thus, in some cases, they found speaking with a Scottish accent more challenging to successfully produce or imitate, which may have reinforced their feeling more comfortable speaking with the more familiar Standard Southern British English.

4.6 Discussion: What is the role of identity in Slovak immigrant women’s adaptation to their local language community?

Qualitative and self-reported data demonstrate that immigrant participants created identities that reflected their experiences both before and after immigration. Many immigrant participants with high pre-immigration experience with English, typically through English-language education, tended to base their identities on this experience and rejected

Scottish identities. Additionally, immigrants' experiences strongly reflected their upbringing and their transnational status, with very high SLOVAK ID and EUROPEAN ID scores regardless of their English education or LOR in Scotland.

The purpose of the present study is to examine associations between social factors and participants' perceptions and productions of local pronunciations. Identity is one such social factor that will prove to be key to analysing both vowel production and language attitudes development. The above results indicate that the native Scottish and immigrant Slovak participants perceived their own identities very differently, and that the immigrant Slovak participants were often well aware that influences from different countries and cultures shaped their identities. Establishing a measure of identity provides a framework that helps to direct further analyses of participant attitudes and speech production. As participants' experiences helped to develop their identities, and these identities provide a lens into how they process their experiences, refine their L2 phonetic inventories, and create language attitudes.

Many of the self-reported results from the identity section, such as the self-reported identity scores from the Relational Analogue Scale, are used as independent variables in later analyses of production and language attitudes. To summarise these variables, Tables 4.1 and 4.2 outline the identity scores for immigrant Slovak and native Scottish participants, in conjunction with age and LOR (where applicable). Chapter 5 examines the differences between these self-reported scores and more implied attitudes.

Table 4.1: Pseudonyms and ID scores for native Scottish participants

Pseudonym	Age (years)	LOR (years)	Scottish ID	English ID	European ID	Slovak ID
Native Scottish participants						
Agnes	36	--	95	54	74	--
Christine	22	--	90	67	41	--
Sorcha	31	--	96	15	37	--
Kirstine	46	--	100	0	50	--
Emilia	45	--	100	73	0	--
Laire	27	--	94	2	60	--
Lorna	45	--	94	3	75	--
Leslie	27	--	88	6	79	--

Table 4.2: Pseudonyms and ID scores for immigrant Slovak participants

Pseudonym	Age (years)	LOR (years)	Scottish ID	English ID	European ID	Slovak ID
Immigrant Slovak Participants						
Barbora	36	7	100	0	28	100
Viera	39	13	76	76	91	0
Izabela	39	15	50	50	50	50
Helena	33	10	99	7	59	97
Martina	37	18	45	15	76	89
Gizela	36	12	43	47	61	78
Matilda	37	10	23	44	62	84
Stela	32	9	32	10	86	90
Marta	40	11.2	85	11	100	70
Kristina	36	13	68	38	71	90
Simona	30	7	12	28	99	25
Zora	25	5.5	24	0	71	96
Vilma	25	5	50	23	83	67
Anna	24	5	42	13	63	96
Diana	24	5	10	20	91	77
Laura	25	5.5	1	0	91	86
Michaela	28	5.5	10	18	70	92
Julia	38	9	60	1	23	32
Lenka	42	13	59	13	91	79
Zita	33	5.4	13	17	76	91

The quantitative and qualitative findings of identity showed that high scores in self-reported Scottish identity were associated with Scottish accent choice, the decision to remain in Scotland, increased use of English at home and with friends, and low levels of previous language instruction. Combinations of social and personal factors indicated that highly “integrated” Slovak immigrants rated their Scottish identity higher than the less integrated

and less motivated immigrants. The results showed that participants with high Scottish identity scores also frequently reported high identity scores for the Slovak identity. Though unexpected, the combination of high Scottish identity scores and high Slovak identity scores was not contradictory: the identity reporting task did not imply that high scores for one identity choice would exclude other identities from also having high scores, or vice versa for low identity scores. Several participants took advantage of this to favour or disfavour multiple identities. Furthermore, in qualitative interviews immigrants often stated that they felt rather undecided about claiming a single cultural identity, and these statements align with existing research on transnational identities in immigrants. Coming to their host country, immigrants often arrive as adults with already well-developed L1 identities, who after some time either recede or persist along with their L2 identity which they developed while in their host country (see e.g. Czubinska, 2017). The study showed that immigrants tend to not dwell on just their L1 identity, but rather develop perceptions of bi- or multi-cultural identities accommodating their nationality and their present environment.

4.6.1 The significance of a multi-cultural identity

European identity scores were consistently high among all immigrant participants, and for some this identity received higher scores than Scottish or even Slovak identities. Qualitative results also revealed that many immigrant participants believed that feeling European maintained both the importance of living abroad as well as a connection to their home country and Slovak heritage. This finding corresponds to Block's (2008) study, where he found that the immigrants tend to preserve their L1 identity, while over their period of residence developing ties in their host country. Block found that French teachers, rather than following close ties with the local community, saw London as "an un-English island, a

place where they could live their hybrid Anglo-French lives without any distractions” (p. 132). Block also reported that, due to the sheer number of non-native residents in the city, the immigrants in his study tended to have few British nationals as friends, and rather they preferred the company of other foreigners residing in London. The present study supports Block’s findings with participants in the immigrant Slovak sample, who overwhelmingly responded that that they perceived Edinburgh as a city that is not exclusively Scottish but open to foreigners. Participants in the present study also responded that they could interact with other foreign residents in Edinburgh, rather than just with locals.

Block’s (2008) results supported Morawska’s (2004) earlier sociological study, who examined identity development and assimilations among Polish immigrants in Philadelphia, Pennsylvania, USA. Regardless of their age, socioeconomic status, gender, or the number of years they spent in the U.S., the immigrant Poles still had limited English proficiency, adhered to a strong Polish identity, and associated predominantly with both Poles and other foreign-born speakers. Morawska found that Polish immigrants preferred to assimilate via “ethnicization as the mixing and blending of home- and host-country within an ethnic group rather than through integration into mainstream American society” (p. 1379). Prior research therefore supports the conclusions of the present study that indicate the presence of transnational identities among immigrants.

In their observations of the multicultural identity, Dörnyei, Csizér and Németh (2006) argued that “there is a growing tendency worldwide for people to develop a bicultural identity, partly rooted in their local culture and partly in the global culture” (p. 145). The global culture is represented via English, which is not typical for any of the observed countries, but rather represents a “world at large” continuum (*ibid.*). The significance of multicultural identities lies in how those identities often reflect immigrants’ life experiences.

Once formed, these identities help participants to process cross-cultural experience, and to later form and express language attitudes and to produce speech in their local language community.

Participants' identities in the current project are further explored in the language attitude and acoustic analyses presented in the following chapters. The combined qualitative and quantitative results from the identity analysis demonstrated that the attitudes making up participants' identities are both diverse and extensive. Greater attention is needed to fully understand the full impact of identity on the immigrant experience, and language studies were chosen to explore identity further in the present study due to the marginalisation of languages in social research that focuses on identity. Duchêne *et al.* (2013, in Forsberg Lundell and Bartning, 2015, p. 1) and Diskin and Regan (2015, p. 137) note that while many sociologists and social anthropologists acknowledge that language plays a role in identity formation, they often don't rank language high as a factor. As a result, studies on identity frequently fail to explore linguistic issues in sufficient detail. For example, Bechhofer and McCrone (2010) and McCrone and Bechhofer (2015) provide extensive analysis on what defines "being Scottish," but they say frustratingly little about the role that language plays in this definition. Diskin and Regan (2015) highlight the side-lining of linguistic factors as a serious gap in research, and this gap is what the present study intends to address. The following chapter on language attitudes provides a natural entry point for deeper focus via a linguistic perspective, before moving to an even more direct linguistic analysis on participants' speech production in Chapter 6.

Chapter 5: Language attitudes

5.1 Introduction

The current chapter outlines the methods, results, and discussion of the current study's analysis of language attitudes. As with Chapter 4, the current chapter begins with the quantitative methods and results used for measuring language attitudes. Subchapter 5.2 describes the verbal guise task (VGT), which was the primary instrument for collecting quantitative data on participants' language attitudes. Subchapter 5.3 outlines the statistical tests used before beginning the analysis of results in subchapter 5.4. Subchapter 5.5 outlines the methodology and results collected during the questionnaire, which was the primary instrument for collecting qualitative data about language attitudes. The final instrument for data collection, the task recording participants' knowledge and use of words of local origin is outlined in subchapter 5.6, along with the qualitative and quantitative data obtained from the task. Subchapter 5.7 summarises and discusses the results and apply findings to the research questions.

5.2 Verbal guise task: Methods

The present study utilised the verbal guise task (Soukup, 2001; Garrett, 2005) to investigate language attitudes from a quantitative perspective (e.g. Clark and Schlee, 2010; Dalton-Puffer *et al.*, 1997; Garrett *et al.*, 2003; Ladegaard, 1998; Ladegaard and Sachdev, 2006; McKenzie, 2008, 2010) by asking informants to listen to and evaluate spliced recordings incorporating speech from four different speakers: one Scottish, two immigrant Slovak speakers, and one English speaker. Each speaker was represented via four sentences from the "Spider and Toad" reading passage (see Appendix A10), creating sixteen total audio

stimuli for the task. A full explanation of the stimuli preparation and the splicing methodology are explained in the following subsections.

The reading passage was preferred over casual speech as the reading sequence was predictable yet the participants utilised a speech style in the reading that appeared close to natural speech in terms of dynamic pitch and tempo (Clark and Schlee, 2010; Campbell-Kibler, 2006). The nature of the task presented both difficulties and advantages in its use. Some previous researchers (e.g. Buchstaller, 2006; Kerswill, 2002) argued that the verbal guise technique brings a higher risk of variation in paralinguistic variables (e.g. pitch, loudness, “creaky” voice) due to physiological and behavioural differences between speakers. However, the benefit of the verbal guises, Zhang (2009, p. 153) argues, is that this technique relies on the speech of authentic speakers rather than imitation, which thus “minimise the potential influence of speaker differences on listeners’ perceptions.” The design of the task, therefore, was to avoid or minimise inherent difficulties while taking full advantage of what the verbal guises have to offer. A full description of the task and stimuli design and procedure is in order.

5.2.1 Selecting speakers

The task had informants evaluate four different speakers based on short samples of recorded speech: a native speaker from Edinburgh, two immigrant Slovak speakers, and a native speaker from Southern England. For each guise, a single recorded female speaker was selected from that language group to represent the variety. The Scottish and immigrant Slovak speaker samples were obtained from recordings made during the pilot study (see subchapter 3.2). Given the differences in pronunciations between two Slovak immigrants in the pilot study, two immigrant Slovak guises were selected: an “integrated” speaker with

close connections to her local speech community (SK +ID), and a “non-integrated” speaker who resisted making connections with her local community (SK -ID).

Additional contributors were recruited to provide speech samples representing Standard Southern British English (SSBE). These participants were not evaluated beyond the quality of their recordings as they were not privy to any other tasks in the study. A total of three SSBE speakers were initially approached to provide speech samples representing RP. The selection process for these speakers was similar to that used for speakers in the native Scottish English language group. The three speakers were all women native to the South of England, were aged between 26 and 30 years (mean = 27.3), and were of middle-class backgrounds. In preparation, I met with each speaker and explained the structure of the study. I offered some background into the study and my research, similar to icebreakers with participants in the main study. I then conducted informal interviews, not to collect data but to simulate the secondary purpose of the interview task, i.e. making the participants feel calm and relaxed. The speakers were asked to read the reading passage as naturally as possible, as if they were talking to a family member or a close friend (Carrie, 2014, p. 99). They could review the reading passage as long as they wanted before recording, but they were requested to read it only once to minimise bias and reader effects. After completion, their recordings were added to the pool of participants for the verbal guise task. They were recorded with the same tools and equipment as participants in the main study, and the recording location was also similar, i.e. the speakers were recorded in a quiet room at the University of Edinburgh.

From each language group, the single clearest, most perceptible, and most identifiable speaker was chosen to represent the group in the verbal guise task. All recordings were screened against excessive background noise or echoes, interference or

feedback from microphones, and excessive clipping. Representatives were also matched for voice quality, with the intention of having all four speakers with similar voice pitch and enunciation (e.g. avoiding “creaky voice” or lisping, etc.). Selected linguists and non-linguist audience listened to each of the four recordings to evaluate their differences. Table 5.1 presents the representative speakers, including their age, occupation, and language group.

Table 5.1: Overview of speakers used for verbal guise task stimuli

Pseudonym	Age	LOR*	Guise	Occupation
Monika	36	16	Immigrant Slovak (+identity)	Preschool teacher
Erika	35	9	Immigrant Slovak (-identity)	Slovak-English translator
Denise	30	-	SSBE	Lecturer
Clare	32	-	Scottish	Administrator/Manager

*Length of residence (LOR) is given in years.

The four speakers selected as guises included a Scottish speaker from Edinburgh, with the pseudonym Clare; an English speaker from Cambridge, pseudonym Denise; and two Slovak immigrants residing in Edinburgh, pseudonyms Monika (SK +ID) and Erika (SK -ID). The Scottish speaker Clare was chosen as a representative of the local language community in Edinburgh. It was necessary to understand how immigrants perceived their local community that they were exposed to daily and what attitudes they had towards its language. As there was little variation in how most native Scottish pilot participants read the reading passage, Clare was chosen due to the high quality and clarity of her recording.

The SSBE speaker Denise was chosen for this study to represent the prescriptive standards found in previous instruction. It was necessary to understand how long-term immigrants continued to judge English accents that served as model pronunciation in formal English language instruction in their home country. Denise, a speaker native to the South of

England, served as a comparison to find out whether immigrants still preferred the English variants of FACE and GOAT or the variants of their local community.

Two Slovak immigrants were selected based on the results from the pilot study. One immigrant speaker, Monika, self-identified herself as Scottish and her pronunciation of the FACE and GOAT lexical sets was very similar to that of her Scottish peers. She was exposed to the local Scottish community on a daily basis through her work as a preschool teacher, and at home with her native Scottish spouse. I used her as the SK +ID guise to determine whether participants would recognise and associate with her FACE and GOAT vowel realisations, which represents a foreign accent heavily influenced by local language norms.

The second immigrant speaker, Erika, was less willing to self-identify as anything other than Slovak. She represented a group of speakers with little to no interest in Scottish culture and acquiring local language norms. At the time of recording, Erika worked in Edinburgh as a Slovak-English translator, and perhaps the more formalised nature of her work had an impact on her language perceptions. Though she was also in contact with Scottish family and clients on a near-daily basis, due to her statements and pronunciation I used her as the SK -ID guise to determine whether participants would recognise or associate with a Slovak-accented speaker who resists assimilating local language norms.

Soukup (2009, p. 102) points out that using the verbal guise technique often requires recordings from “natural-sounding” speech, which then raises challenges for the comparability among the speakers. It was necessary for the recordings to be comparable across their paralinguistic features, and as such, attempts were made to minimise any irrelevant information. Recent research (e.g. McKenzie, 2010) criticised the use of scripted speech for matched- or verbal-guise tasks as scripted recordings were seen as more careful and less “authentic” than unscripted speech (p. 62). However, upon consideration this study

used the reading passage when building the verbal guise task for two reasons. First, previous research found that the prosodic and paralinguistic features of voice, such as voice quality, hesitations, or pitch of the prescribed text were more constant (McKenzie, 2010, p. 46). Second, the less spontaneous nature of the reading passage allows for greater control over “the word, the content, and the linguistic environments of variables” (Campbell-Kibler, 2013, p. 143).

An example of the care taken to select the most identifiable speaker lies with the choice of Slovak immigrants in the task. All participants’ productions were measured for vowel movement using Euclidean Distance (EucD), a measurement representing overall vowel movement in normalised F1-F2 space between vowel onset and glide (Irons, 2007, as cited in Hall-Lew, 2009). Euclidean Distance calculation is the square-root sum of onset-glide differences squared:

$$EucD = \sqrt{(F1_{onset} - F1_{glide})^2 + (F2_{onset} - F2_{glide})^2}$$

This formula was used to calculate Euclidian distance in the production task as well (see Chapter 6). For the VGT, Monika, a Slovak immigrant who self-identified herself as Scottish (+ID), acquired Scottish variants of FACE and GOAT across all speech styles (i.e. interview, reading, word list). A Tukey post-hoc analysis indicated that the raw Euclidean Distance measurements from her FACE and GOAT vowel realisations were not significantly different from the native Scottish pilot participants’ mean vowel realisations ($p = .998$). To compare, Erika, who self-identified as Slovak (-ID), was found to have significantly different vowel realisations from the native Scottish pilot participants ($p < .001$). Both speakers had equally long LOR in Edinburgh (7 years), and both were married to native Scottish partners at the

time of testing. Thus, these two speakers were selected to represent the immigrant Slovak language groups.

5.2.2 Overview of stimuli preparation

This section outlines the stimuli preparation process as a whole, while following sections outline each step in detail. The recordings were made in accordance with previous research (e.g. Campbell-Kibler, 2006; Clark and Schlee, 2010). Four sentences from the Scottish English speaker were selected from the reading passage, two with two FACE tokens each and two with two GOAT tokens each (see Table 5.2 in section 5.2.3). Since this study analysed the extent to which immigrants recognise and acquire specific local language features, the task design intended to assess how aware the participants were of these language features themselves. Splicing specific vowels enabled participants to target their focus on FACE and GOAT lexical sets only. The decision was made to use excerpts from the Scottish speaker (Table 5.1) as a template for all recordings, then to manipulate FACE and GOAT tokens only by splicing the vowels in to the template. Clare represented the Scottish guise, but her recordings were also a template into which tokens from the other three speakers would be added to create the task stimuli.

The purpose of the task was to elicit immigrants' opinions about Scottish English and culture in which they lived based on relatively minor adjustments to the recordings. The recordings ranged from one to five seconds in length so that listeners could concentrate on the particular speech sounds offered in each recording. However, the focus of the study was on the FACE and GOAT lexical sets only, so splicing was a means of retaining control over extraneous and distracting variables that could have an effect on the results (Campbell-Kibler, 2013). After splicing, all the recordings were consulted and validated by a number of

native and non-native English speakers, including supervisors, colleagues, and previous pilot participants, to ensure that the speech was natural-sounding despite splicing (Soukup, 2009). Unfortunately, some deviations in volume and intonation were unavoidable, often creating “tinny” versions of FACE or GOAT tokens that needed replacement before testing, hence the need for quality checks. However, splicing appeared to be a highly effective means of controlling for extraneous variables in a listening task, and was needed to manipulate the “precise linguistic characteristics we are interested in” (Campbell-Kibler 2013, p. 143; Campbell-Kibler, 2006).

Once the excerpts were added, the order of the stimuli was randomised before being presented in the testing sessions. Previous research showed that it is important for informants to “tune in’ to the language they are assessing” (Soukup, 2009, p. 28), and other research found that randomisation of speaker order helps avoid the increase of positive attitudes towards the first speaker (Dalton-Puffer *et al.*, 1997; Carrie, 2014).

5.2.3 Excerpt selection

At the start of the splicing process and before any sounds were spliced, four short excerpts were selected from the reading passage to be used as templates in the VGT. Since the reading passage presented the monologue of a single speaker, each excerpt was a short uninterrupted sentence in which only the speaker’s voice was present. The intended length of recording represented no more than 6 seconds’ total listening time per speaker, which was long enough to create adequate context for the selected FACE and GOAT tokens but short enough to ensure that listeners did not experience fatigue during the task (Campbell-Kibler, 2006). These excerpts served as templates: it was important to ensure that the task included identical recordings, where the only differences were spliced tokens from the four

speakers used in the task. For each stimulus in the task, the template excerpt had its FACE or GOAT tokens spliced out, in order to receive new tokens from other recordings. Each template excerpt therefore needed to contain enough relevant stimuli, which for the present study meant two FACE or two GOAT tokens each. Each excerpt was also a single independent clause, and extraneous or unnecessary phrases and clauses were omitted for reasons of brevity. Table 5.2 provides the full transcript of the recordings needed for the verbal guise task.

The text of the reading passage allowed for rapid searches for all viable tokens, as well as filtering by context. For this task, the most preferred tokens were those with very similar contexts to what was scored in the production tasks (see subchapter 6.2), where the following consonants were either /d/, /t/, /k/, or /s/ to help blend the transition (Gottfried and Strange, 1980). The results of the search were 8 tokens (Table 5.2) selected for each lexical set, for each guise – which included the Scottish guise, whose sentences still contained spliced vowels to remain comparable to the other guises.

Table 5.2: Examples of spliced FACE and GOAT vowels in sentences.

Reference	Sentence
<i>made-cake</i>	He had made a nice cake .
<i>taste-shade</i>	Its taste was only a shade or two away from perfection.
<i>toad-coat</i>	Toad whisked the coat off Spider.
<i>toad's-poking</i>	Spider turned back to see Toad's head poking above the water.

5.2.4 Vowel splicing and integration with the template

Vowel splicing required two periods of token selection and movement. In the template excerpts, tokens were selected and removed. In the target files representing the variants

that listeners were to judge, tokens were selected and pasted into the templates as replacement tokens. The majority of the token selection and manipulation were performed in Praat (Boersma and Weenink, 2010), with overall volume control performed in Audacity (<http://audacity.sourceforge.net/>) in the final stages of stimulus preparation. The process involved considerable effort to ensure that the templates and the task were as replicable as possible.

All splices in the VGT involved only the vowels of each token. For example, to splice the word *toad*, the vowel was identified, removed, then replaced with a GOAT vowel from one of the guise recordings, i.e. the Scottish variant [o], the SSBE variant [əʊ], or one of the Slovak variants [əʊ] or [o], with the same guise spliced in to replace both template tokens. Although the template excerpts were uttered by a native Scottish speaker, creating the Scottish guise stimuli still involved splicing to ensure that all guises received similar levels of manipulation (Allbritten, 2011). Therefore, with four tokens for each lexical set (FACE and GOAT) and four guises, the process created sixteen total spliced stimuli. However, the process was not simple replacement, and the spliced vowels required some minor editing to ensure that other linguistic artefacts (e.g. pops, changes to volume or pitch) were not inadvertently included with the splicing.

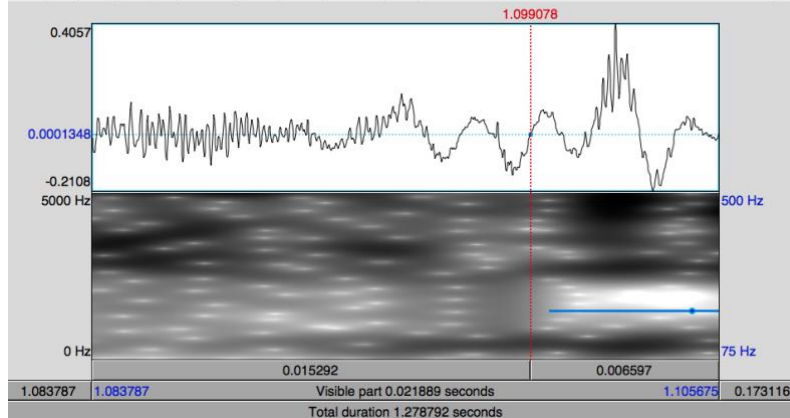
After selecting and saving the template phrases as new audio files, the next step was to open the files in Praat and adjust the window to include FACE and GOAT tokens to be manipulated. Then the alternative tokens were selected to be inserted to the template: tokens were selected ideally from the same place in the reading passage, or from those used in the same phonological environment (i.e. following either /d, t, k, s/). Alternative tokens for the Scottish speaker, Clare, were selected from similar phonological environments only. For example, if the token examined was *cake*, the nature of this study

was to find the same token elsewhere in the reading passage where the speaker says the FACE lexical vowel in a similar phonetic environment as the original. Other instances of *cake* would be considered, as would instances of words such as *take*, *lake*, *make*, etc., as they have the same following consonant. The original token to be replaced remained in the template file, while an alternative token was found in a new target file.

Due to constraints on time and resource for the present study, some decisions were made to limit the factors considered in token selection. For example, preceding consonants had little effect on token selection. Tokens with preceding consonants that had immediate and obvious coarticulatory effects on the vowel, such as nasals, laterals, and semivowels, were excluded, but no further qualifiers were placed on preceding consonants. Sentence position (i.e. prosody) was also generally not considered in vowel selection, unless the volume or pitch of the individual vowel was dramatically different due to sentence position. Replications of the present study may consider these factors are more viable effects on token selection, but for the present study the primary linguistic factor affecting token selection was following environment.

Once an alternative token was identified in the target file, the following step was to select the phonetic material to be copied and pasted, or spliced, into the template. In the target file, I selected the complete waveform where the vowel was present and uninterrupted by neighbouring sounds. The start and end points of the selection were moved to the nearest zero crossing, where the soundwave crosses the centre line. An example of a zero crossing is available in Figure 5.1.

Figure 5.1: Zero crossing example from the Scottish guise template used in the present study.

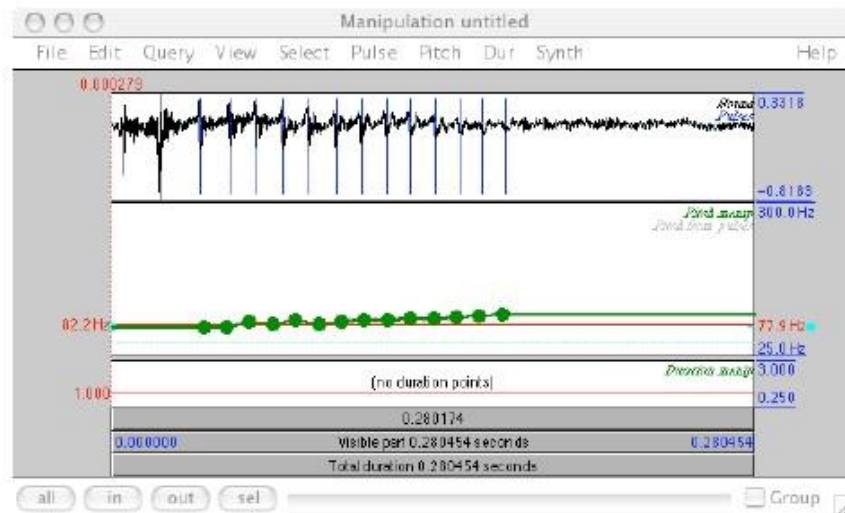


The times of the points were also recorded to the nearest microsecond (10^{-6} second), and selection length determined via the difference of these times. The process was repeated for the vowel of the original token in the template file. In the Praat Objects window, a Manipulation file was made of the target recording, in preparation for splicing to the template file.

The final step was to splice the target vowel to the template. To keep from unintentionally introducing vowel length as a factor, the length of the target vowel was adjusted in accordance with the target and template vowels' relative durations. A ratio was made of the two vowel durations ($\text{duration}_{\text{template}} : \text{duration}_{\text{target}}$), then applied to the target vowel only, making it slightly longer or shorter to match the vowel in the template file while the remainder of the recording was unchanged. A re-synthesis was published, and the target vowel duration in the re-synthesis was selected using the original vowel start time and the duration of the template vowel ($\text{start time} + \text{duration}_{\text{template}}$). The start and end of the selection were again moved to the nearest zero crossing, and the selection was copied. Back in the template file, the target vowel selection was deleted, and the copied target vowel pasted in its place, or spliced into the template file. An example of the manipulation

window, complete with tools for duration manipulation (green dots), is represented in Figure 5.2.

Figure 5.2: Example of the Praat manipulation window, from Campbell-Kibler (2006, p. 90). Individual dots represented the borders of sound selections to be manipulated, and dots could be dragged to increase or decrease duration as needed.



Successful splicing meant controlling for sound quality to ensure the most natural-sounding spliced recording. Since the target and template selections had endpoints at their nearest zero crossings, the splicing should not have resulted in clicks around the splicing. Pitch manipulation was attempted via the Praat pitch tiers (see Figure 5.3), but the resulting recordings were deemed too unnatural (e.g. “robotic,” “tinny”) by reviewers and pitch manipulations were scrapped. All available alternative tokens were considered, and were chosen based on which splicings created recordings that were least jarring, “robotic,” and “tinny,” as judged by my reviewers.

Figure 5.3: Praat pitch tier, from Cambell-Kibler (2006, p. 89). Pitches could be manipulated by dragging dots to desired pitch levels.



After splicing, supervisors, colleagues, and pilot participants who tested the recordings suggested several general changes for audio manipulation using Audacity. Volumes were normalised to produce the “loudest” volumes available without clipping, and the best means of doing so was to use Audacity’s compressor function. With this tool, Audacity amplifies audio to maximum levels using dynamic ranges, which targets and amplifies sounds within “normal” ranges for the recording. Sounds outside of these ranges receive less or no amplification: excessive loudness - i.e. sounds that would otherwise cause clipping - as well as background ambience (e.g. fans from air conditioning units) receive only minor amplification if any. As a result, amplification via dynamic ranges made the speech louder and clearer without negatively affecting sound quality. The “Change Tempo” function, which manipulates the speed differences between the tokens and the rest of the sentence, was used as an alternative to Praat’s duration manipulation in robotic or “tinny” recordings. The stimuli were normalized to 48dB SPL (decibel sound pressure level). The revised stimuli were received between the original tester listeners, who agreed that volume and tempo

manipulation provided the most efficient means of making otherwise robotic stimuli more natural-sounding.

5.2.5 Task introduction

Despite increasing use of manipulated audio in VoIP (e.g. Skype) and telephone conversations, listening to spliced stimuli still creates a new experience for listeners. For this reason, it was necessary to “justify” the reason why the recordings sound somewhat unusual, in an attempt to reduce other effects on speakers’ perceptions. In their study, Labov *et al.* (2006) controlled for these effects by making up a story and informing their listeners that the speaker in the survey created multiple recordings of herself due to her job application as a radio broadcaster. This story prepared the listeners so they would not be surprised by the edited recordings, and it provided a believable context to explain why they were listening to the same person repeating the same passage again and again in different ways.

For the present study, a made-up story was needed to introduce the task so that native and non-native speakers alike would be encouraged to think in terms of gradients within Scottish accent. The story for this study went as follows: participants were told that an additional recorded task was in development, and that it was based on the reading task the participants read themselves in the test session, just before the verbal guise task. Previously, auditions were held to select the best speaker, and the winner and runners-up were chosen. The first-place winner was recorded, but a fault in the machinery caused bursts of static over certain words (i.e. the FACE and GOAT tokens). Since the audition winner could not be contacted to re-record, recordings from the four “runners-up” (i.e. the four representative speakers) were spliced in to replace the static bursts. The participants would

be tasked with measuring how appealing they found each new recorded speaker, and even to determine whether one of the runners-up could replace the original. A copy of the story given to participants at the start of the verbal guise task is available in Appendices A11 and A12.

Soukup (2001, p. 57) and Allbritten (2011, p. 168) stressed that all participants must be clear about the situation expected before beginning any language attitude study. Therefore, the “story” introduced at the beginning of the verbal guise task aimed to help participants to become quickly accustomed to the types of adjectives and scales needed when judging recordings during the task. Though potentially contrived, the use of a prompt to obfuscate the intent of the VGT was necessary as a further task using the same lexical sets followed the VGT. Given the precedence of using similar imagined scenarios to divert participants’ attention from tasks in previous research, the decision was made to use such a story in the present study - and in the absence of a suitable cover story evident in previous VGT research, a new scenario was devised for the present study.

5.2.6 Selection of semantic traits

The present study used a series of adjectives, placed on semantic-differential scales, to assess participants’ implicit attitudes toward the four guises. The first step in this process was the selection of semantic traits that would be relevant to the current study. An examination of previous studies that used semantic-differential scales to measure accent variation and acquisition among non-native speakers reveals over 60 traits for potential use in current sociolinguistic research (Ladegaard and Sachdev, 2006; McKenzie, 2006; Carrie, 2014; Soukup, 2009). To organise a wide range of adjectives, Lambert (1967) in his study of personality traits suggested categorisation of informants into three personality factors:

competence (e.g. intelligence), personal integrity (e.g. trustworthiness), and social attractiveness (e.g. friendliness). These groups were later adapted to carry out different evaluations. For example, Zahn and Hopper (1985) categorised their attitude factors into “superiority” (e.g. intelligence; education), “attractiveness” (e.g. friendliness; likability), and “dynamism” (e.g. laziness; aggressiveness), altering factors based on the group studied (in Soukup, 2009, p. 107). Ladegaard and Sachdev (2006, p. 94) identified an additional grouping, “quality of language,” to be used especially with groups of immigrants and language learners.

The semantic traits in the present study were carefully selected based on existing research as well as the attitude responses towards Scottish speech varieties and culture taken from the Slovak and Czech immigrants and Scottish speakers in the pilot study (subchapter 3.2). It was essential that the traits used in this study were connected to the research questions about immigrants and their acquisition of local Scottish vowels, and thus to avoid any bias towards arbitrary selection of traits used otherwise through the previous research. I listened to the recordings of all 13 pilot participants (7 Slovak, 4 Czech and 2 Scottish speakers) and compiled a database of 140 unique adjectives they used to describe Scottish accents. I took into account how often traits were repeated across pilot participants, and selected the six most common traits, each of which were mentioned by at least 6 out of 13 total pilot participants. I then compared these results with a list of bipolar pairs which reflected researchers’ selection of widely-recognised attributes in language attitude research used in different speech contexts with non-native speakers, as well as the traits’ usefulness in rating (Ladegaard and Sachdev, 2006; McKenzie, 2006; Carrie, 2014; Soukup, 2009). In an effort to make the adjectives more compatible with what participants already feel about the Scottish varieties local to Edinburgh, I used the comparison to select

the most locally relevant and unambiguously positive or negative traits used by immigrants in the Scottish Standard English cultural context (cf. Paunović, 2009, p. 516; but see also Hay and Drager, 2007; McKenzie, 2006). The final selection – traits used by at least 6 out of 13 pilot participants, yet still reflected in language attitude research – yielded a list of nine adjectives: *likeable, annoying, foreign, difficult to understand, elegant, rough, posh, friendly,* and *pleasant*.

5.2.7 Visual Analogue Scales

Semantic differential scales used in this study were originally developed by Osgood *et al.* (1957) and were later adapted by Lambert and colleagues (1960) for the examination of language attitudes. Although the concept is not new, the present study uses a more recent adaptation, the Visual Analogue Scale (Llamas and Watt, 2014). Regardless of version, the scales represent the opposite poles of personality traits, such as *likeable vs. unlikeable* or *intelligent vs. not intelligent*. A scalar range is placed between the poles, and participants are instructed to tick a space on the scale that they believe to represent speaker best. This way the attitudes are measured in gradients (Garrett, 2005; Romaine, 1980). In some cases, semantic differential scales can use a number of augmentations between poles (e.g. five or seven), or they can be unipolar so that only one personality trait is displayed (Fasold, 1984; Garrett, 2005).

Figure 5.4: An example of the Visual Analogue Scales used in the Verbal Guise Task

Judge the Speaker

I think that Speaker 1 sounds...

Not likeable	_____	Likeable
Not annoying	_____	Annoying
Foreign	_____	Not foreign

In this study, a bipolar Visual Analogue Scale was used and presented to the participants through a website created for the task (see Appendix A11) or through a paper version (see Appendix A12), depending on availability and participants' preferences. In both tasks, for each sentence participants were presented with a page containing scales for all traits and their associated opposites (see Figure 5.4). After responding to the nine Visual Analogue Scales, participants were presented with a free-text field in which they were asked to identify the nationality of the guise. Participants were also given access to the recorded (spliced) excerpt, whether via a link on the website or on a PowerPoint slide prepared for the task. Participants listened to the recordings through headphones, and could listen as often as required before or while marking their responses. The methodological choices in respect to the scale were made according to the questionnaire, which also included a Visual Analogue Scale, so that consistency could be preserved across different tasks.

The order of the speakers in the task was randomised to avoid bias towards any particular language variety. Similarly, the scalar traits were transposed so that respondents wouldn't select any particular field merely out of bias; thus, the positive pole of adjectives (e.g. *friendly*; *not annoying*) alternated between the right and left sides of the page (Carrie, 2014).

5.2.8 Accent identification and qualitative commentary elicitation

The final part of the verbal guise task consisted of a question designed to elicit comments and explanations behind speakers' rating decisions: *Where would a speaker with an accent like this one come from?* This section was designed to test for how well the Slovak immigrants could identify the varieties of English the recorded speakers used, and indicate the speaker's nationality (Garrett *et al.*, 2003, p. 58). As McKenzie (2006, p. 110) pointed out, there is always some doubt as to whether listener-judges evaluate the recorded guises as they are intended, e.g. participants judging a Scottish guise as a "Scottish" guise. The misidentification of speech varieties (e.g. participants judging a Scottish guise as an "English" guise) can create difficulty for the interpretation of the data.

The reasons for including a section on accent identification were twofold. First, the speech identification extended beyond foreign/domestic divisions, and it was hoped that long-term immigrants in particular would be able to distinguish between local Scottish accent features and more prescriptive varieties (i.e. RP) learned in their home country (see subchapter 2.3 on formal language instruction). Secondly, it was hoped that these responses would be consistent, i.e. that the immigrant participants would not only be able to identify local Scottish accent features, but be able to identify them across both the FACE and GOAT lexical sets. The question also assists with these ethnic associations, and will help determine whether speakers have a preconceived notion of how speakers from different parts of the country "should" sound (Lindemann, 2003, as cited in McKenzie, 2006, p. 110). The data collected from this task provided information on skills in accent identification and implicit language attitudes, which were used primarily in contrast with self-reported scores on accent identification and language attitudes (see subchapter 5.5).

This section completes the review of task design and methodology for the verbal guise task. The following subchapters outline how the data collected from the VGT was analysed, and summarise the results obtained from the task.

5.3 Statistical models used in the study

The analyses in this study will make use of the following statistical models. For ease of reference, this subchapter will introduce a summary of the used models, incorporating the assumptions for each test, the specifics of each test and measure, and any follow-up or post-hoc tests. All methods and measures for the study are calculated using SPSS version 22 (IBM Corp., 2013) and the Rbrul tool (Johnson, 2009) developed for use with R (R Core Team, 2017).

While all the following statistical tests are used in the analysis of data for language attitudes, mixed-effects regression models with random factors (5.3.2) were used with analysis of production data as well. The present study assumes that readers have an understanding of basic tests assessing differences between groups (e.g. ANOVA, *t*-test) and associative/predictive analyses (e.g. linear regression) on a single dependent variable.

5.3.1 Principal component analysis

Principal component analysis (PCA) is a means of combining or “reducing” (Laerd Statistics, 2013; Field, 2012) numerous variables into overall components that describe large portions of the data. By doing so, it reduces a series of numerous related factors to a more manageable smaller number of distinct categories. In the verbal guise task, the PCA was helpful in reducing the larger series of separate but related adjectives to a smaller number of groups, or “dimensions”, that facilitate big-picture evaluation.

A PCA has two basic requirements that must be met to ensure that the sample is adequate for variable reduction: linear relationships between variables, as measured by the Kaiser-Meyer-Olkin (KMO) test; and sphericity, as measured by Bartlett's (1950, as cited by Laerd Statistics, 2013) test of sphericity. KMO scores range between 0 and 1, with ideal measurements above 0.8, and Bartlett's needs to reject the null hypothesis ($p < .05$) that distribution is random (Laerd Statistics, 2013; Field, 2012). Finally, setting up the tests for analysis involves selecting a rotation method used to simplify the data, resulting in more "interpretable" factors (Yaremko *et al.*, 1986, as cited in Brown, 2009). The most popular and easily-used rotation type is the Varimax rotation (Field, 2009), which is used in the present study.

As a PCA reduces the total variables to a set of dimensions, the analysis calculates eigenvalues to determine how many dimensions are statistically relevant to the study. According to Kaiser (1960), dimensions with eigenvalues above 1.0 represent meaningful portions of the data, and so should be included in factor analysis. The dimensions have no intrinsic order, but each variable "loads" to, or associates with, the dimensions outlined in the analysis. Connections between associated variables are then used to determine the meaning of the dimension. A loading plot (Cattell, 1966) calculates loading values for each independent variable, and these values can range from 1 to -1. Values above ± 0.8 are considered very strong loadings, values less than ± 0.5 are considered to demonstrate weaker associations, and values less than ± 0.3 are typically ignored in the analysis (Laerd Statistics, 2013; Field, 2012). The meanings of the dimensions are then determined based on which variables load onto each dimension, and eigenvalues are used to calculate the overall variance explained by the dimensions. Thus, a PCA reduces a large series of related variables into a more manageable number of identifiable dimensions.

5.3.2 Mixed-effects models: Multiple regression with random factors

Mixed-effects models are a means of examining associations between fixed factors (e.g. age, background, identity) and a dependent variable while adjusting results for random factors. In contrast to fixed factors, random factors may exhibit change even when all other factors are the same – for example, the variable WORD, where all other factors being equal a participant may still pronounce a given word slightly differently each time the word appears in the recording (Johnson, 2009).

For models that incorporate a continuous dependent variable (e.g. Euclidean distance) instead of a binary dependent variable (e.g. [-in] vs [-in]), the mixed-effects model has the same properties as a standard multiple regression model, which relies on several assumptions. A full description of assumptions is available in Laerd Statistics (2013), but most relevant to the present study is the assumption that the factors do not exhibit multicollinearity. Using SPSS (2013), the variance inflation factor (VIF) is calculated for each fixed factor in the model. Factors with a VIF over 10 are considered to exhibit high multicollinearity, and to resolve this situation the factors with the highest VIF can be dropped one-by-one from the model until all factors have a VIF under 10 (Laerd Statistics, 2013).

On one-level analysis, the mixed-effects model returns p -values and coefficients for each fixed factor. The present study reports coefficients from statistically significant fixed factors ($p \leq .05$). The coefficients for categorical factors (e.g. DECISION TO REMAIN) are presented for each sub-factor, and are fixed values for each sub-factor. The coefficients for continuous factors (e.g. AGE) are presented per incremental step, displayed as +1 in Rbrul, in the factor. The coefficient values for continuous factors are typically quite small, but in

practice they are related to the scores received. Though coefficients for continuous factors are typically quite small at first glance, their actual effects in practice are multiplicative on the overall model. Section 6.3.3 outlines the effects of categorical vs continuous coefficients in greater detail.

5.3.3 One-way repeated-measures ANOVA

A one-way repeated-measures ANOVA is a means of testing significant differences in data across three or more levels of a within-subjects factor, using the same participants for each level (Laerd Statistics, 2013). This test was particularly useful for the VGT, where there were four levels (guises) in the scoring for the overall task. This analysis differs from a standard one-way ANOVA in that the mean differences being measured are not between groups (i.e. between-groups factors) but between different levels of testing across the same groups (i.e. within-groups factors).

A parametric test, one-way repeated-measures ANOVAs assume normal data distribution. They also assume sphericity, which is a property of covariance in the sample evaluated by Mauchly's test of sphericity (1940, as cited in Field, 2009). Mauchly's test of sphericity sets up the null hypothesis that variances between stages of testing are significantly different. If the test returns a significant result, the assumption of sphericity is violated and a correction may be used to estimate global covariance, though this typically raises the p -value of the original test (Field, 2009). The correction used for VGT analysis in the present study, the Huynh & Feldt correction (1979, as cited in Laerd Statistics, 2013), best fit the requirements and initial results.

Results for the one-way repeated-measures ANOVA are similar to those for one-way ANOVAs. Both tests calculate overall effects, in which F scores and degrees of freedom are

observed, which makes the repeated-measures ANOVA an intuitive and easily conveyed means of evaluating mean differences across multiple stages of testing.

5.4 Verbal guise task results

Scottish and immigrant Slovak participants were asked to rate four speaker guises (SCOTTISH, SLOVAK +ID, SLOVAK -ID, ENGLISH) on nine traits – *likeable*, *annoying*, *difficult to understand*, *rough*, *friendly*, *pleasant*, *foreign*, *elegant*, and *posh* – along polar scales with “positive” and “negative” poles. The polarity grid of the adjective pairs was placed into an alternating positive-negative pattern so that the participants would avoid getting used to only a single pattern, and also would pay attention to the particular order of the adjectives (cf. Soukup, 2009).⁶

Analysis required aligning all polar scales to provide consistent measurements, to ensure that scores of 100 indicate “positive” attitudes. As described in section 5.2.6, the traits used in the task were first suggested by pilot participants in spontaneous discussion, and their associations were taken from these conversations as well. The resulting associations led to five traits being classified as “positive” – *pleasant*, *likeable*, *elegant*, *posh*, and *friendly* – and four traits classified as “negative” – *difficult to understand*, *annoying*, *foreign*, and *rough*. After inserting these traits into the alternating positive-negative grid, the traits on the right side of each polar scale (i.e. score 100 of 100) were, in alternating positive-negative order, *likeable*, *annoying*, *not-foreign*, *difficult to understand*, *elegant*, *rough*, *friendly*, *posh*, and *pleasant*. Due to the arrangement of traits, the *foreign* trait was

⁶ The verbal guise testing pattern proved to be internally consistent, with results from both participant groups earning high reliability scores via Cronbach’s alpha (Scottish $\alpha = .841$; Slovak $\alpha = .852$). These high scores indicated that the test was a consistent measurement of guise evaluation.

automatically “reflected” (Laerd Statistics, 2013), or had a score of 100 on its contrasting trait (i.e. *not-foreign*). In this sense the “reflection” is quite literal: if a scale for *foreign* would have *non-foreign* on the left and *foreign* on the right, the reflected *not-foreign* scale has *foreign* on the left and *non-foreign* on the right. In both scales, the trait on the right would represent 100 of 100. Since reporting otherwise would mean altering the data, for the following analysis raw scores for the *foreign* trait will be referred to as *not-foreign*. To keep high scores consistent with perceived positive attitudes, traits *annoying*, *difficult to understand*, and *rough* were reflected in the analysis (i.e. Score = 100 - X), even though their scales had the trait on the right side of the scale.

It is worth discussing the inclusion of *foreign* as a negative trait and *posh* as a positive trait. It is understood that unlike traits such as *likeable* or *annoying*, *foreign* and *posh* are not immediately linked to positive or negative associations. The justification for this usage comes from pilot participants (Elliott and Hall-Lew, 2015) instead of prior literature: along with the other traits selected for the VGT, *foreign* and *posh* appeared most frequently in Scottish and Slovak pilot participants’ descriptions of foreign and local accents. The associations were also present in speech, with most participants associating *foreign* with negative qualities and *posh* with positive qualities. While these associations may not be present in previous research, the decision was made to utilise these traits as presented due to how closely linked the pilot participants were to the main study’s participants in terms of social background, nationality, and place of residence.

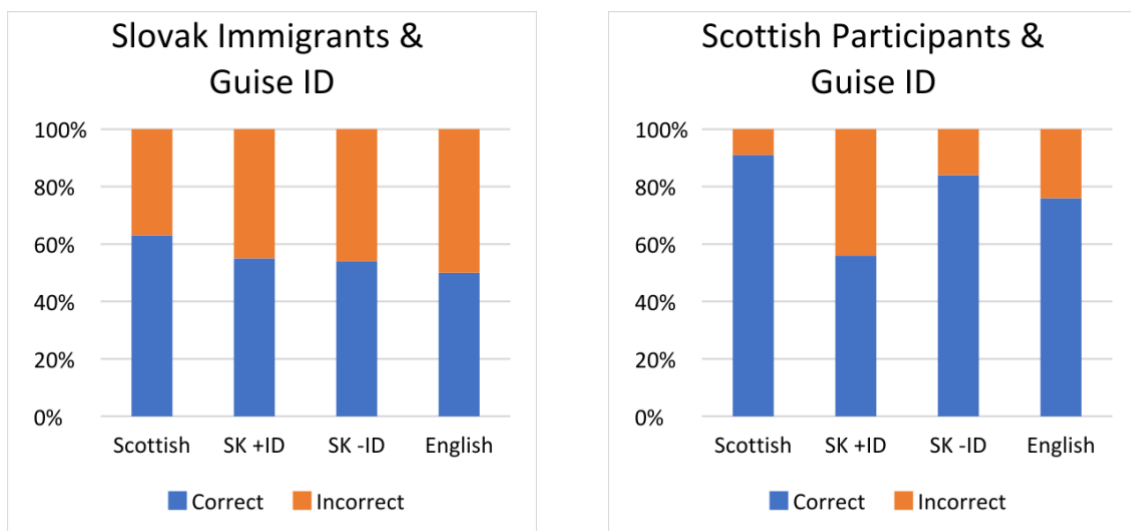
Once aligned to be internally consistent, the data were assessed for normality. z-scores indicated that the data exhibited high negative skewness, so they were transformed via the reflected square-root procedure (see Appendix B2). Section 6.3.3 outlines the procedure and purpose of data transformation in greater detail, but in short for the VGT

data transformation was necessary for meeting the assumptions of the regression model created to analyse the data. Transforming the data was successful and producing more normally distributed results, and led to decreased z-scores for skewness, all within the lower bound of -3.29 (Field, 2009). Examples of the transformation's effects on histograms and z-scores are given and described in section 6.3.3. For further evidence of the effects of transformation, Appendices B3-B6 show the Q-Q plots before and after transformation.

5.4.1 Guise identification

This section details the results from the final question in the verbal guise task, *Where do you think a speaker with an accent like this comes from?*, which was an assessment that supplemented self-reported ACCENT AWARENESS scores from identity data collection in the questionnaire. Results are presented as percentages of correct responses, and Figure 5.5 outlines each participant group's mean rates of correct responses towards the question.

Figure 5.5: Overall percentage of responses for guise identification by Slovak and Scottish participants



Although this task was chronologically the final question for each guise evaluation in the VGT, its results are reported first due to their implications on the guise evaluations. Overall, mean evaluations suggest that immigrant Slovak participants identified the guises with little variation in mean success rates. Even so, the immigrant participants most successfully identified the Scottish guise, followed by the two immigrant guises. Despite the low success rates overall, the results indicate a measure of difference in accent familiarity, and thus in identification success. The immigrant participants were more successful at identifying guises they encounter on a day-to-day basis in Edinburgh – and were more effective at identifying native guises than the immigrant guises. However, overall the results imply that immigrant participants' identification rates were little better than random guessing, and indicated low awareness of the offered varieties or perhaps that they struggled to distinguish a distinct variety from the spliced sentences. This observation builds on those made by Carrie (2014, p. 199) and Williams et al. (1999, as cited by Carrie 2014, p. 199), who suggested that random responses can indicate that participants wouldn't have experience with or awareness of the speech varieties offered through the guises.

In comparison with the immigrant Slovak group, recognition rates by the native Scottish participants were very high. Native Scottish participants were most successful in identifying the SCOTTISH guise and the SK -ID guise. Identification rates for the SK +ID guise, in contrast, were quite low, suggesting that the native Scottish participants found it harder to identify the nationality of the "integrated" Slovak guise despite the ease with which they identified the "non-integrated" Slovak guise. With the exception of the SK +ID guise, the native Scottish participants' guise identification rates were over 75% correct.

It must be noted that since the interviewer was a Slovak immigrant herself, the identification rates obtained for the Slovak guises might have been affected by the

observer’s paradox (Labov, 1972): as this part of the verbal guise technique came late in the experiment, conversations between participant and interviewer may have familiarised the participant with Slovak-accented pronunciation features. This familiarity may have primed native participants for either or both immigrant guises, inflating the identification scores for these guises.

An independent-samples *t*-test was conducted to compare mean identification rates for each guise between both participant groups (Table 5.3). Results indicated significant differences between both Slovak and Scottish participant groups for the SCOTTISH guise, the ENGLISH guise, and the SK -ID guise, with at least medium effect sizes for each. In total, the results suggest that immigrant Slovak participants were significantly worse than the native Scottish participants in identifying the above guises.

Table 5.3: *t*-test results for score difference per guise, between Slovak and Scottish participant groups.

Guise	df	<i>t</i>	<i>p</i>	<i>r</i>
Scottish	26	-3.00	.006	.507
English	26	-2.36	.026	.421
SK +ID	26	-.141	.889	--
SK -ID	26	-2.54	.017	.446

The exception to this rule is the identification of the integrated Slovak guise, which both participant groups identified with success rates under 60% and the differences in success rates between groups were not statistically significant. Indirectly, the results shed a light on possible motivation behind immigrant integration. By changing her pronunciation patterns, the Slovak immigrant selected for the SK +ID guise successfully decreased her chances of being identified as “foreign” by both native and non-native Edinburgh residents. Given that in the three choices for guise identification there was only one that indicated a foreign guise, regardless of whether the “incorrect” choices were English or Scottish the results still

appear to represent the ideal: a non-native resident who often passed as native when heard by both native and non-native participants in the study. The fact that Slovak and Scottish participants had little difference in identification rates for the SK +ID guise also underscores the potential fallibility in using participant nationality to predict successful guise identification.

Evaluations of the results indicate that the immigrant Slovak participants were highly unsuccessful at identifying the guises in the VGT, to the point that their identifications were little more than random guesses. While this has immediate implications that contradict the relatively similar scores between the immigrant Slovak and native Scottish participant groups in the *accent awareness* portion of the questionnaire. More importantly, however, the immigrants' poor guise identification could mean that their guise evaluation scores were affected by low identification rates. As the immigrant participants had severe difficulties identifying the guises – even other immigrant Slovak guises – it is difficult to determine whether their guise evaluations reflect an accurate or erroneous interpretation of the guise. Furthermore, as the source of the difficulty cannot be determined, it is not possible to transform or adjust the data to take the findings into account. The following sections outline the results of the guise identifications, taking into account immigrants' and (to a lesser degree) native Scottish participants' errors in guise identification. Chapter 7 examines how participants' scores affect individual attitudes by performing a case study on two immigrant participants who demonstrated very different attitudes in the present study.

5.4.2 Participants' evaluations: Guises

The first thing participants saw when entering the VGT was the evaluation of recorded guises via a series of adjectives on attitudinal scales. The recorded guises included a native

Scottish English speaker who spent most of her life in Edinburgh (SCOTTISH), a native SSBE speaker who spent most of her life in southern England (ENGLISH), a Slovak immigrant from the pilot study who strongly self-identified with Scotland and openly attempted to accommodate Scottish pronunciation patterns (SK +ID), and a Slovak immigrant from the pilot study who self-identified as primarily Slovak and resisted accommodating to Scottish pronunciation patterns (SK -ID). Table 5.4 presents each participant group’s mean scores and standard deviations for each guise over the verbal guise task. Both participant groups favoured the SCOTTISH guise most, but after that the rankings diverged:

- Aside from the Scottish guise, Scottish participants favoured both immigrant guises over the ENGLISH guise, while Slovak immigrant participants preferred the SK -ID and ENGLISH guises.
- Immigrant participants found the SK +ID guise, or most “integrated” immigrant guise, least favourable of all over the course of the task. However, the standard deviation for the SK +ID guise was larger than that for SK -ID, indicating a wider variability of scores.

Table 5.4: Mean evaluations and standard deviations for both Slovak immigrants and native Scottish speakers on all traits.

Participant Group	Scottish	SK +ID	SK -ID	English
Immigrant Slovak	4.71 (2.83)	4.29 (2.71)	4.53 (2.59)	4.48 (2.71)
Native Scottish	5.68 (2.60)	4.62 (2.69)	4.60 (2.78)	4.42 (2.55)

Since the verbal guise task tested multiple levels of within-subjects factors on the same participant group, a one-way repeated measures ANOVA was used to evaluate differences between means (Laerd Statistics, 2015). Despite lower apparent variation between guise scores, the results show that there were statistically significant differences in how the

Slovak immigrants rated the four guises, $F(2.97, 2134.03) = 7.11, p < .001$. Results for Scottish participants also demonstrate statistically significant differences in their guise ratings, $F(2.89, 826.06) = 18.43, p < .001$. Tests for both participant groups underwent the Huynh-Feldt correction (see section 5.3.3). The key difference between the two groups is that ANOVA test for Scottish participants returned a much higher F value, and thus greater statistical power, than did the test for immigrant participants. These results were likely due to immigrants' difficulties with guise identification, and they appear to indicate that although immigrant participants judged the guises differently the difference may have been somewhat limited. With overall effects established, the next step in the analysis was to examine how participants perceived the nine individual traits in the task.

5.4.3 Participants' evaluations: Individual traits

Appendix C1 presents the Slovak immigrants' mean evaluations and standard deviations per trait for each speaker guises. For the native guises, immigrants gave the SCOTTISH guise highest scores for *likeable*, *not-annoying*, and *easy to understand*, but lowest for the *not-rough* trait. The immigrants gave the ENGLISH guise the lowest mean scores for *likeable* and *not-annoying*, but the highest mean score in *posh* – which suggests that, unlike the pilot participants, immigrant participants in the main study may not have seen *posh* as a positive trait after all. For the Slovak guises, immigrant participants gave the SK +ID guise the lowest mean scores for *easy to understand*, *not-foreign*, and *elegant*. In contrast, immigrants gave the SK -ID guise the highest mean scores for *friendly*, *not-rough*, and *elegant* – meaning that they evaluated one immigrant guise as most *elegant*, and the other immigrant guise as least *elegant*. Although these results are promising as insights into immigrant participants' perceptions of the different guises, the conclusions are tempered by the fact that immigrant

participants had difficulties with guise identification. As further evidence that the immigrants' guise identification results likely affected their perceptions, only three differences in trait scores were significantly different between guises, *not-annoying* ($p = .043$), *not-foreign* ($p < .001$), and *not-rough* ($p = .038$, see Appendix C2). The varied and statistically insignificant ratings were expected, given immigrant participants' difficulties in guise identification, but with significant differences between guises for *not-foreign* the immigrant participants demonstrated at least basic awareness of the differences between the guises.

Appendix C3 outlines the mean scores Scottish participants gave the four guises in the verbal guise task, and their standard deviations. Scottish participants showed high solidarity with the SCOTTISH guise, giving it the highest mean scores for traits *likeable*, *not-annoying*, *not-foreign*, *elegant*, *friendly*, *pleasant*, and *easy to understand*, in comparison to scores for other guises. In almost direct contrast, Scottish participants gave the ENGLISH guise lowest mean scores for *likeable*, *not-annoying*, *friendly*, and *pleasant*. For the Slovak guises, native Scottish participants gave the SK +ID guise higher mean scores than its SK -ID counterpart only for *likeable*, *not-annoying*, and *not-foreign* traits; however, the SK -ID guise received higher scores in all other traits, as well as the highest mean score for *not-rough* among all guises. Scottish participants correctly identified the SK -ID guise as an immigrant accent, giving it the lowest score for *not-foreign* among all guises. Unlike the immigrant group, many of Scottish participants' differences in trait scores between guises were statistically significant, including *likeable* ($p < .001$), *not-annoying* ($p < .001$), *not-foreign* ($p < .001$), *friendly* ($p < .001$), *posh* ($p = .05$), and *pleasant* ($p < .001$, see Appendix C4). These results contrast especially with the immigrant group in that the Scottish participants had

few difficulties with the guise identification task, leading to stronger perceptions and greater differences in their guise scores.

With nine individual traits in the task, dimension reduction is the next step in determining specific results in the verbal guise task. The following section outlines the results from the principal component analysis, which was the procedure used to turn the nine individual semantic traits into a more manageable number of distinct but more widely applicable factors, or dimensions.

5.4.4 Principal component analysis

5.4.4.i Reducing 9 traits to 2 dimensions

A principal component analysis (PCA) was performed to identify the extent to which the evaluated traits were grouped together in order to condense a larger set of variables into a smaller number of components – in this case, the underlying influences found in other research on language attitudes, *social attractiveness* and *prestige* (Carrie, 2014). After having ascertained the positive and negative qualifiers, the PCA was used to confirm whether the participants in the study exhibited underlying themes of SOCIAL ATTRACTIVENESS and PRESTIGE in their language attitudes. Equal variance was not assumed for analysis (Laerd Statistics, 2015), and the test was performed on aligned but untransformed data.

With assumptions met and the Varimax rotation (see section 5.3.1) selected (Brown, 2009), the PCA revealed two dimensions with eigenvalues greater than 1, making them fit for use in analysis:

- For Slovak immigrants, the two components were responsible for 63.8% of the variance: rotated output revealed that Component 1 accounted for 43.2% of the variance, while Component 2 accounted for 20.6%.
- For the native Scottish participants, the two values combined accounted for 71.4% of variance: 44.2% for Component 1, and 27.1% for Component 2.
- Relatively similar results between immigrant and native participant groups suggest that performance in the guise identification task had little effect on reducing the adjectives to two components.

For Slovak participants, *pleasant, likeable, not-annoying, friendly, easy to understand*, and *not-rough* loaded with Component 1, whereas *posh, not-foreign*, and *elegant* traits loaded with Component 2. Loadings for native Scottish speakers reveals similar though not identical results: *pleasant, likeable, not-annoying, friendly*, and *easy to understand* loaded to Component 1, and *posh, elegant, not-rough*, and *not-foreign* loaded with Component 2. McKenzie (2006, p. 139) suggests that having a few (i.e. 2-3) loadings in a PCA for verbal guise task evaluation demonstrates that participants judged the guises based on strong attitudes. The fact that immigrant participants had the same number of major dimensions as the native Scottish participants, and that the traits loading on to these dimensions are very similar between participant groups, suggests that the immigrant participants display judgements toward the perceived guises that are as strong as those by the native Scottish participants, even if these perceptions incorrectly identified the guises' nationalities.

5.4.4.ii *Defining the two dimensions*

The trait loadings for these two components are consistent with previous language attitude studies for both non-native and native speakers, where traits in Dimension 1 group were interpreted as features of SOCIAL ATTRACTIVENESS, or SOLIDARITY. Traits in Dimension 2, by contrast, were interpreted as the features of PRESTIGE, or SOCIAL STATUS. This suggests that both Slovak and Scottish participants evaluated the four different guises on how attractive and how prestigious these four accents seemed.

The definitions of the dimensions based on their loadings were based on definitions of the words themselves, which proved relatively intuitive but there were some exceptions. The *elegant* trait, for example, could feasibly fit with either dimension. The result suggest that the participants saw this also, for despite the fact that *elegant* loaded to PRESTIGE for both participant groups the loading value was lowest among other significant traits in the dimension. The *not-rough* trait also had a somewhat vague definition, which led to different loadings for each participant group. However, *rough* could be interpreted as either effects on sound quality or as a reflection on the social status of the speaker. Therefore, *not-rough* fits well into either component without affecting the overall meaning of the dimension. Appendix C5 provides the loading plots for each participant group.

After the traits were allocated to their dimensions, scores were calculated to determine scores for SOCIAL ATTRACTIVENESS and PRESTIGE. Each dimension's score was a mean of associated traits for that speaker evaluation: for example, each SOCIAL ATTRACTIVENESS score for immigrant Slovak participants was a mean of *pleasant, likeable, not-annoying, friendly, easy to understand*, and *not-rough* trait scores, while each prestige score was a mean of *posh, elegant, not-rough*, and *not-foreign* trait scores. The dimension scores were then

checked for skewness and square-root transformed (see section 6.3.3) for normal distribution, in preparation for subsequent analysis.

5.4.5 Score evaluations by dimension

The mean evaluations for individual speaker groups were calculated for SOCIAL ATTRACTIVENESS and PRESTIGE (Table 5.5). The results suggest that:

1. SOCIAL ATTRACTIVENESS:

- a. Slovak immigrants favoured the SK -ID guise, followed closely by the SCOTTISH guise.
- b. Native Scottish speakers reversed this pattern, favouring the SCOTTISH guise, closely followed by the SK -ID guise.
- c. For both participant groups, the ENGLISH guise appeared least attractive, and the SK +ID guise stayed in third place.

2. PRESTIGE:

- a. Both participant groups evaluated the ENGLISH guise as most prestigious, followed by the SCOTTISH guise.
- b. Immigrant Slovak participants found the SK -ID guise more prestigious, while native Scottish participants found the SK +ID guise more prestigious.

Figure 5.6: Mean scores for VGT dimensions, as observed per guise in the task

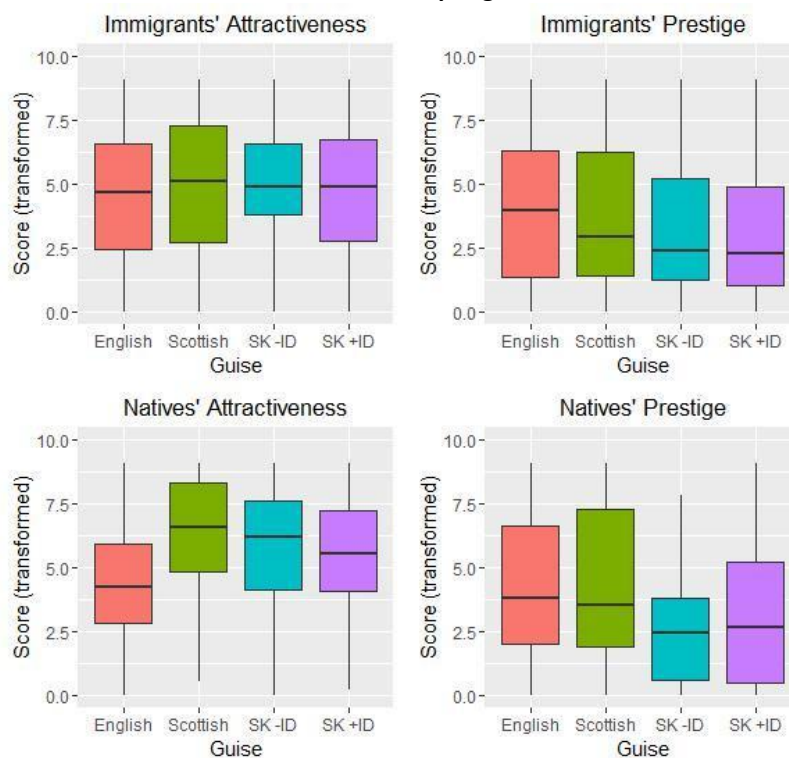


Table 5.5: The mean evaluations and standard deviations of the four guises for each participant group.

Immigrant Slovak participants								
	Scottish guise		SK +ID guise		SK -ID guise		English guise	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Social attractiveness	5.11	2.66	4.85	2.56	5.07	2.30	4.74	2.56
Prestige	3.90	2.98	3.15	2.65	3.45	2.78	3.97	2.94
Native Scottish participants								
Social attractiveness	6.39	2.05	5.41	2.34	5.71	2.44	4.49	2.36
Prestige	4.27	3.00	3.05	2.65	2.38	1.99	4.26	2.90

Even on initial analysis, the division of scores by guise provides details that were previously not apparent: for example, Slovak immigrants’ qualitative evaluation of the English guise as the preferred variety (see Chapter 4) appears to be linked to prestige and status rather than solidarity in the present study. However, low rates of guise identification may have artificially lowered immigrants’ scores for social attractiveness. From Figure 5.6 it is also apparent that Scottish participants had more dramatic variations in scorings between guises than did the immigrant Slovak participants (average difference of mean scores = 0.60). A

likely source of the difference is that with incorrectly identifying the guises the immigrant participants' guise evaluations remained effectively neutral, even if immigrants' associations were particularly strong. Therefore, it is difficult to determine whether the low variation was due to participants opting for a "no opinion" score, or that differing opinions mitigated overall effects. Further analyses will determine whether these trends represent significant effects on group scores.

5.4.6 Regression models: Immigrant Slovak participants

Guise scores were evaluated using a linear mixed-effects regression model with PARTICIPANT and SENTENCE as random intercepts. A separate model was created for the social attractiveness and prestige dimensions (see Appendices C7-C8). Results for the immigrant participant group revealed that, for both SOCIAL ATTRACTIVENESS and PRESTIGE dimensions, there were multiple significant correlations for nearly every guise but few variables were shared between guises, which further implicates immigrant participants' results in the guise identification task as an effect on guise evaluations. The following sections highlight key findings.

5.4.6.i Self-reported identity scores

Immigrant Slovak participants provided four self-reported identity scores, ENGLISH ID, SCOTTISH ID, EUROPEAN ID, and SLOVAK ID, and each of these identity scores was considered as a factor in the models for the four guise evaluations. Dividing results between the social attractiveness and prestige dimensions, few identity scores were statistically significant factors across all four guise evaluations per dimension (8 total models). For the SOCIAL ATTRACTIVENESS dimension, only ENGLISH ID was a statistically significant factor for all guise

evaluations, while for the PRESTIGE, only SCOTTISH ID was statistically significant for most guises (all save the ENGLISH guise). Additionally, coefficients for each of the above ID scores were positive for all guises. That is, participants with increased ENGLISH ID found all guises more socially attractive, and participants with increased SCOTTISH ID found most guises prestigious. The coefficients varied little, most around $\beta \sim 0.040$, so the degrees of correlations between groups and guises remained unchanged.

As factors in multiple regression models, SCOTTISH ID's and ENGLISH ID's associations with guise scores indicated that immigrant participants who offered scores for these self-evaluated factors were also more likely to give higher scores in the guise evaluations. However, the coefficients are relatively similar for each guise evaluation, which means that the results do not reveal much in terms of specific effects or preferences. These results contrast with the qualitative results from Chapter 4, where many immigrant participants voiced quite definite opinions about their identity, although low rates of guise identification may have reduced the effects of these opinions.

5.4.6.ii *LOR, before/after 2004*

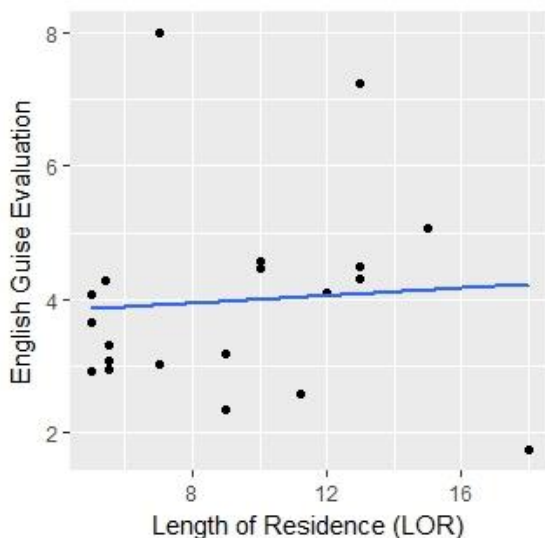
LOR and BEFORE/AFTER 2004 are both variables with links to length of residency: LOR is a continuous variable directly representing years of residence, while BEFORE/AFTER 2004 is a categorical factor dealing with date of immigration. The latter factor is an indirect measure of LOR: though the categories deal specifically with whether immigrant participants arrived before or after the date of Slovakia's accession to the EU, participants who immigrated *BEFORE 2004* likely have longer LORs than immigrants who arrived *AFTER 2004*. Although the factors were linked in theory, statistically they did not exhibit high multicollinearity and can be treated as independent factors. Regardless of how they measure LOR, both factors

indicate that participants with longer LOR were more likely to find the SCOTTISH guise as more socially attractive. However, the effects of each variable were moderate at best. With LOR, the coefficient ($\beta = 0.188$) initially appears quite high, but as LOR does not fluctuate as much as other self-reported variables ($\bar{x} = 9.2$) the coefficient does not suggest major changes in guise evaluation. Likewise, with BEFORE/AFTER 2004, the coefficients indicate that BEFORE 2004 is associated with only moderate increases to guise evaluations for the SOCIAL ATTRACTIVENESS dimension. These regression model suggests that participants who have resided for a particularly long time in Edinburgh may view Scottish speakers as moderately more socially attractive, but the results are such that LOR is not a huge factor affecting how appealing the Slovak immigrants found Scottish English varieties.

Figure 5.7: Scatterplots of the association between immigrant participants' length of residence (LOR) and prestige evaluations for English and SK -ID guises.

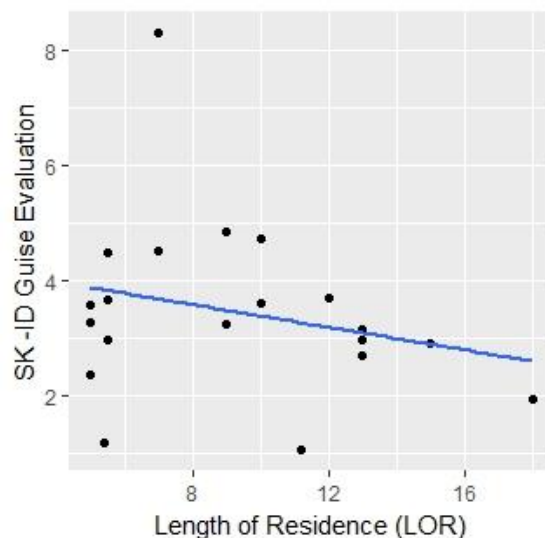
LOR and English guise evaluation.

Actual results suggest a slight increase in English prestige evaluations, instead of the decrease indicated by the coefficient in the regression model. However, this increase is nearly zero.



LOR and SK -ID guise evaluation.

Actual results are in line with the predicted coefficient from the regression model, with a distinct decrease to SK -ID prestige scores as LOR increases.



In the regression model for the PRESTIGE dimension, LOR was a statistically significant variable for the ENGLISH guise and the SK -ID guise only (see Figure 5.7), and had negative coefficients for both, meaning that increased LOR is associated with lower prestige scores for both. Results from the regression model suggest that increased length of residence in Edinburgh begins to break down assumptions of perceived prestige for SSBE accents, which would have been the model accent for English education in Slovakia (see subchapter 2.3). The predicted results from the model were close to the observed results from the study, outlined in Figure 5.7, with differences likely due to the random factors (PARTICIPANT and WORD) that were accounted for in the model. Removing or reducing these assumptions may lead to more open-mindedness about vernacular accents such as Edinburgh English. Results for the SK -ID guise suggest that increased length of residence is associated with decreased PRESTIGE evaluations for the non-integrated immigrant guise, suggesting that, as long-term immigrants become more comfortable with their local language communities over time, they also find Slovak-influenced speech more foreign-sounding and thus less prestigious – or are possibly more judgmental of Slovak-influenced English.

5.4.6.iii Scottish accent self-evaluation (SCOTACCENT)

The continuous variable SCOTACCENT was statistically significant for at least one guise in both SOCIAL ATTRACTIVENESS and PRESTIGE dimensions. For SOCIAL ATTRACTIVENESS, SCOTACCENT was a significant variable for the English guise only. The results indicated that participants who evaluated themselves as having a strong “Scottish” accent were also associated with higher solidarity evaluations with the ENGLISH guise. For the PRESTIGE dimension, results indicated that participants with high SCOTACCENT scores also found the SCOTTISH, SK +ID, and SK -ID guises more prestigious. The coefficients for PRESTIGE indicated positive association between

SCOTACCENT and the three guises, but the coefficients for the SK +ID ($\beta = 0.060$) and SK -ID guises ($\beta = 0.062$) were nearly twice as much as that for the SCOTTISH guise ($\beta = 0.036$). These results indicate that the SCOTACCENT variable had stronger correlations with the immigrant guises.

The results for SCOTACCENT are surprising, and therefore somewhat confusing, in that increased SCOTACCENT scores do not appear to suggest higher solidarity with the SCOTTISH guise in particular over other guises. Increased SCOTACCENT scores were also associated with higher prestige scores for the SCOTTISH guise and both immigrant guises - although the associations are unexpectedly stronger for the immigrant guises, not the SCOTTISH guise.

The results for SCOTACCENT indicate discrepancy between self-reported scores and guise evaluations. An intuitive result would be that immigrants who report that they speak with a strong Scottish accent also find solidarity with SSE speakers, but the model suggests an opposite correlation. In addition, the models acknowledge difficulties that immigrant participants had in identifying the guises may have had further effects on reporting the association between SCOTACCENT and the Scottish guise. While these results cast further doubt on how accurately the immigrant participants' self-reported scores were, given the presence of other discrepancies between self-reported identity scores and guise evaluations (see subchapter 4.4, Figure 4.2), the results could also have been influenced by immigrant participants' failure to reliably identify the guises they were evaluating. Regardless of the source, in the present study the scores for SCOTACCENT therefore suggest that perceived accent self-evaluation is not strongly associated with implicit language attitudes.

5.4.6.iv *Other variables*

No other variables had significant correlations with guise evaluations across both dimensions. However, some factors were limited to either SOCIAL ATTRACTIVENESS or PRESTIGE, but not both dimensions. The following results outline these “one-off” variables.

The ENGLISH USE WITH FRIENDS variable was a statistically significant continuous variable for the SOCIAL ATTRACTIVENESS dimension only, for the ENGLISH, SCOTTISH, and SK +ID guises. The coefficient for each guise was negative, indicating that increased English use with friends is associated with less solidarity with the ENGLISH, SCOTTISH, and SK +ID guises. These results are curious, as Regan’s (2013) results imply that increased L2 use in ELLs’ social circles is associated with a stronger sense of solidarity for the L2 and its native speakers. Although the coefficients for these guises are quite small ($\beta \sim -0.040$), the scores are relatively high for the variable ($\bar{x} = 75.150$), so the correlations with each of the above guises were noticeable. Given the non-intuitive nature of this factor’s results, it is possible that guise identification again had an effect on guise scores.

Participants’ decision to remain in Scotland for the foreseeable future (DECISION TO REMAIN) and ACCENT AIM were both significant for immigrant guises in the PRESTIGE dimension. The categorical factor DECISION TO REMAIN was statistically significant for the SK +ID guise only, and results from the analysis indicate that participants’ decisions to stay in Scotland for the foreseeable future (YES) were associated with lower prestige scores for the guise, while the NO or UNSURE factors were associated with higher prestige scores. In short, immigrants who decided to remain in Scotland tended to view the “integrated immigrant” guise as having lower prestige, which is a surprising result but again immigrant participants’ difficulties in guise identification may mean that their scores were not an accurate reflection on their attitudes toward integrated immigrants in Scotland. The ACCENT AIM variable, in contrast, was

a statistically significant factor for the SK-ID guise instead. Results from the model indicate that a *SCOTTISH* accent aim was associated with lower *PRESTIGE* scores for the guise, the *OTHER* accent aim was associated with higher *PRESTIGE* scores, and *ENGLISH* accent aim was not strongly associated with either direction. Taken at face value, these results suggest that participants who actively aimed for producing local accents are more likely to recognise the least integrated guise as less prestigious, thus dissociating themselves from the guise due to its lack of social status. However, a more likely explanation is that failure to consistently identify the guise being evaluated led to results that appear to dissociate Slovak-accented immigrant participants from the Slovak-accented immigrant guise.

For the immigrant Slovak participant group, no further variables were statistically significant variables in any guise, for either dimension. Although the regression model for immigrant participants had a higher proportion of statistically significant factors than did the model for the native Scottish participant group, immigrants' difficulties with guise identification meant that the coefficients from these factors may have been artificially reduced.

5.4.7 Regression models: Native Scottish participants

As with the immigrant Slovak participant group, native Scottish participants' guise scores were evaluated using a linear mixed-effects regression model with *PARTICIPANT* and *SENTENCE* as random intercepts, where the model was rerun for each dimension (see Appendix C9). The results revealed that few variables were statistically significant overall, and only the *ENGLISH ID* variable was statistically significant across both dimensions. The key findings are highlighted in the following sections.

5.4.7.i ID scores

Native Scottish participants provided three self-reported identity scores, ENGLISH ID, SCOTTISH ID, and EUROPEAN ID. For the SOCIAL ATTRACTIVENESS dimension, high scores for SCOTTISH ID were associated with higher guise evaluations scores for the SCOTTISH guise and the SK -ID guise. ENGLISH ID and EUROPEAN ID were also statistically significant variables for the SK -ID guise within the SOCIAL ATTRACTIVENESS dimension. High EUROPEAN ID scores were associated with higher SOCIAL ATTRACTIVENESS scores, as were high SCOTTISH ID scores but to a lesser degree. In contrast, as the coefficient for ENGLISH ID was negative, participants with high ENGLISH ID scores were likely to score the SK -ID guise as less socially attractive.

While it was surprising that any Scottish participants would give non-zero scores for ENGLISH ID, the regression model results suggests a possible insight into the results: if ENGLISH ID was a stand-in for a general British identity, then high scores for ENGLISH ID may have served to provide further contrast against EUROPEAN ID – i.e. to distinguish ‘British’ from ‘European’. This interpretation would naturally lead to less solidarity with particularly European-accented Englishes, which is what is seen in the results SK -ID guise evaluations. For Scottish participants, therefore, ENGLISH ID may not have represented solidarity with England so much as separation from non-British identities.

For the PRESTIGE dimension, ENGLISH ID stood out as a statistically significant variable for ENGLISH, SK +ID, and SK -ID guise evaluations. For each guise, the coefficient for the variable was negative but close to zero ($\beta \sim -0.030$), meaning that very high ENGLISH ID scores were associated with noticeably lower PRESTIGE scores for each guise. Although the results are intuitive for the immigrant guises, pointing to an association between participants’ English identity and lowered perceived social status of immigrant speakers, a similar result for the ENGLISH guise complicates the conclusion. However, given that the

range of scores (range = 0-73) and the mean ($\bar{x} = 27.5$) were relatively low, the model demonstrated little association between ENGLISH ID and PRESTIGE evaluations for the majority of native Scottish participants. No other self-reported identity scores were statistically significant variables in the PRESTIGE dimension.

5.4.7.ii AGE

Native Scottish participants' AGE was a statistically significant variable in the PRESTIGE dimension, and for the SK -ID guise only. The coefficient ($\beta = -0.136$) indicated that the older participants of the group were more likely to find the SK -ID guise less prestigious. Additionally, the coefficient indicates a large enough effect that AGE plays a very noticeable role in SK -ID guise evaluation. While the results suggest that increases in AGE were associated with lower SK -ID PRESTIGE scores, it is difficult to make comparisons without additional results. The results could imply that older participants may have found integrated or native guises more prestigious, but that implication is problematic because AGE is not a significant variable for any other guise.

Due to complicated results from nearly all statistically significant variables from the PRESTIGE models, it is evident that although AGE is a statistically significant variable in the PRESTIGE model it is difficult to draw wider conclusions about the results. These results are the first evidence that participants' ages have any association with their attitudes towards their host country.

5.4.8 Secondary regression models

This section re-examines the main effects of selected social variables that were originally removed from the regression model due to multicollinearity. To examine these factors

further, an additional multiple regression model was created with PARTICIPANT and SENTENCE as random intercepts. For the immigrant Slovak group, selected social variables for additional examination included AGE and YEARS OF ENGLISH INSTRUCTION. There were no variables excluded due to multicollinearity from the native Scottish group.

5.4.8.i Immigrant Slovak group: AGE and YEARS OF ENGLISH INSTRUCTION

For the immigrant Slovak participant group, the variables selected for additional analysis required separation from the main list of independent variables and analysis alone.

Variables AGE and YEARS OF ENGLISH INSTRUCTION were selected as due to multicollinearity they could not be included in the regression analysis. Variable ENGLISH USE AT WORK was also removed from the original analysis due to multicollinearity, but is not included in this secondary analysis because nearly all participants reported 100% use of English at their place of employment ($\bar{x} = 93.5$). The results of the analysis are in Appendix C10.

The results indicated that neither AGE nor YEARS OF ENGLISH INSTRUCTION were statistically significant variables for any guise, in either dimension, and therefore were not instrumental in predicting immigrant Slovak participants' guise evaluations.

5.4.9 Summary

The results indicate that immigrant Slovak participants' guise evaluations were more closely linked to how they perceived themselves than were the native Scottish participants' guise evaluations. Guise identification results indicated that immigrant Slovak participants were less successful overall than the native Scottish participants at identifying the guises they heard. Mean rates of successful identification for the immigrant Slovak group were around 50% for each guise, which was unique in that the variation in scores for guise evaluation was

quite small. Although mean rates of guise identification were higher for the native Scottish group, they were also subject to errors: the mean rate of identification for the integrated SK +ID guise was also around 50%. Therefore, while native Scottish participants were more successful in their identifications, their success rates varied a great deal across guises, and while immigrant Slovak participants were less successful overall their rates of identification were much more consistent. These results represent a point where implicit and explicit attitudes diverge, and the discrepancy between attitudes is acknowledged in recent sociolinguistic research (McKenzie and Carrie, 2018). Although immigrant Slovak participants self-evaluated their accent awareness (section 5.5.6) along the same level as that of the native Scottish participants, the immigrant participants may have over-estimated their ability to distinguish accents.

Results from the multiple regression models indicated that key social factors, and especially self-evaluated factors, were crucial in predicting guise evaluations for the immigrant Slovak participants. Self-evaluations such as SCOTACCENT and ID scores were statistically significant across both SOCIAL ATTRACTIVENESS AND PRESTIGE, and their coefficients were typically large enough to have noticeable effects on the model. However, this study demonstrated that self-evaluated attitudes are frequently not representative of demonstrated attitudes: the coefficients for SCOTACCENT, for example, indicated that participants who considered themselves to speak with a Scottish accent were more likely to evaluate the ENGLISH guise, not the SCOTTISH guise, as more socially attractive. Factors that did not require participants to perform self-judgment were generally more direct in their results, in that conscious decisions did not mediate responses. For example, coefficients for LOR indicated that immigrant participants who remained longest in Scotland were more likely to find the SCOTTISH guise more socially attractive and the ENGLISH guise less prestigious

– indicating increased solidarity with local Scottish attitudes. Guise evaluations by native Scottish participants, in contrast, were almost never associated with self-evaluated factors such as ID scores. Only the ENGLISH ID variable was statistically significant in either dimension, and consistently low ENGLISH ID scores by native Scottish participants meant that the variable rarely had more than minor association with guise evaluations. Additionally, though the models did indicate that more ID scores were statistically significant factors for the immigrant group than the native Scottish group, many of the results are highly unexpected, e.g. positive coefficients for ENGLISH ID/SCOTTISH ID associated with PRESTIGE evaluations for the SK -ID guise. These results indicate a second divergence from self-reported scores, indicating that identity scores as reported may not have a direct relationship with how the guises themselves were scored. Instead, qualitative indicators of identity, such as those presented during the interview, were more closely associated with guise evaluations.

With the above results, it is clear that the immigrant Slovak participants evaluated the guises differently, and for different reasons, than did the native Scottish participants. It is also clear that (self-evaluated) identity was strongly associated with how the immigrant Slovak group evaluated most guises, but the discrepancy between overt and covert attitudes may indicate that the instrument was not sufficient for consistent data collection.

5.5 Language attitudes: Qualitative analysis

5.5.1 Introduction

Chapter 4 explored the first part of the questionnaire, which was used to collect qualitative data on identity. The latter part of the questionnaire was used to collect qualitative data on language attitudes, and this data provided additional insight into how immigrants

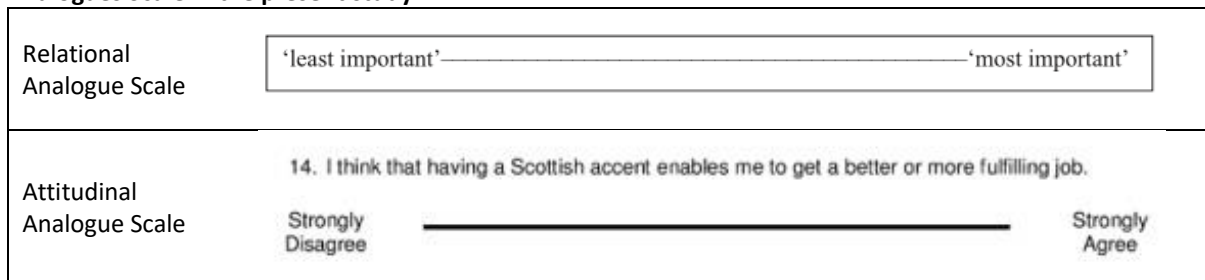
consciously define their views on given speech communities. The following sections outline the methods and results of this data collection.

5.5.2 Methods: Language attitudes

Qualitative data was collected in final section of the questionnaire, which took place immediately after the first part of the questionnaire (i.e. background information and self-reported identity preferences). For purposes of testing there was no “break” between the first and second parts of the questionnaire, as an obvious break would interrupt the flow of conversation needed to generate consistent qualitative data. The relationship between the questions asked also seemed to follow a natural flow: where identity prompts asked participants what they thought about themselves, attitude statements asked them to elaborate on the attitudes making up their self-reported preferences. During the attitude statements, participants would often go back to elaborate on their original responses for identity, relating their answers to the attitudes statements to given claims about themselves.

In addition to making note of participants’ attitudes while discussing the attitude statements, data was collected on the degree to which participants agreed with each statement. The data collection instrument was a magnitude continuum scale (see Sorace, 2010; Redinger, 2010, Redinger and Llamas, 2014), also known as an Attitudinal Analogue Scale (Llamas and Watt, 2014) (see Figure 5.8). Unlike the analogue scales used in the self-reported identity and VGT, each scale in the attitudes statements ranging from *strongly disagree* to *strongly agree*, with only one scale per statement. However, the general method of responding, i.e. placing a tick on a horizontal line to represent their attitudes, is the same as with the other methods.

Figure 5.8: Differences between a Relational Analogue Scale (Llamas and Watt, 2014) and an Attitudinal Analogues Scale in the present study



Researchers have generally employed the five, seven or nine-point Likert scales for measuring attitudes, since it effectively documented differentiating degrees of perceived foreign accentedness while providing participants with neutral position on the scale (e.g. Carrie, 2014; Derwing, Munro, and Thomson, 2008). Also, Lemon (1973, as cited in McKenzie, 2006, p. 59) found that fewer than seven points on the scale tended to irritate subjects, whereas “a larger number of points produced unsatisfactory distributions.” However, the present study utilised an Attitudinal Analogue Scale (AAS) instead, a replacement for Likert scales that enables respondents to make more intuitive and subtle measurements that more precisely reflect their responses (Bard *et al.*, 1996; Sorace, 2003). Redinger (2010) outlines how the advantages of using a magnitude continuum scale are manifold: participants’ finer control over their responses enables greater freedom of expression, it produces continuous data that can be analysed directly in statistical models, and subtleties of measurement provide more detailed analyses than would be possible with a Likert scale.

The attitude statements were designed to measure speakers’ integrative and instrumental attitude evaluations towards the Scottish Standard English variety (as spoken in Edinburgh) as two separate values for attitude assessment. The questions were also designed to measure accent awareness, both in terms of distinguishing between various

Scottish accents as well as Scottish versus English distinctions. There were 5 integrative, instrumental, and accent awareness questions per group (see Appendix D1). The range of questions from the questionnaire were inspired from Dörnyei (2003), Lamb (2004), Löw-Wiebach (2005), and Drummond (2010). The questions were originally written for Slovak immigrants in Edinburgh, then modified to address the same attitudes for Scottish respondents as well.

5.5.3 Data coding and analysis

The questions mapped each speaker's Scottish accent awareness, instrumental attitudes for local language learning, and integrative attitudes toward their local communities. The participants were also encouraged to speak openly about their responses to the questions, and these responses were recorded for qualitative analysis. The task used the mean scores of integrative, instrumental, and accent awareness ratings between Slovak and Scottish groups and compared them against participants' notable discussion points evident in the recordings. Key excerpts were selected, and scores from the attitude statements were compared to the excerpts to evaluate whether participants' responses were consistent between task scores and discussions.

The task scores themselves were taken from vertical marks placed on horizontal 10cm lines. Scores were collected in a fashion similar to the Attitudinal Analogue Scale, using *ImageJ* (Redinger, 2010) to measure distance in millimetres and generating numerical scores between 0-100 based on that measurement.

5.5.4 Associative and dissociative attitudes towards Scotland

Some of the most apparent attitudes immigrant participants held toward their host country are associative attitudes and dissociative attitudes. Participants' associative attitudes are generally represented through attachment or solidarity towards immigrants' language community and culture, while dissociative attitudes are concerned mainly with immigrants refusing integration with one local language community in favour of another (cf. Baker, 1992; Löw-Wiebach, 2005). Thus, dissociative attitudes towards the Slovak language could imply associative attitudes towards Scottish Standard English, or vice versa, though this does not always have to be the case. The study revealed no direct relationship between associative and dissociative attitudes: immigrant participants could hold associative attitudes towards both Slovak and Scottish, or neither, thereby expressing transnational and bicultural identities.

Immigrant participants' interview included some language attitude statements that reflected associative and dissociative attitudes towards local language communities in Edinburgh and Slovakia. For associative attitudes, one statement asked participants to consider whether they would like to *be part of* the local community in Edinburgh (Q3), while another statement asked them to consider whether they would like to *sound like* local communities in Edinburgh (Q10). Both directly addressed participants' desires to integrate with their local communities, and because both statements were "positive" (i.e. "I would like to...", "It is important for me...") higher score represent stronger associative attitudes to their host country. A different approach was taken with statements representing dissociative attitudes, although the wording was not directly contradictory. One question, dealing with attitudes towards Edinburgh, asks participants to consider whether they can speak "however they want" among Scottish peers (Q9). While this statement does not ask

participants whether they reject their local language community outright, it does ask them to consider whether they were less willing to adapt their speech to sound like their native Scottish peers in Edinburgh. The second statement reflecting dissociative attitudes took a similar approach but was in relation to participants' home country, asking them to consider if they would like to "lose" their Slovak accent when speaking English (Q21). This question also asks whether participants keep their speech separate from a speech community, though the phrasing is perhaps more direct than in Q9. Again, because the statements were both "positive" (i.e. "I can...", "I would like to..."), higher scores for these questions represented stronger dissociative attitudes. The results for these questions indicated that immigrant participants demonstrated more associative attitudes towards Scottish culture (78%) but their attitudes were less associative for acquiring the Scottish variety (50%). For the dissociative statements, the results indicated that immigrant participants exhibited strong dissociative attitudes towards their local language communities in Edinburgh (73%), and only slightly less dissociative attitudes toward Slovak-influenced pronunciation (65%). These results indicate that associative and dissociative attitudes are not related, which prompts the need for further analysis of the questionnaire as a whole.

Comments across participants demonstrated the differences of attachments between Scottish culture and Scottish English. Participant Martina explained why she felt like Scotland and Scottish culture were her "home":

Excerpt 5.1: Interview on 25 Sep 2015

Martina My kids are here [in Scotland], my husband is here, so I'm calling Scotland my home
LOR: 5 years now....Home is Scotland rather than England!

Participants Kristina, Vilma, and Zora all expressed different reasons being their choice to maintain a Slovak accent:

Excerpt 5.2: Interview on 16 Nov 2015

Kristina I would love to speak perfect perfect English, but I don't need to... I've never been in a situation when I need to lose my Slovak accent.
LOR: 13 years

Excerpt 5.3: Interview on 30 Oct 2015

Vilma That would be probably easier [speaking with] the Slovak accent and then get something else closer to - to the local accent but if people understand me then maybe I wouldn't like to lose it, but it might be easier for living here and raising kids.
LOR: 5 years

Excerpt 5.4: Interview on 22 Oct 2015

Zora I don't see how I could lose my Slovak accent, and I don't feel the need to really lose it, and I am not ashamed that I am from Slovakia, so... maybe if I stayed here for another twenty years it would change but for now, I don't mind it...that people know that I am not from here.
LOR: 5.5 years

Participant Julia considered the possibility of losing her Slovak accent, but still maintained that she would rather not sound like a native in her local community:

Excerpt 5.5: Interview on 01 Dec 2015

Julia If I wanted to change my accent then I would want to get rid of [Slovak] accent but not to take another accent on, so if I could speak very clearly without an accent that would be fine, that'd be nice, but I wouldn't want somebody's other accent to fit more in [the local community].
LOR: 9 years

In the above quote, Julia expressed ambivalence towards losing a specifically Slovak accent, but continued to view herself as outside of the local (i.e. Scottish) language community. Based on these attitudes, one can assume that the participants wished to associate with their local community to some extent, but also to preserve their own identity by not forgetting their own language.

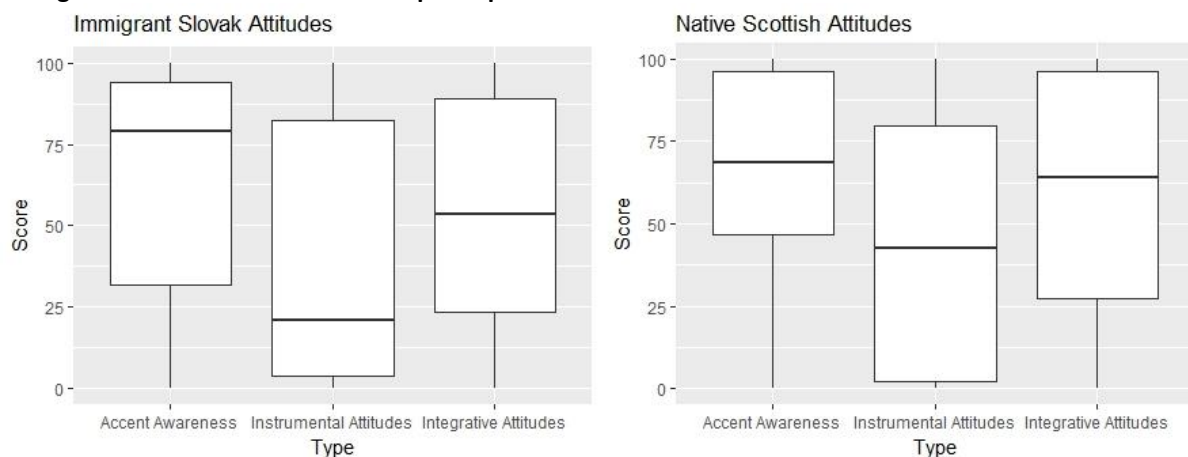
To summarise, participants' comments suggested that immigrant Slovak participants in the study felt at least partial association with their host society. The Discussion in subchapter 5.7 examines this association further, and assesses links between identity and reasoning behind immigrants' choices for either associative or dissociative attitudes.

5.5.5 Integrative and instrumental attitude statements

Included in the questionnaire were ten statements measuring specifically instrumental and integrative evaluative attitudes towards Scottish English used in Edinburgh (5 statements each). These statements were used for both immigrant and native Scottish participant groups. They measured more specific attitudes than associative and dissociative attitudes. This task was inspired by previous studies, such as Lamb (2004), Löw-Wiebach (2005), Dörnyei (2003), and Masgoret and Gardner (2003). A list of the prompts used for integrative and instrumental attitude statements, as well as mean scores for each prompt per participant group, is presented in Appendix D1.

Overall, it is apparent that both language groups follow similar trends: there are no large score differences between participant groups for most integrative or instrumental evaluations, which means that regardless of nationality the separate participant groups provided relatively similar answers in their responses to the questionnaire. Figure 5.9 highlights how similar the scores were between participant groups. However, there are some key exceptions to these trends, which will be outlined in the following subsections.

Figure 5.9: Mean scores for integrative attitudes, instrumental attitudes, and accent awareness scores for immigrant Slovak and native Scottish participants.



5.5.5.i *Instrumental differences: Scottish accent and social networks*

The participant groups diverged when considering their first instrumental statement, that a Scottish accent will help them make friends in their local community. Immigrant Slovak participants gave a lower score to this statement than did the native Scottish participants. As immigrant residents in Edinburgh would be especially aware of other immigrant communities, the findings that immigrant participants find a Scottish accent less useful for developing a personal social circle is perhaps unsurprising. However, immigrant Slovak participants also found the Scottish accent less important in professional social networks, when speaking with both native and non-native individuals, although the between-group differences for these responses were less than the difference when considering the Scottish accent and friends. It is apparent that immigrant participants placed little practical or instrumental value in speaking with a Scottish accent. This may be due to the fact that the immigrants found the city they live in rather cosmopolitan, with large number of international speakers, and as a result they might have faced less pressure to speak with a Scottish accent than they would have in more homogenous settings (cf. Block, 2008).

Participants Gizela and Julia provided further insight into these responses:

Excerpt 5.6: Interview on 01 Dec 2015

Gizela Because the Edinburgh is international, you can find [here] the different cultures from
LOR: 12 years all over the world!

Excerpt 5.7: Interview on 01 Dec 2015

Julia Immediately [after] I got here I met a lot of foreigners, like wherever I would go I would
LOR: 9 years see coffee shops, or you go to do shopping and it was like foreigners were everywhere,
so I was not so exposed to Scottish people!

Both participants conveyed what made Edinburgh such fertile ground for collecting data from immigrant participants. Scotland's capital is a centre of international activity, so in

many ways immigrants in Edinburgh can thrive in the city without becoming “Scottish.” Edinburgh’s status as an international centre is also precisely why the present study considers language attitudes in conjunction with production: adapting to local speech in places like Edinburgh can be viewed as a choice rather than a necessity, so language attitudes should reinforce production.

5.5.5.ii *Integrative differences: Elegance and education*

Scores for integrative attitude statements were also generally similar between groups, though some questions caused noticeable between-group differences. The first such difference was evident when considering whether the Scottish accent was “elegant.” Immigrant Scottish participants were less likely to agree with this statement than were their Scottish peers. Participants Matilda and Vilma both explained that they found the English accent (i.e. SSBE) more elegant than Scottish accents:

Excerpt 5.8: Interview on 02 Oct 2015

Matilda ‘English’ English [is] more clearer and sounds nicer! I prefer English accent because it's
LOR: 10 years clear, better to understand and it is more proper [than Scottish].

Excerpt 5.9: Interview on 30 Oct 2015

Vilma No, I think English accent sounds so elegant, Scottish sounds a little bit - I don't want to
LOR: 5 years say - rough - but it's very hard - strong accent so I don't really find it elegant or nothing
 like nice, I wouldn't like to listen to songs or a guy proposing to me in a Scottish accent
 - no, I think English accent is very very elegant rather than Scottish!

Matilda and Vilma’s statements were representative of the group in that they did give any evidence that they were aware of any popular surveys or cultural trends that place Scottish accents as more “warm,” “sexy,” or “friendly” than SSBE.

Immigrant participants' response to one of the most clearly negative attitude statements associating "Scottish accents" (including SSE) with uneducated speakers (Q26) was surprising, as the mean score (34% after reflection, see section 5.5.3) indicated that immigrant participants largely associated non-SSBE speech with uneducated speakers. Participants Michaela, Lenka, and Zita justified their responses with further explanations:

Excerpt 5.10: Interview on 13 Nov 2015

Michaela I prefer English accent or American accent, it just sounds better to my ears. When I hear people speaking with a Scottish accent, I think that... [Scottish] accent... people that are not really educated mostly use this accent... when I hear people speaking with a strong [Scottish] accent, I just feel like that they are not really educated, and I, maybe, I would feel that these kind of people would judge me rather than other people.
LOR: 5.5 years

Excerpt 5.11: Interview on 08 Dec 2015

Lenka Uneducated [Scottish] people can have sometimes rather a vulgar way of speaking perhaps, you know, rough - vulgar, so... But educated people can also have a Scottish accent, but in a more sophisticated way.
LOR: 13 years

Excerpt 5.12: Interview on 07 Dec 2015

Zita Maybe when you speak like really broad Scottish, usually in my experience, you are from lower, God, it sounds horrible, lower class, but do you know what I mean? Maybe not like middle class, like lower... I live in Leith, so you know, some - some people speak very differently there, but usually, you try to speak more nicely if you work in the office and you speak with other people, especially with the university where the employees are foreign, so you can't just go and speak a broad Scottish accent!
LOR: 5.4 years

The above comments indicate that immigrant participants may have perceived all Scottish accents, even SSE, as 'nonstandard', although some (e.g. Lenka, Zita) indicated differences between broad Scottish accents and SSE. Many immigrant participants still associated all Scottish accents with lower social classes, regardless of the number of years spent in Edinburgh. Immigrants participants' responses to this question contrasted widely with responses from the native Scottish participants, for whom the mean score for the equivalent integrative prompt (Q19) was 90% after reflecting the scores, meaning that native Scottish participants did not believe that Scottish accents were primarily spoken by

uneducated people. Participants Lorna and Christine provided further elaboration with additional comments:

Excerpt 5.13: Interview on 12 Feb 2016

Lorna It doesn't matter about your education, if you are born and brought up in Scotland, you're gonna have a Scottish accent!

Excerpt 5.14: Interview on 19 Oct 2015

Christine [I] disagree, because anybody can have a Scottish accent, even if you've not always lived in Scotland, you can pick it up, and I think you can pick it up because it's such a strong accent... I think you can pick up that sort of Scottish sound to it.

Despite these clearly different attitudes, the link between non-SSBE accents and speakers' education were one of the few points of difference of responses between immigrants and their native peers.

5.5.5.iii Summary of trends and exceptions

In general, immigrant Slovak participants' responses to the attitude statements aligned with those by native Scottish participants, and these results confirm the associative attitudes explored in section 5.5.4. However, explorations into instrumental and integrative attitudes strongly suggested that the immigrant participants differentiated social class by accent, and that they considered SSBE speakers to have a higher social class than even SSE speakers. Compared to scores by native Scottish participants, the immigrant participants rated the Scottish accent as less elegant and less important in professional circles, and they rated Scottish speakers as being less educated than SSBE speakers. These differences may be further reinforced when combined with results for identity and self-reported accent, and will be evaluated further in subchapter 5.7.

5.5.6 Accent awareness

As a supplement to instrumental and integrative attitudes, the questionnaire also had a series of five statements testing accent awareness. In general, immigrant Slovak participants demonstrated similar accent awareness to their Scottish peers: immigrant participants' mean score for the statements was 66.2, while native Scottish participants' scores for these statements was 67.1. That is, both groups self-evaluated their own awareness of local accents and pronunciation norms along very similar lines. However, during discussion several immigrant participants indicated that they had difficulties distinguishing subtle differences of accent, such as those between different regions of Scotland:

Excerpt 5.15: Interview on 07 Dec 2015

Zita I know that they are from Scotland but I don't know the difference between...How
LOR: 5.4 years people always say like, 'Oh, that's Glaswegian!' and I am like, no, [I] can't hear it.

Excerpt 5.16: Interview on 16 Nov 2015

Kristina If somebody is from Glasgow, I can guess that he's from Glasgow. Aberdonian, I think I
LOR: 13 years know Aberdonian, not really, sorry, I am not good with accents.

Excerpt 5.17: Interview on 25 Sep 2015

Martina I couldn't place every single person I don't think. I can probably tell a difference
LOR: 5 years between people from Glasgow, because they have quite a strong accent, but I don't
think I could tell the difference between somebody from Aberdeen and [the]
Highlands, I don't think.

Comments such as these, combined with the immigrant participants' performance on the guise identification task (see section 5.4.1), suggest that self-reported accent awareness scores may have been somewhat inflated by participants' over-estimation of their accent awareness. The apparent discrepancy between self-reported and implicit accent awareness levels will be analysed further in subchapter 5.7.

5.6 Knowledge and use of words of local origin (KUWLO) task

The KUWLO task does not directly measure language attitudes, but it is related to attitude studies in that dialect use often represents further integration with local language communities. Passive knowledge of words of local origin (WLO) supplements accent awareness as a measure indicating each participant's exposure to local language features, and long-term immigrants would reasonably be expected to demonstrate awareness of WLO in their local language communities. High active-use scores for the KUWLO task represent changes to immigrant participants' lexicons, in effect becoming more "Scottish" through the WLO's use. However, the task does not directly enquire about attitudes, and active WLO use could be interpreted as an element of production only. The presentation of this task therefore adds to what has been explored with language attitudes, and prepares for analysis for participants' results for production.

Following the questionnaire, participants were presented with a series of food- and weather-based words from the Scottish lexicon, and efforts were made to ensure that the words were used in the Edinburgh and Lothians region, though not in the region exclusively. This task was inspired by previous research by McGarrity (1998) and Löw-Wiebach (2005), who investigated the use of words and phrases in Doric. The task also examined the effects of social integration in Scotland, as it was expected that participants with Scottish spouses, children, and/or close friends would exhibit greater knowledge of WLOs. The task was designed to measure both words of local origin (WLO) awareness and use, and the following sections will cover these as well as connections between words and participants in the task. In general, the study found that while native Scottish participants demonstrated near-universal passive knowledge of the dialectal terms, their use of the terms varied – though each participant used at least one term regularly, WLO use ranged from near-universal use

to near-zero active use. In contrast, immigrant participants' passive knowledge varied widely, though all participants were aware of at least some of the terms; however, their active use was remarkable in that it was very low, indicating that even participants with the highest dialect awareness did not regularly use many terms. Given the differences between passive WLO knowledge and active WLO use, the results suggest that the two factors represent different and separate aspects of participants' relationships with their local language communities, ranging from exposure and awareness (WLO knowledge) and production as a reflection of attitudes (WLO use). Thus, the factors are examined separately in greater details in the following subsections.

5.6.1 KUWLO task methodology

Previous research on words of local origin suggests that dialect knowledge and use reflect overall trends between participants and local speech communities. For example, Macafee (1994) observes participants' decreasing active use of dialectal weather words as a reflection of increasing globalisation and language standardisation. In her study on language attitudes, McGarrity (1998) notes that local Aberdonians tend to socially stratify Scots language and cites vocabulary as a key feature of "low" Scots use. The present study also examined participants' knowledge and active use of selected lexical items as a further measure to assess Slovak immigrants' cultural awareness of Scottish English words of local origin (WLO). The Slovak immigrants and Scottish interviewees were given a list of 10 Scottish words via PowerPoint, with each word printed in black 80-point Calibri font on a separate white slide. They were asked to read aloud and provide meanings for each word. The readings were untimed, and each participant progressed through the list at their own pace. After defining each word, the interviewees were then asked whether, and in what

contexts, they know words and whether they use them regularly. The reviewer then took note of the types of settings mentioned by the participant: for example, formal settings such as school, library, or work; or informal settings such as with friends or family.

Creating a list to use in the KUWLO task required careful selection to minimise subjectivity in the task. The main interest of this study was to further assess integration with local language communities, as well as to differentiate between dialect awareness and its use among L2 speakers. In order to avoid selecting items arbitrarily, two semantic fields were chosen to represent a list of words of local origin. The reason behind this was to “select an area of vocabulary which is not linked to certain occupations, age groups, gender, etc. and which is of constant and, if possible, also of high importance to anyone” (Löw-Wiebach, 2004, p. 37). Therefore, weather and food items were chosen for this study for several reasons: for one, the weather and food are subjects of continual interest to everyone in the UK, and in regard of weather, particularly in Scotland; and, as Löw-Wiebach pointed, the weather affects all people, regardless of social divisions. Further, weather words were previously studied by Löw-Wiebach (1997), Macafee and McGarrity (1999), and McGarrity (1998), who used them throughout the North-East of Scotland. The food words were selected for their high frequency and use (personal communication with Dr. Christine Robinson, January 2014). Where the previous studies analysed only native participants local to Aberdeen, my study analyses non-native speakers of Edinburgh, which thus allowed a direct comparison between Löw-Wiebach’s results to assess how her results compare against an L2 sample.

The weather and food words selected for this study were drawn from the Concise Scots Dictionary (2005), and the Scots Thesaurus (1999) as being common through not necessarily exclusive to the Edinburgh region. It is noteworthy that in Aitken’s Scots Speech

model (1984:519-20), these words belong to the Column 1 items (“broad Scots”). The words were Scots in origin, but even SSE speakers would know and use these varieties due to variation between speech communities (personal conversation with Dr Christine Robinson, January 2014). Corbett and Stuart-Smith (2012) described Aitken’s model of Scottish language as a “bipolar continuum of accents, whose poles are usually called ‘Scots’ and ‘Scottish Standard English’” (see section 2.4). For the full list of Scottish weather and food words, please see Appendix A9.

5.6.2 KUWLO task analysis

The lexical recognition task was inspired by previous research by McGarrity (1998) and Löw-Wiebach (2005), who investigated the knowledge and use of words and phrases in Doric, a variety of Scots spoken in the North-East of Scotland⁷. Scots terms were presented to the participants who read each word aloud first and then they provided their meaning. They were also asked about the frequency of the term used and when they heard it for the first time. The coding of the words of local origin was inspired by using the Löw-Wiebach (2005) scoring system (Table 5.6), which was simplified and adapted to the present study. The reason for choosing this particular coding system is due to similarity of the data analysis she successfully performed on Scottish community in Aberdeen. A similar coding technique was performed in McGarrity’s study (1998), where frequencies of knowledge and use were found among Aberdeen speakers were similar to those found in Löw-Wiebach’s (2005) study. This system allows me to analyse participants’ awareness of the local variety spoken

⁷ Doric is a rural dialect spoken in the area of Aberdeen, specifically in the Grampian region (Löw-Wiebach, 2005; Stuart-Smith, 2008; McClure, 2002).

in Edinburgh by comparing immigrants' passive awareness against the regular active use of the items.

Table 5.6: Definitions coding system inspired by Löw-Wiebach (2005)

Overall Score	0 = no knowledge; 1 = passive knowledge; 2 = frequent use
Knowledge vs. Use Score	recode 0 = 0; 1 (passive knowledge); 2 (active knowledge)
Knowledge Score	recode 0 = 0; 1 (active or passive)
Use Score	recode 0, 0 (no or passive knowledge); 1 (any level of active knowledge)

5.6.3 WLO data presentation

The coding of the WLOs was inspired by Löw-Wiebach's (2005) scoring system (Table 5.7), which she used for both native and non-native samples. The reason for choosing this particular coding system is due to similarity of the data analysis she successfully performed on a Scots-speaking community in Aberdeen. McGarrity (1998) also found similar frequencies of awareness and use among Aberdeen speakers, using a similar coding structure. Finally, this system allows the present study to analyse speakers' Scots WLO repertoire from different dimensions, as the scoring method enables insights into levels of WLO knowledge and everyday use in local communities.

Table 5.7: Coding system for KUWLO task based on Löw-Wiebach (2005)

	No knowledge	Passive knowledge	Active knowledge/use
Knowledge vs Use	0	1	2
Knowledge	0	1	
Use	0		1

The scoring table demonstrates how participants were scored in the subsequent analyses: for example, a participant who actively uses a WLO (active knowledge/use) would score a 2 for Knowledge vs Use, 1 for Knowledge, and 1 for Use; while a participant who demonstrates familiarity but not active use with a WLO would score 1 for Knowledge vs Use, 1 for Knowledge and 0 for Use. Dividing the scores in this manner helps with binary scoring in analysis while distinguishing between participants with active and passive knowledge.

The words of local origin used in the task were *tatties*, *pishing/lashing doon*, *(Scottish) tablet*, *neeps*, *stovies*, *dreich*, *haar*, *braw day*, *blowing a hoolie*, and *jam pieces*. *Pishing doon* and *lashing doon* are treated as the same WLO due to their interchangeability - both words are used in Edinburgh and across wider Scotland, and they share the same meaning. The knowledge vs use data are displayed in Table 5.8 for the immigrant Slovak participants, and Table 5.9 for the native Scottish participants. The dark grey areas in the tables represent active WLO use, the light grey areas represent passive WLO knowledge, and the white areas no familiarity at all. The manner of this presentation allows non-binary data to be shown in a clear picture with defined dark and light grey areas.

Table 5.8: KUWLO task results for immigrant Slovak participants

ID	Pishing/Lashing doon					Dreich (rainy day)	Haar (mist)	Braw day (nice day)	Blowing a hoolie (blowing a gale)	Jam pieces (jam sandwiches)
	Tatties (potatoes)	(raining hard)	(Scottish) tablet	Neeps (turnip)	Stovies					
Barbora	2	2	2	2	2	1	1	0	0	1
Lenka	2	2	1	2	1	2	2	0	0	1
Martina	1	1	1	1	1	2	2	1	0	0
Kristina	1	1	2	1	1	1	0	1	1	0
Marta	1	1	2	2	0	1	0	1	0	0
Michaela	1	2	1	1	1	0	0	1	0	0
Zita	1	1	0	1	0	0	2	1	1	0
Viera	1	0	1	1	1	0	0	1	1	0
Laura	1	1	1	1	0	1	0	0	1	0
Simona	2	1	0	1	1	0	0	1	0	0
Anna	1	1	1	1	0	0	0	0	0	0
Julia	1	1	1	0	0	0	0	0	0	1
Stela	1	2	1	0	0	0	0	0	0	0
Izabela	1	0	1	0	1	0	0	0	0	0
Matilda	1	0	1	0	0	0	0	1	0	0
Zora	1	1	1	0	0	0	0	0	0	0
Gizela	1	1	0	1	0	0	0	0	0	0
Vilma	1	1	0	0	0	0	0	0	0	0
Helena	1	0	0	0	0	0	0	0	0	0
Diana	1	0	0	0	0	0	0	0	0	0

Table 5.9: KUWLO task results for native Scottish participants

ID	Pishing/Lashing doon					Dreich (rainy day)	Haar (mist)	Braw day (nice day)	Blowing a hoolie (blowing a gale)	Jam pieces (jam sandwiches)
	Tatties (potatoes)	(raining hard)	(Scottish) tablet	Neeps (turnip)	Stovies					
Agnes	2	2	2	2	2	1	2	2	1	2
Kirstine	2	1	2	1	2	2	2	2	1	2
Leslie	1	2	2	1	0	2	1	2	2	1
Sorcha	1	2	2	1	2	2	2	1	0	1
Lorna	2	2	2	1	2	2	0	1	1	2
Emilia	2	1	2	2	2	1	1	1	1	2
Laire	1	1	2	1	2	1	2	1	1	1
Christine	1	2	1	1	2	1	1	1	1	1

5.6.4 *Passive knowledge of words of local origin*

This study's analysis of WLO awareness was concerned with whether participants were aware of each item, and the analysis encompasses any level of familiarity. For the Tables 5.8 and 5.9, explorations of dialect knowledge are concerned with differences between white and grey areas – regardless of whether the shaded areas are light or dark grey. As Löw-Wiebach mentioned (2005, p. 299), the knowledge category is somewhat less clearly defined due to the fact that immigrants might have heard of the particular word from a friend, workplace, menu, etc. Since it was not the part of the research object, the origin of participants' knowledge remains unknown in the project, and for that reason “knowledge” encompasses any level of familiarity.

5.6.4.i *Knowledge and immigrant Slovak participants*

The results show that the light grey areas seem to prevail, indicating that most immigrant Slovak participants were aware of or knew particular words, but used them only rarely at best. In terms of word knowledge, *tatties* was the most widely known word, as all immigrant participants expressed at least passive knowledge. Food items in general were more widely known than the weather-related words, as four of the top five most-known words were related to food. The most well-known weather item was *pishing/lashing doon*, as nearly all immigrant participants expressed at least passive familiarity with the term. The least well-known words, in contrast, were *blowing a hoolie* and *jam pieces*, where only four and three immigrant participants were able to recognise and define these words, respectively.

By-participant results indicated that some immigrant participants had much greater knowledge of these vocabulary items than did others. Participants Barbora (LOR = 7), Lenka (LOR = 13), Martina (LOR = 18), and Kristina (LOR = 13) each expressed at least passive

knowledge for 8 out of 10 WLO items, the highest by-participant knowledge scores of the group. In contrast, Helena (LOR = 10) and Diana (LOR = 5) shared the lowest knowledge scores, each with passive knowledge of only 1 out of 10 WLO items. Not surprisingly, high LOR seemed to be associated with high dialect knowledge scores: average LOR of the four participants with high knowledge scores (≥ 8 of 10) was 12.75 years, while average LOR of the six participants with low knowledge scores (≤ 3 of 10) was 7.75 years.

5.6.4.ii *Knowledge and native Scottish participants*

In contrast to knowledge scores for the immigrant Slovak group, WLO knowledge was near-universal for the native Scottish group. Nearly all native Scottish participants had at least passive knowledge of all vocabulary items. Only *stovies*, *haar*, and *blowing a hoolie* familiar with less than 100% of native Scottish participants, and for each of these terms only one participant was unfamiliar with the term.

Relatively few participants exhibited widespread WLO knowledge in the task. Only three participants (Leslie, Sorcha, Lorna) knew less than 100% of the terms presented, and each participant was unfamiliar with only one term. Given the consistently high knowledge scores across native Scottish participants, WLO knowledge approaches a ceiling effect and therefore becomes difficult to analyse further.

5.6.5 *Active use of words of local origin*

The KUWLO task was concerned with whether participants actively used the WLOs on a regular basis, and it therefore differentiates itself from passive knowledge in that it implied a deeper and more integral understanding than casual awareness. As a result, the scoring for WLO use, which in this study is equivalent to active use (see Table 5.6 in section 5.6.2

above), is separate from both *no knowledge* and *passive knowledge*. As a result, WLO use was generally a more restrictive measure than passive knowledge.

5.6.5.i *Immigrant Slovak participants' WLO use*

In contrast to immigrant participants' passive knowledge, active WLO use was a rare occurrence across most immigrant Slovak participants. Additionally, word knowledge was not generally an indicator of how often the words were used. For example, the most well-known word, *tatties*, was actively used on a day-to-day basis by only three participants; in comparison, *neeps* and *haar* were known by far fewer participants, but for each item three participants used the term as well. The most well-used items in the list were *pishing/lashing doon* and *Scottish tablet*, each of which were actively and regularly used by four immigrant participants.

Very few participants used more than a few WLO items: Barbora (LOR = 7 years) and Lenka (LOR = 13 years) used the most terms regularly, each with a score of 5 of 10 for dialect use. Out of 20 immigrant Slovak participants, 11 indicated no WLO use whatsoever. These results are consistent with the comments received in the questionnaire, during which immigrant Slovak participants were reluctant to fully embrace Scottish pronunciation norms due to lingering prejudice and preference for 'standardised' accents.

5.6.5.ii *Native Scottish participants' WLO use*

As with WLO knowledge, active WLO use was widespread among native Scottish immigrants, even if active use was not as universal as passive knowledge. *Scottish tablet* and *stovies* were the most-used words among native Scottish immigrants, as each term was used by all but one participant. The least-used items included *blowing a hoolie*, used by one

participant only; and *neeps*, used by two participants. While some participants found the phrases genuinely archaic, others found the lesser-used phrases distasteful due to their association with tourism and non-Scottishness. Participant Leslie described why she did not use *tatties* in everyday conversation:

Excerpt 5.18: Interview on 12 Feb 2016

Leslie I wouldn't use it in serious normal spoken English, because it's a bit too... it's a bit sort of like they would use it for tourists, a word you know, in a tourist restaurant!

In a contrasting example, other participants described how they used these terms not just regularly, but daily. Agnes outlined how *jam pieces* were part of her morning ritual, and how *neeps* regularly made their way to her weekly shopping:

Excerpt 5.19: Interview on 23 Sept 2015

Agnes I actually made two this morning for my son, he's gone to school, my daughter has a ham piece and my son has a jam piece, so yes, we use this every single day [emphasis on every], in my house. [laughs]. [It's] something that is very frequent in my house, and I grew up with a jam piece or a ham piece, or anything, but definitely pieces, I would know exactly what my child wants if they say it.

Excerpt 5.20: Interview on 23 Sept 2015

Agnes I don't really use "turnip," I use "neeps." I wouldn't even think of putting it on my shopping list, you know, if I want my messages, it would just be putting stuff in the basket, so yeah, I would use neeps a lot, and for me neeps means something I would have for my dinner.

Much as with the immigrant Slovak group, native Scottish participants varied in how much they used the WLOs. Agnes used the highest number of words regularly, with a word use score of 8 out of 10. Christine had the lowest word use score, with 2 out of 10. These scores vary despite the fact that both participants had a 100% word knowledge score – again, like the immigrant group, native Scottish participants' word knowledge score was not an indicator of word use. However, the native Scottish group differed from the immigrant

Slovak group in that all native Scottish participants, without exception, actively used the WLO terms to a degree, and there were no native Scottish participants who did not use any of the terms listed.

5.6.6 KUWLO task summary

Among both participant groups, it was apparent that passive WLO knowledge was not an indicator of regular WLO use. For immigrant Slovak participants, passive WLO knowledge was spread across participants and presented items, with some participants expressing passive knowledge of nearly all items while other participants had almost no knowledge of any of the items. However, immigrant participants' word use was quite rare, with the majority of participants using very few terms regularly, or none at all. For native Scottish participants, passive WLO knowledge was near-universal but active use varied a great deal between participants and presented items. Scottish participants' active words use therefore seemed less associated with passive knowledge, making their results more difficult to interpret from the perspective of active vs passive WLO use.

Although within-group analyses revealed some trends in the data, the lack of apparent association between passive WLO knowledge and active WLO use meant that it was difficult to determine any specific relationships between passive knowledge and active use. It is possible that not controlling for word frequency, semantic fields, or regional exclusivity may have affected results. These results will be analysed further in the discussion in the next subchapter, particularly in terms of WLO awareness and self-assessed identity.

5.7 Discussion: To what extent do Slovak immigrants evaluate L1 and L2 varieties similarly to their native Edinburgh peers?

One of the pillars of the present study was the investigation of how immigrant Slovak participants and their local peers native to Edinburgh create associations with social meanings and stereotypes towards native and non-native language use. The investigation of language attitudes was twofold: a semi-directed interview (Löw-Wiebach, 2005; Drummond, 2010) assessed explicit language attitudes via qualitative and quantitative data, while a Verbal Guise Task (Soukup, 2009; McKenzie, 2008) quantified implied language attitudes.

Data collection of language attitudes on two levels was important due to the sheer variety of attitudes and judgments that listeners hold when paying attention to a speaker, even during the first few moments of speech. In their Linguistic Stereotype Hypothesis Lambert *et al.* (1960) suggest that listeners determine their social identities in reaction to the accents and languages of the speakers they listen to, and judge varieties based on the stereotypes in accordance to their own social group. The judgments are not limited to evaluations of speech alone, but rather language attitudes fit into an existing worldview – which only adds to the depth of given attitudes. As listeners, we judge speakers based on how they pronounce words and sentences, and within moments we make decisions based not just on speakers' language varieties but even on their "ethnicity, social status, enthusiasm, confidence, intelligence, academic success and even their physical height" (Rubin, 2012; p. 12). The diversity of attitudes immigrants are exposed to encourages them to either adapt and avoid criticism, or to resist and defy it. These attitudes shape immigrants' attitudes on conscious and unconscious levels, so the present study incorporated multiple means of measuring participants' language attitudes.

5.7.1 Interview and explicit language attitudes

Scores from the interview questionnaire were used to assess explicit language attitudes across three levels: integrative language attitudes, instrumental language attitudes, and self-reported awareness of local language varieties. The results demonstrated that the immigrant participants' language attitudes on all three levels were generally similar to the language attitudes expressed by the native Scottish participants (Appendix D2), such as immigrants expressing that they were as aware of local accents and language norms as Scottish participants. These results align with prior research into explicit language attitudes (e.g. Clark and Schlee, 2010). Gardner and Lambert (1972) and Baker (1992) pointed out that these attitudes are crucial for language development, that integrative attitudes in particular may be "both cause and effect of becoming or staying bilingual" (p. 34). This context is particularly important when observing long-term bilingual immigrants, all of whom had become active members of their local speech communities as bilinguals. Integrative and instrumental attitudes would be important to achieve and maintain not just bilingualism, but to preserve speakers' part in the community. However, if these attitudes are as much the effect of bilingualism as well as the cause, then continued immersion in an L2-speaking environment should lead to a feedback loop of attitude development that stimulates motivations to both acquire and maintain local language variants. Given the context and the lengths of residence observed in the present study, the results can be interpreted to imply that immigrants' explicit attitudes had a minimum of five years to change and align with those held by their native Scottish peers.

Positive attitudes and desires to integrate seem to be strongest among immigrants who identified with their local groups (Bresnahan *et al.*, 2002). In the present study, both

immigrant Slovak and native Scottish participant groups appeared to have stronger integrative language attitudes than instrumental. The results suggested that all participants living in Scotland held attitudes to Scottish varieties and Scottish culture that indicated high levels of solidarity, but perhaps recognised that other English varieties (e.g. SSE) would have granted higher social status. These attitudes persisted despite the immediate availability of SSE as a high-prestige English variety, though in qualitative discussions many participants – and especially immigrant participants – linked “Scottish accent” with presumably non-standard varieties. In other words, for those participants who preferred to interact mainly with their local Scottish peers, to sound like them, and to gain similar perceptions on their language community, it may be understood that their choice to adapt was decided for integrative purposes (see also Carrie, 2014).

Since all immigrants in the study were living in Edinburgh long-term, they might have abandoned the practical (instrumental) reason for acquiring the language (i.e. attending language institutions). Instead, they seemed to adopt local variations for a different reason, to integrate and make a life in a new country (Regan *et al.*, 2009). Several studies support these findings. For example, Eisenstein (1982) found that high-proficiency learners who lived permanently in their host countries had acquired similar integrative attitudes as their native peers; McKenzie (2010) explored attitudes among long-term Japanese learners of English towards different varieties of English, and found that these learners mostly associate with non-standard varieties of English such as (presumably non-standard) Scottish English varieties as a means of their integration and residency. Finally, Clark and Schlee’s (2010) study found that Polish adolescents assimilated to their local community to a certain degree, favouring the standard speech varieties over the non-standard, or regional, varieties. The present study reconciles the differing results from Clark and Schlee’s (2010)

and MacKenzie's (2010) studies, demonstrating continua of language production and attitudes instead of binary choices. The present study thereby contributes to our understanding of how language learners and immigrants perceive their local language communities.

Another possible interpretation of the results is that immigrants' explicit responses to the questionnaire, as well as their claims in the qualitative responses, were made out of a conscious effort to mimic local language attitudes. This interpretation reflects a shallower manifestation of attitudes, representing a sort of deception – i.e. judging what participants thought I would like to hear, in an effort to impress me personally as a fellow immigrant or to consciously affect collected results either positively or negatively. Although the context supports the interpretation that explicit integrative and instrumental attitudes observed in testing are representative of actual attitudes (Dörnyei, 1998; Bongaerts *et al.*, 2000; Kerswill, 2006; Schlee, *et al.*, 2011), further testing was needed to confirm this for the present study. The following section discusses the results from the implicit attitudes observed during the verbal guise task (VGT).

5.7.2 VGT and implicit language attitudes

In the first part of Chapter 5, within- and between-subject comparisons were used to compare attitudes towards four accent varieties, which showed that Scottish and immigrant participants generally differed in how they evaluated the accents.

5.7.2.i Analysis of trait scores

Participants in the present study were asked to assess the guises they heard via nine individual traits, and the first analysis was based on mean evaluations of the individual

traits. The results suggest that, overall, both language groups evaluated the native speakers as more posh, elegant, and less foreign than the foreign-accented speakers, and Slovak guise speakers as more friendly and pleasant than the native guise speakers. In part, the results mirror previous findings, where the research in different cultural settings often observe that prestigious and “standard” accents receive higher scores relating to competence (e.g. see Soukup, 2009) and language quality (e.g. see Rindal, 2010) than do non-standard or minority languages (e.g. see Fasold, 1984; Lippi-Green, 2012). For example, Soukup (2009, p. 127) argues that respondents tend to give inflated scores to competency-based qualities in status-stressing and formal contexts, where desirable qualities reflect the prestige and standard-ness of the testing environment. Ferguson (2015) also notes that across the EU, “English functions as a gatekeeper controlling access to university education, public sector employment and prestigious ‘middle class’ identities” (p. 7). The association between English and higher education and/or employment thereby links particular English accents (i.e. RP/SSBE) to high prestige, which in turn further reinforces prescriptive standards of English use.

Mean evaluations of trait scores demonstrated that the Slovak immigrants rated the Scottish guise highest, followed by the Slovak non-integrated (SK -ID) and English guises, and – surprisingly – the integrated Slovak (SK +ID) guise as the lowest of all four. The results were surprising because the respondents, as at least partially integrated Slovak immigrants themselves, did not appear to exhibit in-group accent loyalty to the integrated Slovak guise (Giles and Powesland, 1975; Bayard *et al.*, 2001). The native Scottish participants, in contrast, rated the guises in decreasing order of “Scottishness”: the Scottish guise received highest mean scores, followed by the integrated Scottish-Slovak immigrant, the non-integrated Scottish-Slovak immigrant, and finally the English guise. The result for the Slovak

immigrants' guise findings were surprising from the point of view of accent loyalty, but the conclusions are supported from the perspective of formal English education. Previous studies by McKenzie and Gilmore (2017) and McKenzie (2008) observed that Japanese English language learners (ELLs) scored native English guises highly due to a combination of factors, including the perceived prestige of the accent and the participants' exposure to it through formal English instruction. Like the participants in the present study, the Japanese ELLs in the previous studies also rated the heavily-accented Japanese accent of English higher than the moderate-accented Japanese accent of English, demonstrating accent loyalty to a degree. However, standards outlined in formal English language education – that the speech or language of native speakers is generally preferable to that of non-native speakers – proved to have a greater effect on language learners' attitudes (see also Rindal, 2015).

Immigrants' negative evaluation of the SK +ID guise could also be explained by their finding it less valuable than the remaining guises. During the interview, immigrants stated that imitating an English variety other than RP, i.e. what they learned during formal instruction, made their pronunciation feel somewhat "artificial" due to imperfect imitation, which may have been a cause of anxiety and lack of confidence of the other accent variety (e.g. see Dewaele and MacIntyre, 2014). Dewaele *et al.*'s (2016) study compared 449 male and 1287 female foreign language learners on 21 items using a Likert scale to examine gender differences in emotions (enjoyment and anxiety) across foreign language learners in a classroom setting. They reported that although women showed more desire in learning a foreign language (FL) they also experienced more anxiety and self-awareness than their male counterparts, which resulted in their making more mistakes in their FL production, and recovering slowly from these mistakes due to decreased confidence in their abilities. The

result is a feedback loop that reinforces negative language attitudes. However, Giles and Coupland (1991) argue that “the evaluations of language varieties do not reflect intrinsic linguistic or aesthetic qualities so much as the levels of status and prestige that they are *conventionally* [emphasis original] associated with in particular speech communities” (p. 37-38). Focus on “correct” pronunciation in language instruction can lead to associations of prestige with the modelled accent, and as a result the process in acquiring of the social stereotypes can appear at low levels, or unconsciously (Clark and Schlee, 2010). Indeed, even in the above example from the present study the immigrant participants felt “artificial” only when attempting to produce an accent besides the one they learned during formal instruction. The sociolinguistic awareness among the present study’s adult immigrants in evaluating VGT guises in terms of the prestige traits can be expected. After all, immigrants’ previous language instruction might have placed particular emphasis on instrumental (i.e. socially mobile) themes, and traits such as *elegant*, *posh*, and *foreign* were more socially salient for immigrants than, for example, *easy to understand* or *rough*.

5.7.2.ii *Social attractiveness and prestige*

Participants’ evaluations of individual adjectives led to assessment on two dimensions of influence, labelled in the present study as *social attractiveness* (or *solidarity*) and *prestige*. The results from all participants for social attractiveness and prestige exhibited negative skewness, which means that scores were clustered toward the top end of the scale with a long “tail” of scores toward the lower end. The meaning behind this skewness suggests that both groups of participants were very forgiving with their scores overall, rating all guises relatively positively. Though this result was interesting in and of itself, it complicated statistical analysis, hence the need for normalising techniques that enabled replicable

comparative analysis. This scoring trend actually has precedent in previous research, which suggests that female participants are more likely to exhibit negative skewness to their scores. Coupland and Bishop (2007, p. 85) found in their survey of 34 accents, across 5010 participants, that “[w]omen are regularly less negative in their evaluations of both prestige and attractiveness.” Gender norms and their effect on guise evaluations were further examined in Bellamy’s (2012) study, which investigated language attitudes across Manchester and Vienna and found that “female informants are generally more sympathetic than the male informants when judging the guises they hear” (p. 129). Trudgill (1974, as cited in Bellamy, 2012, p. 130) also observed a further gender norm, that “[w]omen in our society are more status-conscious than men.” These findings suggest differences due to gender, but because the present study used exclusively female participants the actual effect of gender on participants’ scores cannot be quantified. Instead, the rest of this section examines differences between the participant groups, examining how differences in nationality and immigration status have effects on guise evaluations.

Scottish and Slovak participants evaluated the English (RP) guise similarly for both social attractiveness and prestige. The English guise, or the education standard for the immigrant participants, was deemed the least attractive but the most prestigious guise by both participant groups. Although, unlike their Scottish counterparts, the Slovak group didn’t show any strong reactions to any particular guise in terms of solidarity, they singled out the two native guises as most prestigious. This result is not surprising, as previous studies (e.g. McKenzie and Gilmore, 2017; McKenzie 2010, 2015; Rindal, 2015) found that second language learners evaluated native guises as the most prestigious. Despite the similarities in explicit attitudes between Slovak immigrants and their Scottish peers it is evident that Slovak immigrants did not appear to have acquired the implicit social

stereotypes expressed by their Scottish peers, at least for social attractiveness (see Appendix D2). Immigrants' scores for the four guises sit in the middle of the range: although there are statistically significant differences between extremes (i.e. Scottish and English guises), the difference between their mean scores is 0.37, a fraction of the Scottish participants' range of social attractiveness scores (1.9) for the same guises. Immigrants' scores for prestige had a larger difference of mean scores (0.82), but it was still rather less than the range expressed by the native Scottish participants (1.89). Taken at face value, the results suggest that Slovak immigrants did not show particularly strong reactions to the guises they were presented, though the reactions were more evident along lines of prestige and status.

However, a potential cause of this difference in variation between participant groups is the fact that immigrant participants had severe difficulties in identifying the guises. Identity scores reflected opinions on a broad level, where only very high or very low scores were associated with notable variations in guise evaluations. Guise misidentification may have hidden more subtle differences in guise evaluation that would have been associated with mid-range identity scores. Zhang (2009, p. 151) suggested that "varieties of English used in their immediate environs are often rated higher in terms of solidarity," which might explain immigrants' preference in evaluating the Scottish guise as slightly more socially attractive than the Scottish Slovak -ID guise. Taking considerations from the study from the outer circle again, Zhang found that the most heavily-accented Hong Kong variety of English was always rated lowest, but the "educated" Hong Kong accent received more positive attitudes, which as Zhang points, "is more likely to be locally recognized and [...] represent[s] the identity of Hong Kong in the future" (p. 169). Zhang's study, along with Garrett *et al.*'s (2003), and McKenzie's (2008) Japanese speakers of English, raise interesting

points in that they look at foreign-accented speech, but their definition of “foreign-accented” does not single out specific speech communities. In the present study, the two foreign-accented guises were foreign-accented speech of different English preferences – one guise integrated with local language communities, one not – and that arguably the “foreign-ness” of the accents was comparatively similar. Nonetheless, the immigrant participants in the present study gave more positive scores to the more Slovak-English accent that was not integrated with local speech communities. The present study adds to existing research by suggesting that immigrants’ preference for moderately-accented speech is not a constant across all affected accents.

Ratings for social attractiveness and prestige received additional focus in regression models that accounted for self-reported social factors in participants’ guise evaluations. The list of significant interactions for social attractiveness and prestige (presented for both language groups in Appendices C7-C10) is rather small in comparison to the total number of social factors evaluated. The most influential variables for immigrants we have found for attitudes towards the four guises were the factors length of residence, use of English with friends, and self-evaluation of Scottish accent.

Length of residence (LOR) emerged as a key factor for evaluations of both solidarity and prestige. For solidarity, the findings for immigrants suggest that the LOR had an impact on when it comes to judging the Scottish accent: the longer the participants stayed in Scotland, the stronger positive attitudes towards the Scottish accent. In terms of prestige, the analysis suggested that the longer immigrants live in Scotland the less prestigious they found the English guise. Length of stay appeared to be a significant predictor in positive attitudes among Catalan immigrant students (Ianos, 2014). Previous research has shown that the longer immigrants stay in the country, the more positive attitudes they develop

towards their host country (e.g. Regan, 2013; Moyer, 2007; Sharp *et al.*, 1973), and the less prestige is attributed towards their place of origin and/or the model variety they had previously learned (Baker, 1992; Garrett *et al.*, 2003). However, this trend appears not to have applied to all studies. Hogues and Janés (2008) also noticed increased positive attitudes among participants with longer LORs in Catalonia, although the researchers also attested that LOR generally did not affect participants' attitudes. The differences in results between this and the previous studies may stem from operationalising the LOR variable as either continuous (e.g. Ianos, 2014) or categorical (e.g. Hogues and Janés, 2008). The difference may also be due to immigrants' difficulties in guise identification, which meant that their scores did not consistently map to the correct guise.

The relationship between length of residence and language attitudes suggests that Slovak immigrants formed strong language attitudes prior to their arrival to Edinburgh. They knew RP English as the "model" language obtained via their previous language instruction (see subchapter 2.3), but most were largely unaware of the varieties of Scottish English until their arrival to Scotland. The results thus suggest that immigrants held strong positive attitudes towards RP English prior to their arrival, and negative attitudes towards Scottish accents purely due to its "difference" from RP. This trend was reversed over time spent in Scotland, with building new experiences and stereotypes.

In terms of English use with friends, the findings indicate that the more immigrants used English with friends the less positive attitudes they held towards the Scottish, English, and SK +ID guises. Immigrants' English use with friends does not necessarily imply that these friends are native to Scotland: as observed in the qualitative results, most participants said that their social circles outside of family largely consisted of other immigrants, often from a variety of countries. In these contexts, English as a *lingua franca* "is increasingly regarded as

an oversimplification of a more complex reality in which some Europeans at least are moving beyond the merely instrumental and beginning to see English as a means for performing a transnational European identity” (Ferguson, 2015, p.12). This suggests that participants’ international social networks may 1.) highlight their “belonging” to their host country, and 2.) reinforce prescriptive standards of English language use. Immigrants’ social relations and practices are often connected with their actions. Li and Zhu (2013) argue that immigrants’ actions and experiences highlight their own identities, which are connected to a particular group: “transnational identity does not entail a loss or cutting-off of contact with the individual’s country or culture of origin; far from it, as Green and Power (2005) argue, it is enhanced by maintaining contacts with one’s roots” (p. 518). As shown in other contexts, studies found that immigrants tend to express positive attitudes towards their home languages regardless of their LOR (e.g. Baker, 1992; Block, 2008; Huguét, 2006; Huguét and Janés, 2008), and international social networks could help to reinforce immigrants’ connection to their home countries even if the common language between friends is English. Schleef *et al.* (2011) suggested that the choice of a variant in study of teenage Polish immigrants was found based on immigrants’ social networks, whether they were Scottish, Polish, or mixed. Mixed networks, however, as Newlin-Łukowicz (2015) argued, are good predictors for the exposure towards native varieties. In particular, she claimed that “the degree of exposure itself can also be seen as an identity choice” (p. 341).

Both participant groups were asked to evaluate how “Scottish” they perceived their own speech to be, and this self-evaluation was a significant factor in how prestigious they found the Scottish guise. The more they perceived themselves to speak with a Scottish accent, the more prestigious both participant groups found the Scottish guise. Zhang (2009) notes that “the more local the speaker sounds, the more positively he/she will be favoured”

(p. 169). This means that speakers tend to favour accents that sound like theirs, similar to accent loyalty, on the assumption that people find comfort in familiar things. In the present study this favour was not associated with solidarity per se, but with the perceived status of the Scottish guise. For immigrants, this meant that their perceived acceptance of using Scottish varieties meant the attribution of higher prestige for other speakers of the same accent – while immigrants who considered their speech to be more English- and/or Slovak-accented considered Scottish speakers as less prestigious. This study therefore argues that participants' self-evaluation of the Scottishness of their own accent relates to their ability to self-identify with the host country's culture and its language.

5.7.2.iii Guise identification

The informants were also assessed on where they believed the speaker was from. A previous study by Clark and Schlee (2010) hypothesised that Polish adolescent immigrants would show a lack of sociolinguistic awareness in expressing judgements similar to those of their native peers. The results in the present study confirmed Clark and Schlee's findings as the immigrant participants did not identify different varieties of English as well as their native peers. The contrast between immigrants' self-reported and actual proficiency was surprising, as the immigrant Slovak participants' explicit attitudes on their own accent awareness were relatively similar to the native Scottish participants' explicit attitudes (section 5.5.6). This means that regardless of whether the immigrants are Polish teenagers (as in Clark and Schlee's study) or Slovak adults, in both cases immigrants expressed difficulties in recognising individual varieties, even to the point of distinguishing foreign from non-foreign accents. Even more importantly, the adult Slovak immigrants in the present study may have viewed their skills in accent identification to be on par with their

native Scottish peers, but in the actual identification task they had much less success than the native Scottish group.

5.7.3 Attitudes summary

Taken together, these findings demonstrated that Slovak adult immigrant women viewed the native guises (Scottish and English) as the most prestigious, but expressed greatest solidarity with guises that were most closely associated with either the guise representing their host country (Scottish) or the non-integrated guise representing their home country (SK -ID). Despite the fact that their guise identification was poor and close to chance, they still show effects that may reflect their language attitudes. With the exception of accent awareness, there is evidence that implicit and explicit attitudes were generally compatible, lending weight to participants' responses and challenging the notion that the immigrants mimicked attitudes superficially. The compatibility between implicit and explicit ratings showed that even the immigrant participants' more surprising results, such as judging the "artificial" Scottish-Slovak accented variety more negatively than all other guises, are strong and likely resistant to change (McKenzie and Gilmore, 2017; Karpen, Jia and Rydell, 2011).

For further evaluation of how identity and attitudes are reflected in the immigrant experience, the present study also examines immigrants' speech production to assess whether long-term immigrants make changes to their pronunciation compared to what they learned as English language learners (ELLs) in Slovakia. The following chapter builds on the findings discussed so far by examining production directly and linking results to immigrants' attitudes and identity.

Chapter 6: Production

6.1 Introduction

The present study incorporates production analysis as a final measure of immigrants' integration with their local language communities. Subchapter 6.2 outlines the methodology specific to production data collection. Subchapter 6.3 outlines the data preparation, and results are presented in subchapters 6.4-6.7. The discussion in subchapter 6.8 relates the results back to the research questions, and to the overall theme of establishing links between production, identity, and language attitudes.

6.2 Methodology

Production data was collected through three tasks representing different speech styles: the interview, a reading passage, and a wordlist. While identity and perception data was collected from two participant groups, the immigrant Slovak and native Scottish participants, production data collection included a third participant group as well, non-immigrant Slovak English language learners (ELLs) based in Trnava, Slovakia. The purpose of including this group was to provide a contrast against the native Scottish participants in Edinburgh, and to see how immigrants' productions compare against non-immigrants in their host and home countries.

With the multitude of tasks performed during testing some discussion of task order is necessary. Table 6.1 outlines the order for all participants, as well as which tasks applied to the different participant groups. Production data collection dictated much of the task order: the three tasks associated with production data collection were presented at the start of each session, and were typically completed within the first 90 minutes of the session. These tasks were given first so that the most intensive tasks, i.e. those that relied

most on productive skills, would be completed before the onset of participant fatigue. Later tasks were more receptive, so they were not as demanding for participants in the later stages of testing.

Table 6.1: List and order of all tasks in each testing session for Slovak immigrants (Imm. SK), native Scottish (Nat. SC) and native Slovak participants (Nat. SK).

Order	Task Name	Group		
		Imm. SK	Nat. SC	Nat. SK
1	Interview p1: Background & Accent Aim	X	X	X
2	Interview p2: Identity	X	X	
3	Interview p3: Language Education	X		X
4	Interview p4: Attitude Statements	X	X	X
5	Reading Passage	X	X	X
6	Wordlist Task	X	X	X
7	Verbal Guise Task	X	X	
8	KUWLO Task	X	X	

Production data was collected from stages 1-6, after which point the recorder was turned off and production data collection ceased. The following sections outline the production tasks in detail.

6.2.1 Interview

Previous chapters have already discussed the interview, in that the questionnaire and attitude statements ostensibly collected identity and attitude data via participants' responses. These sections were as follows:

- Participants' background, accent aim, decision to stay in Scotland, previous language instruction, and language use
- Self-assessed identity task (see subchapter 4.2)
- Language attitude statements, which were used to elicit participants' instrumental attitudes, integrative attitudes, and self-reported accent awareness (see subchapter 5.5)

However, the interview was designed with the intention of collecting data on attitudes and speech simultaneously, as the tasks encouraged participants to generate discussion on the topics provided. While participants filled out the different parts of the questionnaire by hand, the interview became a guided discussion in which participants generated casual production data in their dialogue with the interviewer.

Native Slovak (ELL) participants were asked only to complete the first section of the questionnaire, and the language attitude statements were adjusted between the two participant groups in Edinburgh (see Appendices A4-A6). The participants were asked to read aloud the questions and subsequently provide their responses while sessions were recorded. Responses from the interview elicited data for language use, identity, and language attitudes, and the recording provided data for investigating participants' vowel realisations (see Introduction subchapter 2.2). The recorded speech obtained during the task was assessed as examples of production in unscripted (or near-unscripted) speech. As a production task, its main purpose was therefore to encourage participants to 'chat' rather than feel anxious over a formal interview (Drummond, 2010). Each question or statement in the interview accounted for a topic for a discussion, particularly with the attitude statements discussed below. Participants were informed in advance that the main subject of researcher's interest was not to test for their grammar but to inquire about their cultural awareness. This was an important factor as it allowed participants to relax while talking and provided space for more opinions on the topics. Whether participants believed this information was unclear, which is why the announcement was followed by an extended period at the start of each session for purely casual conversation. It is possible that potential suspicions may have made participants more self-aware during the session, and that increased self-awareness may have led to more scripted speech. However, the differences

in pronunciation evident between the interview and more formal speech styles were enough to justify framing the interview and the least formal speech style.

The interview was individually designed for each of the three language groups, with parallel lines of enquiry to create comparable samples for each group. In all cases, the language used for the interview was English, as it was meant to prompt discussion in English. Immigrant and non-immigrant Slovak participants' English language proficiency was not directly measured; however, it was discussed prior to recording and no translation was offered. Only participants who were formally assessed to upper-intermediate or advanced levels were included in the study, whether the via formal language instruction in their home country or by means of English language courses or obtained degrees in their host country. Alternatively, immigrant participants had to indicate that they were employed in English-speaking positions in the UK for the entirety of their residence. However, no questions were asked about specific certificates or degrees of English language proficiency: as standards of English language instruction in Slovakia have been particularly variable during most participants' lifetimes (see section 2.3.2), comparing qualifications in English language proficiency would likely not have provided useful information that could be reliably assessed in data analysis.

The free conversation with each participant lasted approximately one hour, forming 30-40 minutes of usable material "to fully capture a realistic amount of differing variants" (Atkinson, 2011, p. 73; Milroy and Gordon, 2003). In terms of defining "usability," the present study collected words in stressed position in order to fully capture FACE and GOAT production. For example, the particle *no*, the conjunction *so*, and the pronoun *they* were originally included for analysis, but were ultimately excluded from the results since their "reduction of vowel to a central quality approximating to [ə] would have disqualified [them]

within the context of diphthongization” (Schützler, 2015, p. 41). As function words they don’t carry a primary stress, meaning that these words were barred from token selection in the present study.

The second and third parts of the interview, also referred to as the questionnaire, were also used to gather data on language attitudes and identities. See subchapters 4.4, 4.5, and 5.5 for further details on attitude and identity data elicitation for this part of the interview.

6.2.2 Reading passage

The reading passage was constructed to elicit production of a more formal speech style, using primarily monosyllabic words from FACE and GOAT lexical sets, including some of the same words as those in the wordlist. The transcript of the reading passage is provided in Appendix A7. The target words were embedded in the text to provide meaningful sentences. The text for the reading passage, titled “Spider and Toad,” was modified from the children’s moral story “Anansi and Turtle go to dinner” (Norfolk, Norfolk, and Hoffmire, 2007). The use of the selected text appeared to have several advantages, making it suitable for this study. All the participants found the text amusing, resulting thus in their interest to continue reading the story. At 862 words, the passage also provided space for FACE and GOAT tokens in a wide range of contexts. Finally, the more formalised structure of reading aloud meant that participants maintained a consistent speech tempo for much of the reading, allowing for easier vowel identification in subsequent analysis of the recorded speech. The variables of this study consisted of monosyllabic tokens for FACE (n=34) and GOAT (n=43) lexical sets, a total of 77 tokens in the text passage per participant. The difference in the number of tokens was due to the story being written for the pilot study (Elliott and Hall-

Lew, 2015), before the decision was made to limit tokens to monosyllabic words only. Pilot participants' responses to the story were very positive, however, so the decision was made to keep the same story in the main study despite the discrepancy in token totals. The participants were instructed to read aloud at their own pace, from a copy of the story printed on white A4 printing paper in double-spaced, 12-point, black Cambria font.

6.2.3 Wordlist

The third task was a wordlist consisting of FACE (n=31) and GOAT (n=31) lexical sets combined with LOT (n=8), THOUGHT (n=8), and DRESS (n=10) lexical distractors. The wordlist included fewer distractors than either of the two sets under investigation to keep the length of the wordlist at manageable levels. It was decided to limit the task length by reducing the number of distractors instead of the number of tokens to use in analysis (Di Paolo and Yaeger-Dror, 2011). The wordlist was designed to elicit speech in a different degree of formality to compare with the unscripted speech from the interview and the scripted continuous speech from the reading passage (Cunningham, 2008; Drummond, 2010, 2012; Labov, 2001). The items in the wordlist were carefully selected to align to the parameters for token acceptability, in order to keep the task short and the data collection as efficient as possible. The main criteria for token selection in all tasks included the following:

- Monosyllabic words
- Open (CV) and closed (CVC) syllable structures
- CVC syllables were controlled for voiced and voiceless plosives /t/, /d/, and /k/, making the onset of the target vowel easier to identify
- Primary stress

Word frequency was not considered as a variable influencing token selection while designing the wordlist task, due to time constraints; but spoken word frequency, using the British National Corpus (2007) and Slovak National Corpus (2015), used as a variable in production data analysis to assess whether frequency had any impact on production. The wordlist was prepared in and presented through PowerPoint, with each word printed in black 80-point Arial font on a separate white slide. Participants were given a 1.5-second limit to read aloud each word, and breaks were given after the 28th and 56th words. The time limit between words was also the only time during the testing session where speech tempo was quantified and controlled. The full wordlist is presented in Appendix A8.

6.2.4 Linguistic variables

The production data analysis also incorporated two variables, LEXICAL SET and FOLLOWING ENVIRONMENT, that explored the impact of different linguistic contexts on immigrants' production. The following subsections outline why these variables were chosen for the present study, and how they are assessed in data analysis.

6.2.4.i Lexical set

The FACE and GOAT vowels were chosen in this study due to their diphthongal pronunciation in Southern Standard British English (Wells, 1982) and their monophthongal realisations in Scottish Standard English (Scobbie *et al.*, 2006; Schützler, 2011, 2014, 2015). The lexical sets are particularly significant to the English varieties used in the present study, as their monophthongal realisations are “salient markers of Scottish identity,” while diphthongal realisations are more strongly associated with SSBE (Schützler, 2014, p. 130). Also significant is the fact that changes to vowel quality for the lexical sets between SSBE and SSE are highly

similar, to the point where the vowels are rarely observed separately under SSE-SSBE comparisons. For example, as diphthongs both vowels are closing diphthongs starting from a central position, and as monophthongs both are mid vowels (Wells 1982; Schützler, 2014). Results from my previous research (Elliott and Hall-Lew, 2015) also found monophthongal pronunciations among local Edinburgh-born Scottish speakers and no significant differences in the extent of diphthongisation between the FACE/GOAT lexical sets, thus confirming expectations set by previous literature.

Given their similarities in variation across SSE and SSBE, it would seem that using FACE and GOAT tokens together would be an effective way to increase the amount of data available on a single phenomenon. However, the present study continues to keep FACE and GOAT as separate variables in order to test the assumption that vowel realisations are not significantly different between the two lexical sets.

6.2.4.ii FOLLOWING ENVIRONMENT

The present study examines following phonetic environment (/d/, /t/, /k/, and open vowels) as a factor affecting vowel production. The selection of these contexts, in addition to being plosives with clear separation between vowel and following consonant, was meant to test the effects of two known phenomena affecting vowel production, pre-fortis clipping (Wells, 2008) and the Scottish Vowel Length Rule (Maguire, 2012). Pre-fortis clipping occurs when vowel production – particularly vowel duration – shifts when vowels precede a voiceless consonant such as /t/ or /k/. Duration in particular is expected to shorten (*ibid.*), and vowel quality would likely become somewhat more monophthongal as a result. The voiceless following contexts in the present study, /t/ and /k/, provide contrasts against voiced following contexts in an effort to observe any effects from pre-fortis clipping.

The Scottish Vowel Length Rule (SVLR) indicates that open vowels have longer durations than vowels followed by /d/, /t/, or /k/ in particular (Watt and Ingham, 2000). Like the effects from pre-fortis clipping, any variation to vowel length would likely have effects on vowel production – in this example, that the effects may exaggerate any hint of diphthongal productions as vowel length increases. The combination of effects from the SVLR and from pre-fortis clipping influenced the choice of following environments to examine in the present study, and for this reason the four contexts are separate variables when analyzing vowel production.

6.3 Data preparation

As was briefly mentioned in section 5.2.1, Euclidean Distance (EucD) was used to represent overall vowel movement in normalised F1-F2 space between vowel onset and glide (Irons, 2007, as cited in Hall-Lew, 2009):

$$EucD = \sqrt{(F1_{onset} - F1_{glide})^2 + (F2_{onset} - F2_{glide})^2}$$

As a means of calculation from raw data, EucD alone does not account for differences due to physiology. The present study normalised formant values from production data to reduce any data variation caused by external factors, such as differences in age or physiology between participants. To normalise vowels, this study employed a normalisation technique initially developed by Watt and Fabricius (2002) and modified by Fabricius *et al.* (2009), referred to here as *mW&F*. This study converts raw Hz measurements to Bark (Bladon *et al.*, 1984) before normalising via the *mW&F* method, following the combination of vowel-extrinsic and vowel-intrinsic methodologies proposed by Hall-Lew (2009).

Thomas (2011, p. 161) presents four goals for data normalisation:

1. Eliminating variation caused by physiological differences among speakers (i.e. differences in vocal tract lengths).
2. Preserving sociolinguistic/dialectal/cross-linguistic differences in vowel quality.
3. Preserving phonological distinctions among vowels.
4. Modelling the cognitive processes that allow human listeners to normalise vowels uttered by different speakers.

This study is mainly interested in the first two goals, which as Thomas mentions are paramount when addressing variationist studies (*ibid.*). Recent studies by Clopper (2009), Adank *et al.* (2004), Thomas and Kendall (2010), Watt *et al.* (2010), Flynn (2011), and Flynn and Foulkes (2011) discuss the differences between normalisation procedures and evaluate their advantages and disadvantages.

6.3.1 Evaluation of normalisation techniques

The two widely discussed groups in vowel normalisation techniques are *vowel-intrinsic* and *vowel-extrinsic* methods. Vowel-intrinsic methods focus on normalising vowels via mathematical functions that make no consideration of context from a given speaker's other productions, while vowel-extrinsic methods utilise sampling from the speaker's vowel system (in whole or in part) to provide normalisation unique to that speaker. In general, vowel-extrinsic methods have been found to be highly effective at eliminating variation by producing more vowel overlap, yet they are more labour-intensive than vowel-intrinsic methods (Adank *et al.*, 2004; Flynn and Foulkes, 2011). Regardless of efficiency, all normalisation techniques allow for greater overlap of pronunciation despite effects from anatomical differences (Flynn and Foulkes, 2011).

Common vowel-intrinsic methods include transformation via arithmetic functions, the Bark transformation (Traunmüller, 1990) and its derivatives (e.g. Bladon *et al.*, 1984), and the Mel transformation (Stevens and Volkman, 1940). In short, intrinsic normalisation methods rely on static calculations on individual formant values and these calculations do not rely on values from any other vowel formant measurements. Since vowel-intrinsic normalisation does not require measurements from different vowel classes, vowel-intrinsic methods are more easily carried out than extrinsic methods (Thomas, 2011). Of the three vowel-intrinsic methods mentioned above, the Bark transformation (or bark-conversion, Thomas, 2011) is most popular, and is highly effective at inducing overlap between vowel formants (Adank *et al.*, 2004; Flynn and Foulkes, 2011; Thomas, 2011). The formula for Bark transformation is as follows:

$$F_i^N = 26.81 \left(\frac{F_i}{1960 + F_i} \right) - 0.53$$

Where F_i represents the formant value, and F_i^N represents the (bark-converted) normalised value. Bladon *et al.* (1984) offers a modification to the Bark transformation that was developed specifically for female participants' speech:

$$F_i^N = 26.81 \left(\frac{F_i}{1960 + F_i} \right) - 1.53$$

As the present study uses exclusively female participants in its sample, the modification by Bladon *et al.* (1984) was strongly considered for this study. As further evidence to its suitability, Flynn and Foulkes (2011) found that, among other vowel-intrinsic techniques, Bark transformation was the most effective modification at providing vowel overlap, a key feature for this study.

In contrast to vowel-intrinsic methods, vowel-extrinsic normalisation methods rely heavily on speakers' productions across other vowels, ideally across measurements of the

entire vowel system (Thomas, 2011). Common methods include Lobanov’s (1971) technique, Nearey’s (1977) technique, and the Watt and Fabricius (2002) method, or *W&F*. Lobanov’s and Nearey’s techniques calculate per-speaker means and standard deviations across all values on the selected formant values, typically only F_1 and F_2 for most vowel-extrinsic calculations. The *W&F* method calculates means from formant values for specific reference vowels /i/, /a/, and /u/, for the calculation of centroid reference S . This focus on specific “points” in the vowel chart makes *W&F* a more efficient normalisation tool than the Lobanov and Nearey techniques, as it does not necessarily require a full range of vowel production data from each participant (Flynn and Foulkes, 2011; Flynn, 2011; N. Flynn, personal communication in April 2017). In addition, *W&F* is exceptionally effective at providing mutual points of reference that demonstrate overlap between similar vowels from different speakers, more so than most other vowel-extrinsic methods (Flynn and Foulkes, 2011). The present study enjoys an enormous benefit from this overlap, as the focus of its analysis is on selected vowels instead of a wide vowel range for each participant. Due to its economy and effectiveness, *W&F* holds several advantages over other vowel-extrinsic methods for formant normalisation in this study.

The original formula for *W&F* (2002) is, in essence, a mean of formant values from the three most extreme spots in each participant’s vowel envelope:

$$S(F_i) = \frac{F_i(i) + F_i(a) + F_i(u')}{3}$$

Where $S(F_i)$ is the centroid calculation for a given formant level (i.e. F_1 or F_2), and $F_i(i) + F_i(a) + F_i(u')$ is the sum of mean formant values for [i], [a], and [u’], respectively. Each participant receives two S values, one each for F_1 and F_2 . Once S is calculated, the normalisation on formant values is conducted by dividing the raw formant values by S :

$$F_x^N = \frac{F_x}{S(F_x)}$$

Through this calculation, normalisation is calculated for target vowels by applying a centroid figure obtained from reference vowels.

Since its initial development, *W&F* has seen modifications and improvements. Fabricius *et al.* (2009) provided a modification (*mW&F*) in response to observations that the original formula can skew normalisation results for open vowels (Flynn and Foulkes, 2011). The original formula relies on the idea that the lowest point of the vowel space does not significantly differ in F2 from the centre point. In cases where it does (e.g. in non-native speakers or non-standard speech communities) the calculation may skew results when /a/ reference point creates a non-symmetrical vowel envelope (Fabricius *et al.*, 2009). This modification changes the calculation $S(F_2)$ to a mean of [i] and [u'] vowels only:

$$S(F_2) = \frac{F_2(i) + F_2(u')}{2}$$

Fabricius *et al.* (2009), Watt and Fabricius (2002), and Flynn (2017) also noted that formant values for [u'], as a highly closed and back reference vowel, could be extrapolated from other formant values:

We can justifiably assume...that the speaker's closest, backest possible vowel has an F2 exactly equivalent to its F1 frequency. Thus, F1 and F2 of [u'] are (a) equal to the average F1 value for FLEECE for a given speaker, and therefore (b) exactly equal to one another.

Watt & Fabricius, 2002 (p. 164)

In other words, values for [u'] can be described in terms of values of [i] (Flynn, 2016):

$$F_1(u') = F_2(u') = F_1(i)$$

If we apply these substitutions to *mW&F*:

$$S(F_1) = \frac{F_1(i) + F_1(a) + F_1(i)}{3}$$

$$S(F_2) = \frac{F_2(i) + F_1(i)}{2}$$

Although as a result of the new calculations, *mW&F* can be successfully calculated by obtaining measures of F_1 and F_2 for [i], and F_1 for [a], making *mW&F* a highly efficient and effective vowel-extrinsic normalisation procedure (Flynn and Foulkes, 2011).

6.3.2 Combining normalisation techniques

Vowel-intrinsic and vowel-extrinsic normalisation methods both allow researchers to meet the four goals of vowel normalisation, to varying degrees (Flynn and Foulkes, 2011; Thomas, 2011). However, as outlined by Hall-Lew (2009), few studies take advantage of both techniques simultaneously, even though vowel-intrinsic and vowel-extrinsic methods are not mutually exclusive (p 136). As effective normalisation is apparent when variation between speakers is decreased, with overlap between pronunciations being ideal (Flynn and Foulkes, 2011), this study performed individual and combined normalisation techniques to determine the best route for normalisation, and to see whether combined intrinsic-extrinsic techniques had a visible effect on data plotting. Using the NORM Normalisation Suite (Thomas & Kendall, 2007), un-normalised formant values were first plotted as reference, and normalisation methods applied included the vowel-intrinsic Bark transformation; the vowel-extrinsic *mW&F* technique (with substitutes for [u']); and a combination of the two, i.e. *mW&F* on Bark-transformed formant values. Before plotting the formant values, the data were first transformed using Bark and normalised by applying *mW&F* algorithms (Adank *et al.* 2004, Hall-Lew, 2009; Lobanov, 1971).

Appendices B1-B2 demonstrate the effect of single and combined normalisation techniques on mean onset and glide formant values for Slovak immigrant speakers. Vowel-

extrinsic *mW&F* normalisation results in a much more effective normalisation particularly among formant values for GOAT vowel productions, though values for FACE vowel production exhibit further overlap as well. The combination of Bark and *mW&F* techniques results in highly normalised values, where vowel locations are consolidated but relative onset-glide differences are conserved. Though the focus of this study is on overall vowel dynamics instead of vowel location, speakers' onset locations could still influence how their vowels change over the course of FACE and GOAT pronunciation. Normalisation in this manner reduces the possibility of artificial conclusions raised more from speakers' physical differences than their cultural adaptations (Thomas, 2011).

6.3.3 Skewness and data transformation

The purpose of the present study is to examine differences between guise evaluations and vowel pronunciations between participant groups, and to find associations between the above dependent variables and other social factors. In order for the data to be as replicable as possible, the study uses common and accessible statistical tests, such as parametric tests for difference measurements (e.g. *t*-test, ANOVA) and standard regression tests for association (e.g. multiple regression). Each of these tests assumes normally distributed data – or in the case of the regression tests, normally distributed residuals (Laerd Statistics, 2015).

Early analysis of the results indicated that the data collected for both dependent variables – scores for guise evaluations, and normalised Euclidean Distance for vowel production – exhibited levels of skewness that were well beyond accepted ranges of normal distribution. (For an analysis of “normal” ranges of data distribution, see Field, 2009.) For the verbal guise (VGT) evaluations, scores were negatively skewed, meaning that the data

were heavily clustered toward to top end of the scale (i.e. 100) and a long “tail” of scores trailed toward the negative end (i.e. 0). For vowel productions, Euclidean distance (EucD) measurements were positively skewed, meaning that the productions were generally clustered around the negative (i.e. monophthongal) end, with a long tail of data extending through the positive (i.e. diphthongal) end of the scale. This skewness was clear for all participant groups: native Scottish and immigrant Slovak for both tasks, and native Slovak as well for the vowel productions. Data transformation methods were considered to make the data more normally distributed without affecting results of comparative analysis (Laerd Statistics, 2015). The methods considered are presented in Table 6.2, along with the resulting skewness and z-score measurements for each, using immigrant participants’ production data as an example.

Table 6.2: Transformation procedures and resulting z-scores on immigrant participants’ EucD (Bark-transformed and normalised via modified Watt & Fabricius method). Standard error for all procedures was 0.042.

	Un-transformed BmWF EucD	Square-root transformation	log10 transformation	Inverse transformation
Function	x	\sqrt{x}	$\log_{10}(x)$	$1/x$
Skewness	2.255	-0.035	-1.398	25.732
z-score	53.690	-0.833	33.286	612.667

To further illustrate the effects of transformation on results, Figures 6.1 and 6.2 highlight examples of how histograms differed after square-root transformation, and Tables 6.3a-b demonstrate z-scores exhibited for both production data and VGT data before and after transformation. For further evidence of how skewed the raw data was, Appendices B3-B9 include all histograms as well as Q-Q plots following square-root transformation.

Figure 6.1: Data transformation example: Histograms of immigrant Slovak participants' average EucD before and after square-root transformation

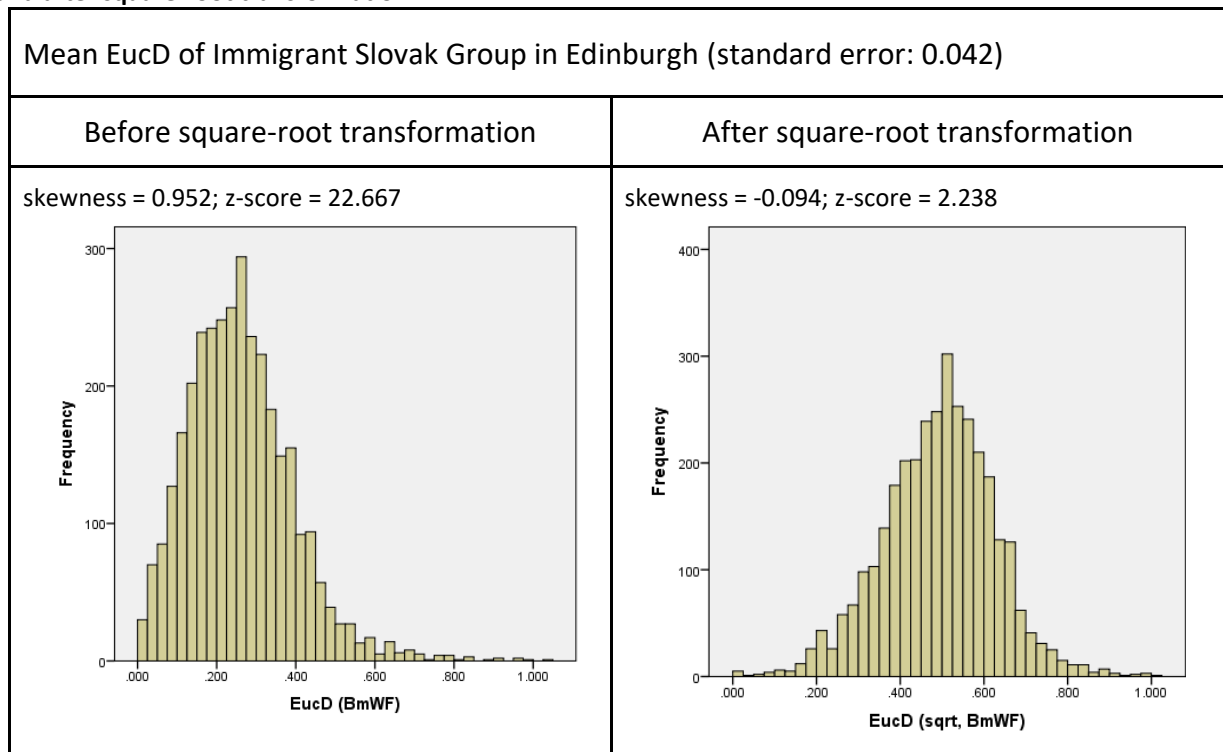


Figure 6.2: Data transformation example: Histograms of immigrant Slovak participants' average VGT guise scores for the English guise before and after square-root transformation.

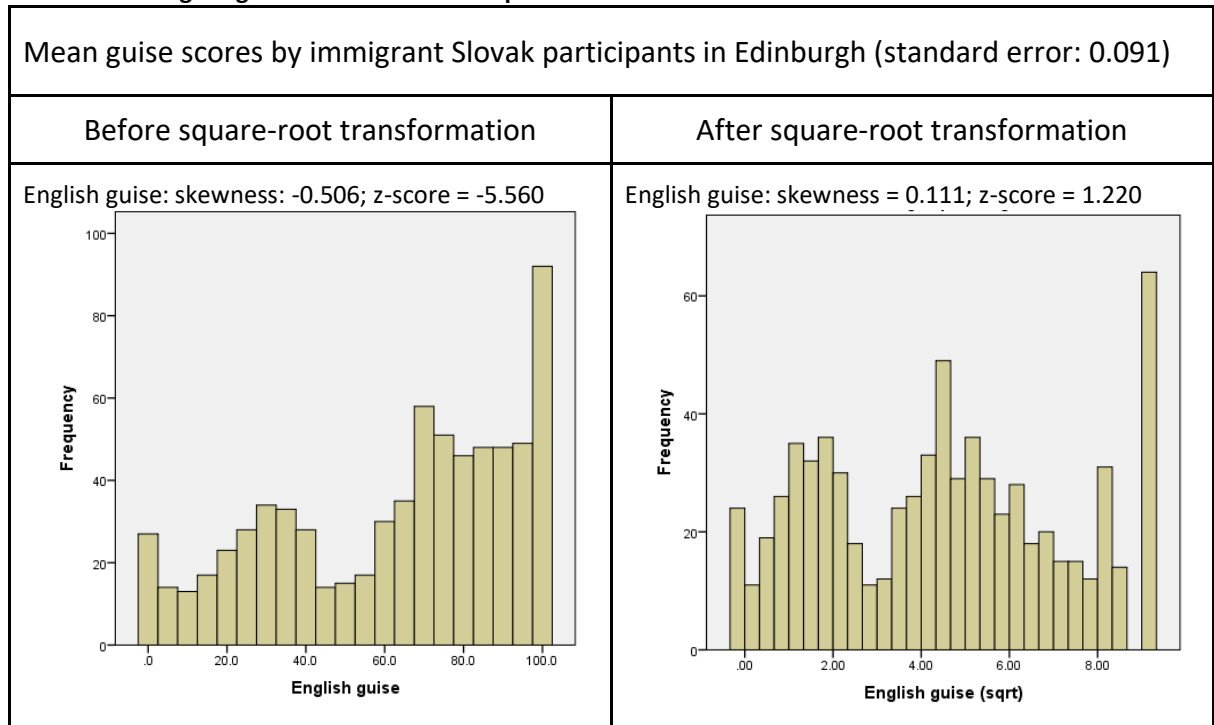


Table 6.3a: Participants' z-scores for mean vowel productions (BmW&F EucD) before and after square-root transformation

Before transformation		After transformation	
Immigrant Slovak participants in Edinburgh (standard error: 0.042)			
Skewness: 0.952	z-score: 22.667	Skewness: -0.094	z-score: 2.238
Native Scottish participants in Edinburgh (standard error: 0.063)			
Skewness: 2.194	z-score: 34.825	Skewness: 0.297	z-score: 4.714
Native Slovak participants in Slovakia			
Skewness: 0.465	z-score: 5.602	Skewness: -0.308	z-score: -3.711

Table 6.3b: Participants' z-scores for mean VGT evaluations before and after square-root transformation

Guise	Before transformation		After transformation	
Immigrant Slovak participants in Edinburgh (standard error: 0.091)				
Scottish	Skewness: -0.506	z-score: -5.560	Skewness: 0.083	z-score: 0.912
English	Skewness: -0.506	z-score: -5.560	Skewness: 0.111	z-score: 1.220
SK +ID	Skewness: -0.447	z-score: -4.912	Skewness: 0.159	z-score: 1.747
SK -ID	Skewness: -0.447	z-score: -4.912	Skewness: 0.141	z-score: 1.549
Native Scottish participants in Edinburgh (standard error: 0.144)				
Scottish	Skewness: -1.177	z-score: -8.174	Skewness: -0.363	z-score: -2.521
English	Skewness: -0.539	z-score: -3.743	Skewness: 0.260	z-score: 1.806
SK +ID	Skewness: -0.773	z-score: -5.368	Skewness: 0.260	z-score: -0.868
SK -ID	Skewness: -0.695	z-score: -4.826	Skewness: -0.108	z-score: -0.750

While this skewness does not make the data inherently weaker, the result is unexpected.

For example, previous similar studies with the verbal guise task (e.g. Soukup, 2001; Garrett, 2005) were able to present guise evaluations without reporting data transformation, and their use of parametric tests to gauge statistical significance suggest that their data were normally distributed. Research on the FACE and GOAT lexical sets in both SSE (e.g. Schützler, 2015) and SSBE (e.g. Kerswill and Williams, 2000) also made no mention of data

transformation to account for skewness. The literature therefore suggests that the overall native English speaking population is normally distributed, or perhaps that normality was not tested in these studies. As results from the immigrant group were not normally distributed, performing statistical tests on the un-transformed data could invalidate the results of many tests that rely on the assumption of normal distribution. My data are skewed, in ways that will be described, below. However, they are skewed in the same way across all participant groups, indicating that the skewness is something reliable about the data and not a measurement error. To successfully run and interpret results from my statistical tests I need to correct for this skewness, but doing so may mean that the comparability between my results and results from previous studies is unclear.

Determining which outside factor affected the results, as well as the degree to which it affected the results, is a difficult task without significant re-testing. Each participant was tested only once, and the design of the study was not intended to provide longitudinal results. As skewness is addressed rarely in previous literature, there is little support to justify claims that normal or non-normal distributions are a feature of the data; therefore, the decision to normalise data was made for reasons of compatibility in this study's replication. Parametric tests are widely used in sociolinguistic research, and can be applied to data with normal or non-normal distributions (after data transformation). Non-parametric tests are designed for use only on data with non-normal distributions, and converting normally distributed data to non-normal distributions via data transformation is not encouraged. Additionally, the study design was more focused on differences between groups and relative scores rather than absolute output. Even if the observed skewness was a feature of the collected data, the goal of the study was reliably measuring and conveying between-groups differences, and normalising data enabled the use of commonly

understood statistical tests that could be replicated in future studies. Given the fact that the skewed results were unexpected, and that absolute scores are not essential to the outcome of the project, the decision was made to perform square-root transformations on the above dependent variables. The square-root transformation procedure was chosen from the other options outlined in Table 6.2 because the z-scores resulting from this transformation were within the bounds of normally distributed data (Laerd Statistics, 2015; Field, 2009) for all participant groups. Performing the transformation would highlight relative differences in data between and within participant groups, and would enable the use of accessible and easily replicable statistical tests in the analysis. To assess what effects the transformation had on results, the main statistical analysis (i.e. standard multiple regression with random factors) was conducted on both transformed and non-transformed data to highlight differences.

The skewness exhibited by the data has implications on general data interpretation. On the VGT, the negative skew indicates that participants generally gave positive ratings for all guises, regardless of which guise was evaluated. The ratings implied that at least one additional factor – e.g. my presence during the task, unfamiliarity with the scoring system, social pressure to avoid negative judgments, even the possibility that the participants were almost exclusively “nice people” – appeared to inflate participants’ results. Data transformation normalised the distribution, meaning that the data was no longer heavily clustered at the top end of the scale. However, data transformation did not eliminate these high scores, and there were noticeable peaks at the top scores for each guise evaluation (Appendices B4, B6). Even with the transformed data the distributions are largely above the 50% mark, which means that many of the negative scores still lean more toward the positive adjectives than their negative counterparts.

For vowel production, the positive skewness indicates that participants' pronunciations were relatively monophthongal, regardless of the participant group. However, claiming that the raw productions were "monophthongs" is problematic. An exhaustive search of the literature has revealed no clear divisions between "diphthongs" and "monophthongs" in terms of Euclidean distance measurements, only relatively more monophthongal or more diphthongal vowel realisations. However, the results indicate that the degrees of difference are subtle: aside from outlier diphthongs that pull the tail out toward a high EucD value, vowels do not need massive EucD values to be perceived as diphthongs. Given the variability of both producing and defining diphthongs, the focus of this study is therefore a comparative analysis between vowel productions by different participant groups, and not an examination of absolute productions. Once again, the square-root transformation spread the clusters of the data while decreasing the length of the "tail." While this may make some productions appear more diphthongal than they actually were, the transformation revealed between-group differences that were originally largely invisible (Appendices B7-B9), suggesting that the transformation shed light on relationships between factors and production that would have otherwise been overlooked. After transformation, the "meaning" of the data was affected from a purely descriptive perspective, e.g. vowel productions by the entire sample were more monophthongal than presented in the main analysis after transformation. However, for both tests, data transformation made analysis possible with regression tests, a core element of the factor analysis.

6.4 Results: Speaker group effects

The regression model for all participants (see Appendix E2) reveal significant differences across the three language groups: native Edinburgh speakers consistently demonstrated a relatively more monophthongal quality to their FACE and GOAT vowels than the Slovak immigrants, and Slovak bilinguals in Slovakia consistently displayed relatively more diphthongal vowel quality for the same (English) vowels when compared with the Slovak immigrants in Edinburgh. The Slovak bilinguals in Slovakia used realisations which were more diphthongal out of all three groups.

Previous studies confirm partial acquisition of L2 speech norms: Mougeon, Rehner and Nadasdi (2004) investigated lexical and phonological variation among French adolescents learning English via immersion instruction in Toronto, Canada, and found that the participants varied in their acquisition of local patterns while some even refrained from using vernacular speech norms altogether. Regan (2013) and Moyer (1999) observed similar patterns, where highly fluent L2 migrant speakers of French and German shied away from using vernacular variants and instead defaulted either to the norms acquired through the previous language instruction or substituted pronunciation patterns from their L1 as a mark of their identity. Though the specific results for each study appear to point in different directions, taken together they indicate that immigrants rarely fully acquire the vernacular features of their local community. The immigrant participants in the present study appear to follow a similar trend, as they display a significantly different vowel quality from the non-immigrant groups.

6.5 ANOVA results: Stylistic effects (STYLE)

Figure 6.3: Results of two-way ANOVA between STYLE and GROUP on Euclidean Distance.
style*group effect plot

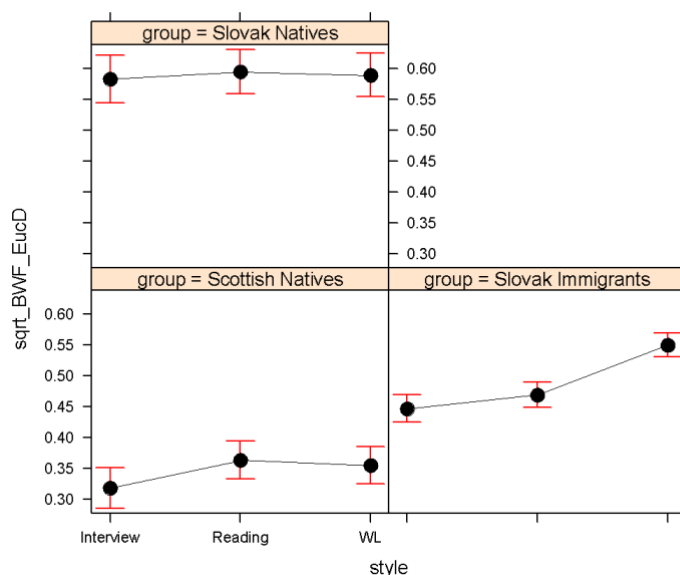


Table 6.4: Two-way ANOVA summary analysis

Effect	Df	SumSq	MeanSq	F value
STYLE	2	2.3412	1.17058	84.759
GROUP	2	1.6255	0.81276	58.850
STYLE:GROUP	4	2.3252	0.58129	42.090

Figure 6.3 shows the interaction between speech style (STYLE) and GROUP via a two-way ANOVA developed using lme4. The variables were also analysed via a regression model, the results of which are touched on here but are explained in greater detail in subchapter 6.6. Both native groups illustrated similar tendencies: STYLE was not a statistically significant factor for Euclidean Distance. Vowel realisations for both Slovaks in Slovakia and native Scottish participants had little variation across the different speech styles, in that native Slovak participants produced highly diphthongal pronunciations and Scottish participants produced highly monophthongal pronunciations regardless of style. For the immigrant Slovak group, in contrast, STYLE had the largest effect of all categorical variables (see Table 6.4). The immigrants' STYLE effect was strong enough that, when the later regression model

was run for all participants, *STYLE* still emerged as a statistically significant factor (Appendix E2).

The ANOVA and the regression model both suggested that immigrants vary their pronunciations across different styles, producing the most diphthongal realisations in the formal style with tokens in artificial contexts (*WORDLIST*) and the most monophthongal realisations in the informal style (*INTERVIEW*). The a relatively more formal style with tokens in natural-sounding contexts (*READING*) was not significantly different from the other two styles in the ANOVA, and in the regression model its coefficient was close to zero in comparison to the other two styles. In addition to results from the regression model, the results from the ANOVA supported the fact that the *STYLE* factor had a large effect on immigrants' production, $F(2, 3329) = 2.841$, Cohen's $f = 0.326$.

The interactions from the two-way ANOVA outlined in Table 6.4 further support results from the regression model developed in Rbrul: *STYLE* was the strongest single factor in the model, and the strongest interaction was *STYLE*-by-*GROUP*. The model also demonstrates that immigrants' realisations in the *WORDLIST* style were nearly as diphthongal as Slovak ELLs' productions.

Immigrants' differences in pronunciations across speech styles are emblematic of the Scots-SSE(-RP) continuum explored earlier. Aitken (1979, as cited in Lawson, 2014, p. 3) explored that in Scotland the continuum allows for changes of pronunciation in different social contexts, and Corbett and Stuart-Smith (2012) recognised that the shifts may occur to avoid using stigmatised versions in more formal contexts. The present study's stimuli did not address a linguistic continuum directly, but some of the immigrant participants' responses to questions about attitudes and perceptions (see subsection 5.5.5.ii) indicated that many clearly viewed Scottish-accented speech as stigmatised accents. The sampled immigrants in

the present study may have used a similar sociolinguistic continuum that prompted the shifting vowel realisations in different contexts.

6.6 Regression models: Social effects

This subchapter explores the interactions of linguistic and social factors with pronunciation across three language groups: Slovak immigrants, Edinburgh participants and native Slovaks in Slovakia. Each language group will be discussed here first together and later separately since individual factors, such as LENGTH OF RESIDENCE OR AGE OF ARRIVAL, could be examined only with the immigrant group. Only the statistically significant variables will be discussed.

6.6.1 Between-group effects

The overall measurements of Euclidean distance across three language groups demonstrated that STYLE and GROUP showed by far the strongest main effects in the mixed model (Table 6.4 above). The most dramatic effect on pronunciation was evident when comparing results between participant groups: Edinburgh-born participants were found to exhibit monophthongal realisations while the native Slovaks in Slovakia exhibited realisations which were diphthongal. The coefficient for the immigrant Slovak group was close to zero ($\beta = .015$), which indicated that this participant group's productions were not strongly associated with monophthongal or diphthongal pronunciations relative to the other participant groups. The model also indicated that STYLE was also a significant factor, though with less pronounced effects: overall the *INTERVIEW* was found to have shorter EucD, and *WORDLIST* had longer EucD, to similar degrees of variation. The *READING* style had a near-zero effect on EucD variation.

6.6.2 Native Scottish and native Slovak participants

Regression models for both non-immigrant groups (see Appendix E3) share some linguistic similarities despite differences in nationality. For native Scottish participants, FOLLOWING ENVIRONMENT as well as self-assessed SCOTTISH ID and EUROPEAN ID scores proved to be significant variables in the model. FOLLOWING ENVIRONMENT demonstrated that vowels with following /t/ (as in *vote*, *late*) exhibited relatively more diphthongal vowel quality, and open vowels (as in *low*, *day*) were associated with relatively more monophthongal vowel quality. Following velar /k/ and alveolar /d/ had near-zero effects on pronunciation relative to what is observed in the following /t/ and open-syllable contexts.

SCOTTISH ID and EUROPEAN ID scores for the Scottish speakers were also statistically significant, with increased identity scores for each reflecting tokens with a relatively more monophthongal vowel quality, on average – though the coefficient for the EUROPEAN ID scores was minimal, as expected. Since Native Scottish participants consistently gave low scores for the ENGLISH ID, the variable was not stratified and therefore could not be associated with monophthongal or diphthongal pronunciations.

The regression model for the bilingual non-immigrant participant group, Slovak ELLs in Slovakia, demonstrated that linguistic rather than social factors were key variables in Euclidian distance variation. FOLLOWING ENVIRONMENT proved to be the only significant variable affecting native Slovak EucD. Like the native Scottish group, where following /t/ favoured more diphthongal realisations, and following /k/ favoured more monophthongal realisations. Following /d/ and open vowels had much smaller coefficients than following /t/ and following /k/, although the coefficients for all following environment factors is quite small (coefficient < ± 0.030). The results therefore provide little evidence of any effects that following environment had on EucD variation. These trends are apparent in both non-

immigrant groups, and the effects were small enough that FOLLOWING ENVIRONMENT did not carry over as a statistically significant variable in the between-groups model.

6.6.3 Slovak immigrant participants

The mixed-effects model for immigrant Slovak participants' production (Appendix E1) revealed several statistically significant variables in the model, yet overall coefficients remained small, typically less than ± 0.050 (i.e. $\pm 5\%$ change in Euclidean distance per unit). As a result, any changes to Euclidean distance for Slovak immigrant participants were due to combinations of variables rather than any single factor. Additionally, given the number of factors included in the analysis, it was important to establish any multicollinearity within the model, and for this model participants' AGE, L2 PROFICIENCY AT IMMIGRATION, ENGLISH USE AT WORK, and YEARS OF ENGLISH INSTRUCTION were found to exhibit high multicollinearity, as the Variance Inflation Factor (VIF) for each variable was above 10. As a result, these four variables were removed from the model (Laerd Statistics, 2015) and were examined separately (Appendix E4). An examination of key findings are as follows.

6.6.3.i REMAIN IN SCOTLAND

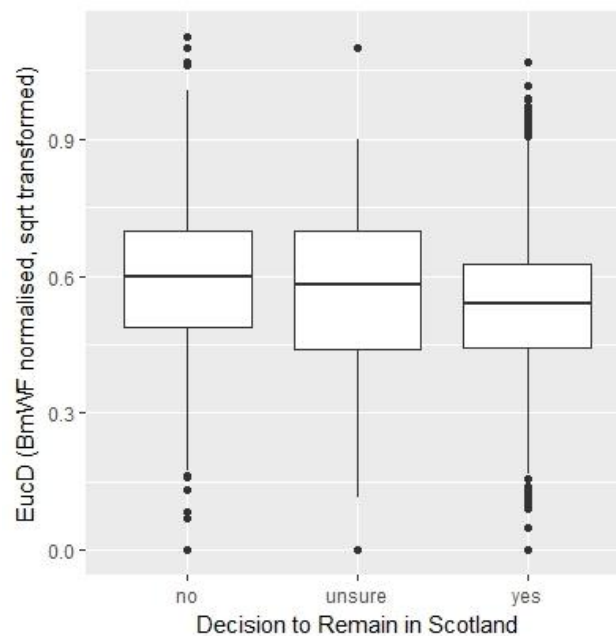
Immigrants who intended to remain in Scotland (*YES*) were found to have a relatively more monophthongal quality in their FACE and GOAT vowels. The model found that those who preferred to leave Scotland (*NO*) produced a relatively more diphthongal quality, and when compared to *YES* the effect of the variable was much stronger for *NO*. The participants who were uncertain of whether they would remain in Scotland (*UNSURE*) also had more monophthongal pronunciations, though to a lesser extent than that for *YES* participants (see Figure 6.4). This variable was an indication of how participants' intentions to live

permanently in a Scottish community were associated with trends in pronunciation (see Table 6.5), where those who voiced definite intentions – or even a neutral attitude – to remain permanently in Scotland were also predicted to have more monophthongal pronunciations.

Table 6.5: Regression model results for remain in Scotland factor

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovaks (IMM)				
Remain in Scot ($p < .001$)	Yes	-0.027	2469	0.482
	No	0.040	703	0.526
	Unsure	-0.013	158	0.506

Figure 6.4: Production results for immigrant participants' decision to remain in Scotland for the foreseeable future



6.6.3.ii ACCENT AIM

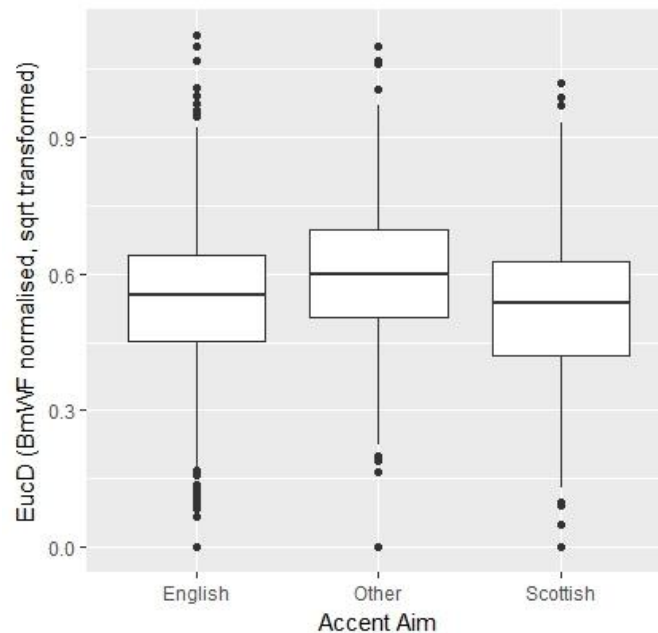
The majority of immigrant participants considered themselves to speak with an *ENGLISH* or *OTHER* accent, and the model found that they have relatively diphthongal pronunciations, with nearly equal coefficients. Immigrants choosing the *SCOTTISH* accent aim were found to

have relatively more monophthongal vowel quality, with a coefficient nearly double that of the other two options (*ENGLISH* and *OTHER*) (see Table 6.6). These results mirror those of Rindal (2010), who discovered a significant interaction effect between ACCENT AIM and SPEECH STYLE among Norwegian learners of English: participants with a British English accent aim produced significantly more ‘standard’ (i.e. diphthongal) GOAT [əʊ] variants in formal speech than those with other accent aims. The results suggest that many immigrants are aware of what constitutes a model accent for their situation, and that their choices have a measurable effect on pronunciation (see Figure 6.5).

Table 6.6: Regression model results for the ACCENT AIM factor

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovaks (IMM)				
Accent Aim ($p = .028$)	Scottish	-0.047	813	0.475
	English	0.020	2193	0.493
	Other (Neutral)	0.027	324	0.529

Figure 6.5: Production results for immigrant participants’ accent aim.



6.6.3.iii *BEFORE/AFTER 2004 VS. LENGTH OF RESIDENCE*

The *BEFORE/AFTER 2004* variable, a categorical representation of length of residence, suggested that immigrants arriving to Edinburgh, Scotland, *BEFORE 2004* (i.e. the year of accession of Slovakia, the Czech Republic, and Poland to the European Union) produced tokens with a more monophthongal quality, while participants arriving *AFTER 2004* had more diphthongal pronunciations. The coefficients for both of these factors were quite small, accounting for a 1.6% variance in EucD for each. However, the continuous *LENGTH OF RESIDENCE (LOR)* factor, which suggests that participants with longer LOR produced more diphthongal realisations, had a much greater impact on the model. The coefficient for LOR is 0.015 (see Table 6.7), which appears small but when examples are applied to the model the coefficient indicates a very strong association with diphthongal pronunciations, even with relatively minor shifts in LOR (Drummond, 2010):

$$\text{LOR} \times \text{coefficient} = \text{difference in EucD}$$

$$\text{Intercept} + \text{difference in EucD} = \text{Predicted EucD}$$

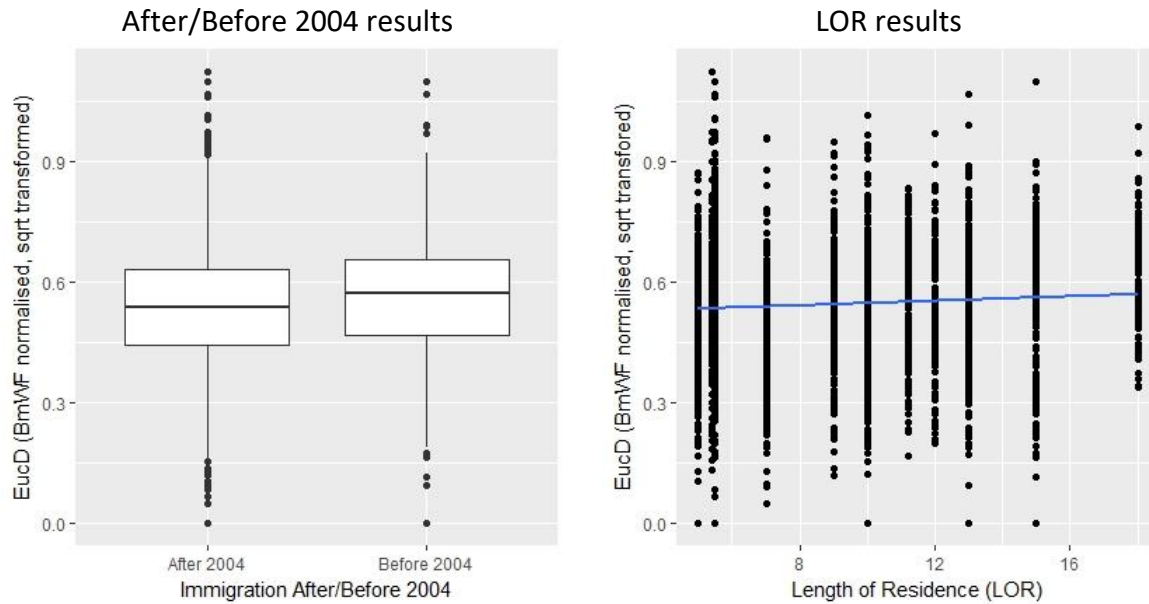
$5 \times 0.015 = 0.075$	$18 \times 0.015 = 0.270$
$0.231 + 0.075 = 0.306$	$0.231 + 0.270 = 0.501$

Therefore, immigrants' LOR had a very high potential effect on pronunciation. The coefficients for the *BEFORE/AFTER 2004* factors, in contrast, are not multiplicative: as with other categorical variables, each factor (*BEFORE 2004* and *AFTER 2004*) has its own coefficient, and that coefficient is applied directly to the model. As a result, and as expected, participants' LOR had more effect on pronunciation than whether they arrived after Slovakia's 2004 EU accession date (Figure 6.6).

Table 6.7: Regression model results for BEFORE/AFTER 2004 and LOR factors

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovaks (IMM)				
B/A 2004 ($p = .023$)	Before 2004	-0.016	1143	0.509
	After 2004	0.016	2187	0.484
LOR ($p < .001$)	continuous <i>range: 5-18</i>	0.015		

Figure 6.6: Production results for BEFORE/AFTER 2004 and LOR factors.



6.6.3.iv Identity – ENGLISH ID, EUROPEAN ID, SCOTTISH ID, and SLOVAK ID

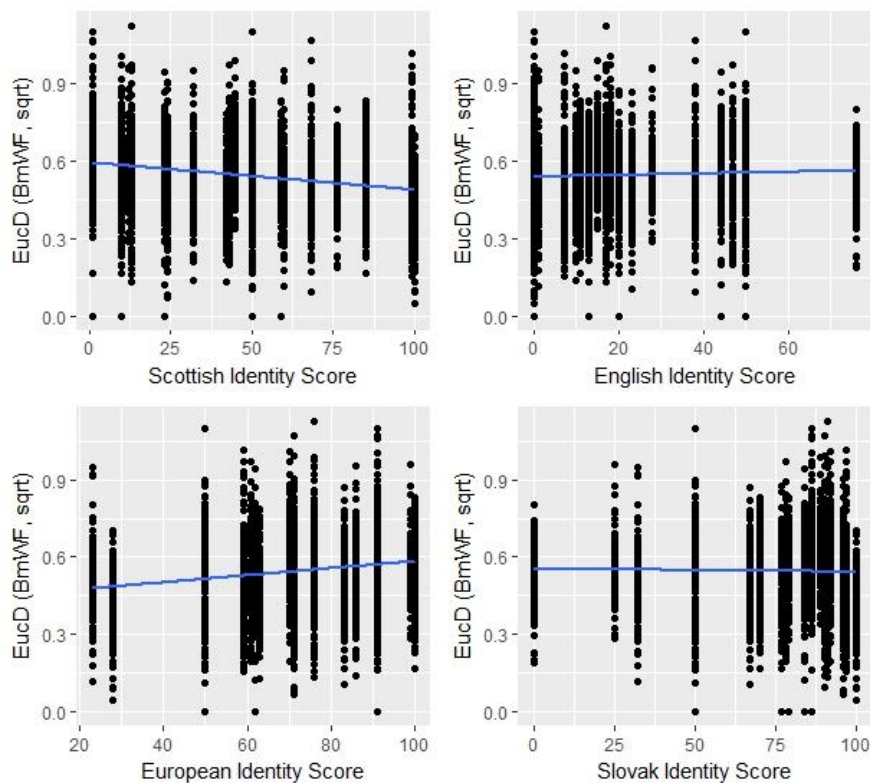
Other continuous factors had even smaller effects on Euclidean distance (coefficient $< \pm 0.010$), but the ranges were dramatically increased. For example, identity scores (see subchapter 4.3 for their discussion) were statistically significant variables in the model, but each coefficient was ± 0.001 (see Table 6.8). This had varying effects on EucD: the model suggested that high ENGLISH ID, SCOTTISH ID, and SLOVAK ID scores were associated with relatively more monophthongal pronunciations, while high EUROPEAN ID scores were associated with more diphthongal pronunciations. Despite their low coefficients the immigrants' identities still had some associations with EucD, though the low coefficients

indicated that although large differences in ID scores between participants would be associated with notable differences in pronunciation, more subtle differences in ID scores between participants would have little effect on the associations (see Figure 6.7).

Table 6.8: Regression model results for all self-assessed identity factors

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovaks (IMM)				
European ID ($p = .001$)	continuous <i>range: 23-100</i>	0.001		
English ID ($p = .002$)	continuous <i>range: 0-76</i>	-0.001		
Scottish ID ($p = .003$)	continuous <i>range: 1-100</i>	-0.001		
Slovak ID ($p = .009$)	continuous <i>range: 0-100</i>	-0.001		

Figure 6.7: Production results for all self-assessed identity factors



Of all independent variables quantifying English language instruction (i.e. AGE OF FOREIGN ENGLISH INSTRUCTION, NUMBER OF YEARS OF INSTRUCTION, PROFICIENCY LEVELS AT ARRIVAL, DIFFERENCES IN PROFICIENCY) the only statistically significant variable in the model was Slovak immigrants' age at which they began formal English language instruction (see Table 6.9). The model suggested that participants who began instruction later in life produced realisations with shorter EucD, indicating high associations between diphthongal pronunciations and participants who began instruction at an early age. Though the effect is small (coefficient - 0.004) the variable is continuous, and the model suggested that participants who began English instruction in adulthood produced a relatively more monophthongal vowel quality (see Figure 6.8).

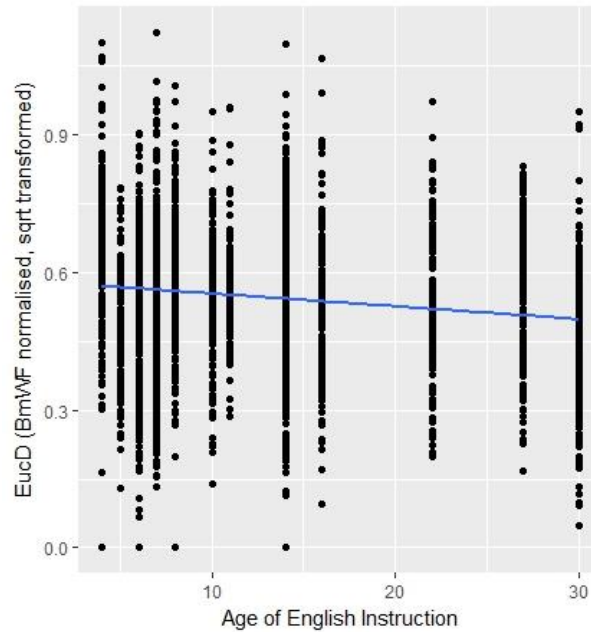
Large differences in self-assessed English proficiency levels between immigration date and the time of testing, for variable PROFICIENCY DIFFERENCE, correlated with a relatively more diphthongal vowel quality. However, the coefficient is quite small (coefficient < ± 0.001), so its effect on the model is minimal.

The amount of English language instruction (YEARS OF ENGLISH INSTRUCTION) was removed from the model due to multicollinearity. This factor was further examined via a secondary regression model, explained in greater detail in section 6.6.4.

Table 6.9: Regression model results for age of English instruction

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovaks (IMM)				
Age of Engl Inst ($p < .001$)	continuous <i>range: 4-30</i>	-0.004		

Figure 6.8: Production results for immigrant participants' age of first English instruction.



6.6.3.vi *LEXICAL SET*

All regression models (Appendices E1-E3) confirmed that the FACE and GOAT lexical sets were not significantly different from one another with respect to EucD measures for any participant group, and this result was consistent both between and within groups. The results were consistent with earlier findings by Watt & Milroy (1999), who noted that FACE and GOAT vowels are traditionally defined as “mirror images” to each other (p. 32). One of the few key differences between FACE and GOAT vowels is the fronting of GOAT vowels, which was not under observation in the present study. For the purposes of this study, LEXICAL SET did not have a significant main effect on the data, and any effects to EucD on either FACE and GOAT tokens suggests a trend on the data as a whole.

6.6.3.vii *Statistically non-significant factors*

For all participants, AGE and SPOKEN WORD FREQUENCY were not statistically significant factors in the primary regression model, i.e. in the between-groups model and in each participant

group's model.⁸ Table 6.10 outlines additional non-significant factors in the primary regression model for production.

Table 6.10: Statistically non-significant factors ($p > .05$) in the primary regression model for EucD, by participant group.

Participant group	Factor	Factor type
Immigrant Slovak participants in Edinburgh	English proficiency at testing	continuous
	Age of arrival	continuous
	Lexical set	categorical: FACE / GOAT
	Following phonetic environment	categorical: d / k / t / #
Scottish participants in Edinburgh	Self-assessed English ID	continuous
	Speech style	categorical: interview / reading / wordlist
	Following phonetic environment	categorical: d / k / t / #
Slovak ELLs in Slovakia	Years of formal English instruction	continuous
	Speech style	categorical: interview / reading / wordlist
	Lexical set	categorical: FACE / GOAT

6.6.4 Secondary regression model

Much like the secondary regression model for the verbal guise task (section 5.4.8), the items that were removed from the original model due to high multicollinearity were examined in a secondary regression model. To examine these factors further, an additional multiple regression model was created with PARTICIPANT and WORD as random intercepts. For the immigrant participant group, items removed from the original production model were AGE, L2 PROFICIENCY AT IMMIGRATION, ENGLISH USE AT WORK, and YEARS OF ENGLISH INSTRUCTION, and there were no items removed from the native Scottish participants' production model. However, this secondary analysis also includes results from the lexical recognition task as factors: summary scores for each participant for PASSIVE AWARENESS and ACTIVE USE of the items presented in the lexical recognition task. Therefore, two secondary production models were

⁸ For immigrant Slovak participants, AGE was removed from the main model due to multicollinearity with other factors, instead of being found statistically non-significant. The AGE factor is re-examined in the secondary regression model, see section 6.6.4.

created, one for the immigrant Slovak participants and one for the native Scottish participants. The decision to examine results from the lexical awareness task in a secondary model was chosen for reasons of expediency: the analysis of the KUWLO task in the present study came well after analysis of production, so it was selected for analysis in the smaller secondary model rather than providing new analysis and re-assessing the entirety of the larger primary regression model.

6.6.4.i *Immigrant Slovak participants*

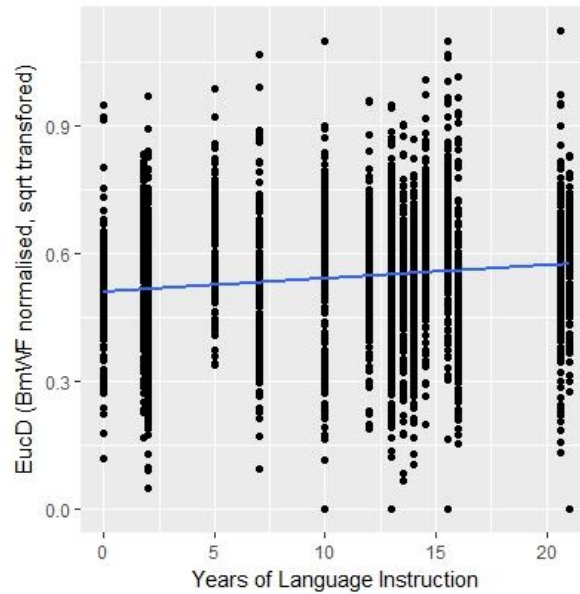
As was also the case in section 5.4.8, variable ENGLISH USE AT WORK is not included in this secondary analysis because nearly all participants reported 100% use of English at their place of employment ($\bar{x} = 93.5$). The results of the analysis are in Appendix E4.

The results indicated that YEARS OF ENGLISH INSTRUCTION, PASSIVE AWARENESS, and ACTIVE USE were statistically significant factors in the secondary model. For YEARS OF ENGLISH INSTRUCTION, the coefficient (0.003) indicated that immigrant participants with increased years of English instruction were associated with relatively more diphthongal pronunciations (see Figure 6.9). However, the association is very weak, with the model predicting the association on a near-zero coefficient (Table 6.11). The related social factor, AGE OF ENGLISH INSTRUCTION, had a coefficient (-0.004) comparable to participants' years of instruction, indicating that in general the immigrant participants' formal English instruction had a noticeable but relatively minor effect on their present-day pronunciation.

Table 6.11: Regression model results for years of English language instruction

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovak participants				
Years of Inst ($p = .034$)	continuous	0.003		

Figure 6.9: Production results for immigrant participants' years of English language instruction

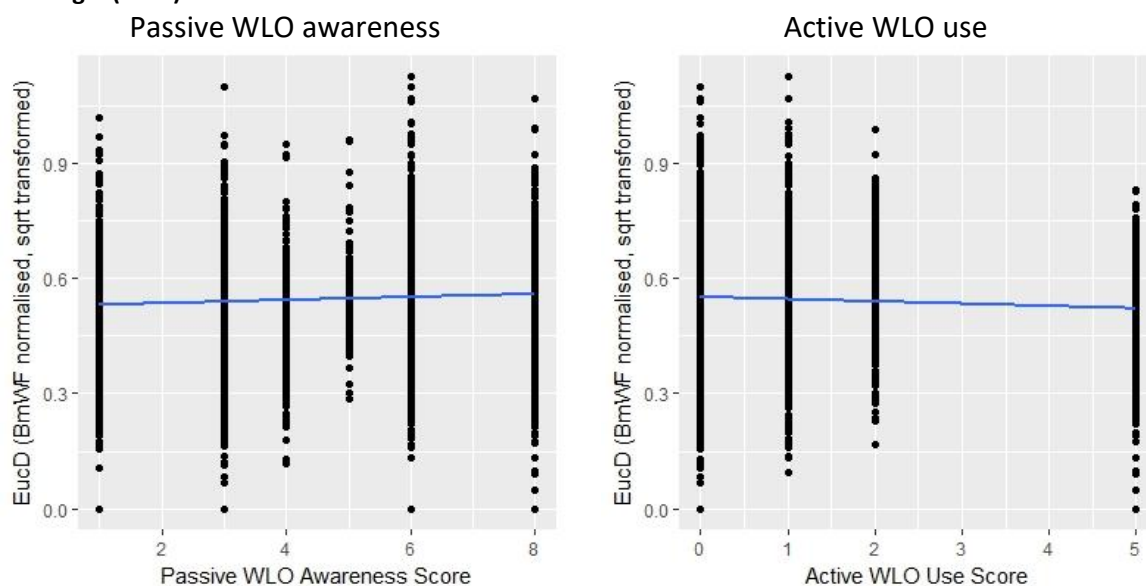


The factors derived from the lexical recognition task, *PASSIVE AWARENESS* and *ACTIVE USE*, were both statistically significant in the model ($p < .05$), though they had opposite associations (see Figure 6.10). Immigrant participants' increased *PASSIVE AWARENESS* was associated with relatively more diphthongal productions (coefficient = 0.010), while increased *ACTIVE USE* was associated with relatively more monophthongal productions, and with a stronger association (coefficient = -0.017). These associations confirmed the results (in Table 6.12) suggested by the lexical recognition task: many immigrant participants were aware of the lexical items without using them regularly, but this was particularly true of those who demonstrated attitudes that suggested resistance to integrating with Scottish culture. In contrast, immigrant participants who noted regular use of more lexical items were generally also those who exhibited high levels of solidarity with local language communities.

Table 6.12: Regression model results for years of English language instruction

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovak participants				
Active Use ($p = .036$)	continuous	-0.017		
Passive Aware ($p = .038$)	continuous	0.010		

Figure 6.10: Production results for immigrant participants’ passive awareness and active use of words of local origin (WLO)



6.6.4.ii Native Scottish participants

Native Scottish participants’ secondary production model focused almost exclusively on the results from the lexical awareness task. In an effort to mimic the immigrants’ secondary model as closely as possible, the native Scottish participants’ secondary model included as many applicable factors as possible without adding any further ones – in this case, AGE, PASSIVE AWARENESS, and ACTIVE USE (Appendix E4). However, all of these factors were not statistically significant factors ($p \geq .05$) in the secondary regression model. Therefore, these

results suggest that dialect awareness or use among native Scottish participants were not associated with differences in FACE and GOAT vowel production.

6.7 Post-hoc analysis: Testing possible sources of extraneous variation

The present study considered English language instruction recordings and L1 production as potential sources of variation that were due to participant selection and study design rather than social factors outlined by the research questions. These examinations are separate from the main analysis, and serve only to assess whether the speech variation evident in the production tasks could be due to English language instruction or immigrant participants' L1. The results of the preliminary analysis are as follows.

6.7.1 English language instruction recordings – i.e. face2face

The study tested recordings from *face2face* instructional material as evidence confirming that English-language learning materials adhered to SSBE norms, demonstrating that Slovak ELLs would have had minimal and only casual exposure to Scottish standards of pronunciation before immigration to Edinburgh. A *face2face* learners' book (Cunningham and Bell, 2009) and its sound recordings were selected for this study after immigrants, Slovak learners in Slovakia, and Slovak teachers of English recommended it as a resource for English language learning in Slovakia. Throughout the exercises included in the book, nearly all example recordings represent SSBE, a variety of English pronunciation that often serves as a model example for foreign language learners. The recordings selected for this study consisted of scripted Received Pronunciation-like speech, with female speakers reading short sentences and passages either alone or in dialogue. Vowel selection criteria were the same as they were for the participants' data: one-syllable content words ending in /d/, /k/,

/t/, or open vowels. As with the Slovak corpus data, 20 tokens each of FACE and GOAT lexical sets (Wells, 1982) were elicited. Formant values were then subjected to Bark and square-root transformations (see subchapter 6.3): in this case, the purpose for doing so was for sake of consistency, so that normalised and transformed data would not be compared against un-normalised and un-transformed data. The data was compared with the Slovak immigrants' and native Slovak ELLs' Euclidean Distance (EucD) measurements.

Results indicate that mean EucD for both FACE and GOAT lexical sets were quite high, producing English vowels that were even more diphthongal than those for the native Slovak group (see Appendix E5). As the *face2face* series represents English-language educational material readily available for Slovak ELLs, the results suggest that English education in Slovakia teaches highly diphthongal productions of FACE and GOAT. These results provide evidence that immigrant Slovaks' exposure to and inclinations to produce more monophthongal FACE and GOAT variants are more likely associated with their peers and colleagues in their host country than with their previous formal education in Slovakia.

6.7.2 L1 production (Slovak National Corpus)

Immigrant participants' productions of Slovak were considered as part of the analysis. At the end of each testing session with the immigrant group, each participant was asked to read a few words in Slovak, during which they would produce words ending in *-ej* and *-ou/-ov*, as discussed in section 2.2.2. However, after consideration the data appeared to present several problems in its implementation: the Slovak-language tokens were far fewer in number than the English-language tokens, which would cause severe differences in statistical power. The Slovak-language tokens were also collected without any "priming" at the end of a lengthy English-language session, which might produce inter-language effects,

i.e. there was no casual discussion in Slovak before the task to increase participants' comfort and to establish familiarity of using the language with a tester, as that was for English. A few participants indicated that they would not be available for future sessions, which meant that further tokens could not be produced at a later date. To prevent imposing artificial barriers to equal comparisons, L1 tokens were collected from the Slovak corpus instead of from the immigrant participants themselves.

Tokens from the Slovak corpus (Slovenský Národný Korpus, 2015) were selected from the speech of university-educated female speakers, aged 20-50, and recordings were of spontaneous (i.e. unscripted) speech. Forty tokens total were collected, twenty of each ending in *-ej* and *-ou*. Though Slovak analogues to TRAP [æ] and FLEECE [i:] were available in the corpus, the utterances could not be consistently mapped to specific speakers in either corpus nor the FACE2FACE recordings, making mWF vowel normalisation impossible (Flynn and Foulkes, 2011). Vowel normalisation was limited to the Bark transformation adjusted for female speakers (Bladon *et al.*, 1984). As the data exhibited positive skewness, Bark-converted EucD also underwent a square-root transformation, which in addition to making the data consistent for comparison also reduced the skewness and made the data normally distributed (see subchapter 6.3).

All corpus tokens were two-syllable content words (see Appendix A14). Though one-syllable words would have been preferred for more direct comparison to other participant groups, using one-syllable tokens in the Slovak corpus presented difficulties. For one, most one-syllable Slovak tokens ending in *-ej* and *-ou/-ov* were function words, and since tokens for other participant groups were exclusively content words this difference would have introduced a new and unwanted variable in the analysis. Additionally, the availability of one-syllable words for female speakers in the corpus heavily favoured tokens ending in *-ej*, so

excluding all but one-syllable words would have led to a serious imbalance in sample sizes for each lexical set. In light of these difficulties the decision was made to forego one-syllable words altogether, and to make a collection of two-syllable content words of equal sample sizes per lexical set.

Collecting tokens ending in *-ej* and *-ou* as FACE and GOAT analogues for Slovak-language data is a contentious issue, if only due to the complicated nature of vowel and consonant combinations that approximate the FACE and GOAT diphthongs in English. Subsection 2.2.1.iv provides a phonemic analysis of *-ej* and *-ou/-ov*, and section 2.2.2 provides a phonetic analysis and explores why these phone combinations are suitable analogues to FACE and GOAT lexical sets for Slovak ELLs. As word-final *-ov* can be realised with both GOAT-like glides and voiced fricatives different (see Introduction section 2.2.1.iv) for GOAT analogues only words with the word-final *-ou* were used in this sample. The definition of these clusters as diphthongs is in no way meant as an attempt to apply foreign sound systems in Slovak phonology, but rather to determine if immigrants' productions of English FACE and GOAT tokens would be realised as monophthongs due to L1 analogues.

Evaluations of the corpus tokens revealed that speakers produced slightly more diphthongal *-ou* realisations compared to their *-ej* realisations. However, this difference was not statistically significant ($F(1, 39) = 1.838, p = .183$). This result aligns with results for other participant groups, for which LEXICAL SET was not a significant factor in any regression models. Therefore, results for corpus and participant data can be compared directly, without separating results by lexical set.

Between-groups evaluations revealed that Slovak corpus speakers produced highly diphthongal realisations, on a similar level to the native Slovak participant group's pronunciation of English FACE and GOAT (Slovak ELLs) and to the FACE and GOAT vowels in the

FACE2FACE recordings (see Appendix E5). This confirms, unsurprisingly, that the *-ej* and *-ou* vowels are diphthongal in Slovak. Univariate tests indicated statistically significant differences for EucD between groups, with a large effect size ($F(4, 6307) = 341.148, p < .001$, Cohen's $f = .466$). Bonferroni post-hoc results indicate that the mean EucD for the Slovak corpus data is significantly different from both native Scottish ($p < .001$) and immigrant Slovak ($p = .004$) groups, but nearly indistinguishable from native Slovak ELL or FACE2FACE groups ($p > .999$). As the results indicate that mean EucD for the L1 recordings, the FACE2FACE recordings, and the native Slovak participants' pronunciation of English are nearly identical, they suggest that, outside of the influence of other factors, the results confirm that Slovak ELLs would find *-ej* and *-ou* constructions as almost perfect analogues to FACE and GOAT lexical sets. As the long-term Slovak immigrants in the study produce more monophthongal realisations, their shorter EucD appears to be more a result of interactions with local language communities from their host country than from their L1. These results support the assumption that relatively more monophthongal realisations in the speech of immigrant Slovak participants was not due to effects from L1 transfer.

6.7.3 Results summary

The preliminary assessments confirmed some initial hypotheses established in the Introduction. Vowel analysis of English-language instructional material revealed EucD values for FACE and GOAT lexical sets consistent with SSBE productions (see Appendix E5), and evaluations of the L1 corpus confirmed that *-ej* and *-ou* constructions in Slovak serve as relatively similar analogues to diphthongal FACE and GOAT realisations (see section 2.2.2). The evaluation verifies that these potential sources for extraneous variation have little effects on the overall data. However, it must be noted that it's harder to measure formants reliably

in back vowels than in front vowels as special significance is being accorded to relatively small differences in distances on the F1/F2 plane.

Regression models both within and between groups indicate that Euclidean distance levels are best modelled by combinations of factors instead of by any single variable. However, the types of factors that were statistically significant for each group were not consistent. Significant factors for immigrant participants were almost exclusively social variables. The variable that demonstrated the strongest associations in the model was LENGTH OF RESIDENCE (LOR), a continuous variable demonstrated positive correlation with EucD, meaning that immigrants with longer LORs were strongly associated with more diphthongal pronunciations. The variable STYLE (*INTERVIEW*, *READING*, *WORDLIST*) was the categorical factor with the greatest effect on the model, where the *WORDLIST* was associated with diphthongal production and the *INTERVIEW* was associated with monophthongal production. The variable STYLE was not a significant factor for either native participant group, but in the between-groups model participant group itself was a statistically significant variable in the production model. These results suggest that immigrant participants' production of FACE and GOAT vowels differs from both native groups, and that their production is affected by different variables. Incorporating data from a Slovak-language corpus corroborated these results, as differences in EucD between immigrants' English productions and L1 Slovak productions imply immigrants' productions are separate from their L1.

6.8 Discussion: To what extent do Slovak female immigrants acquire varieties of their local language community?

Acoustic analyses were performed to measure whether immigrant Slovak participants realised FACE and GOAT vowels (Wells, 1982) as monophthongs, or at least whether their realisations were relatively more monophthongal than those of non-immigrant Slovak ELLs. The results suggest that immigrants' FACE and GOAT vowel realisations were statistically different from both those of their local Edinburgh peers and from those of bilingual Slovaks who permanently reside in Slovakia ($p < .05$). This finding was supported by the pilot study and earlier work (Elliott and Hall-Lew, 2015), which found similar results among Czech and Slovak immigrants residing in Edinburgh, Scotland. Although the long-term Slovak immigrants' pronunciations demonstrated more monophthongal realisations to a degree, it is clear that their pronunciations of the lexical sets remained distinct from those of their native Scottish peers. The lack of acquiring a native-like accent, morphology or grammar among late adolescent and adult second language learners has been well reported (e.g. Abrahamsson and Hyltenstam, 2009; Adamson and Regan, 1991; Birdsong, 2007; Bongaerts *et al.*, 1995; Diskin and Regan, 2015; Drummond, 2010, 2012; Flege, 1995, 2007; Hyltenstam and Abrahamsson, 2000; Ioup *et al.*, 1994; Mougeon *et al.*, 2004; Moyer, 1999, 2007; Regan, 2013).

A key assumption in this study, that immigrant participants had minimal exposure to monophthongal variations of FACE and GOAT lexical sets before immigration, was tested during observations to determine whether examples of the Scottish accent were present in Slovak immigrants' formal language instruction in Slovakia. One potential source of the monophthongal variants was exposure to Scottish accents, especially during English language instruction. However, observations revealed that textbooks used recorded

samples from RP speakers exclusively as examples for L2 speakers, and interviewed EFL instructors from four language institutions and a university agreed that English (RP) is the accent predominantly taught and used among both Slovak and native English instructors of language in the classrooms (see also Thomas, 1999; Rindal, 2015). While American English and other English variants are evident in media available to Slovak English language learners, RP is overwhelmingly favoured in regular language education (Gumanová, 2015). In short, educational standards generally model pronunciation on speakers from the southern part of England, e.g. Oxford, the Home Counties, or London (see subchapter 2.3). Another potential source of this variant was from L1 transfer. L1 Slovak literature and the Slovak input were examined, and the analysis concluded that similar vowels <ej> and <ou> are present in Slovak and can serve as adequate analogues to the English diphthongs [eɪ] and [əʊ] for Slovak ELLs (Gregová, 2016; Král', 2005). The Speech Learning Model (Flege, 2007) indicates that language learners readily leverage existing sounds in their L1 when presented with a new phonemic inventory for their L2, or would use the closest approximants available in their L1. Given the presence of very close approximants in Slovak, especially in light of almost exclusively SSBE models of pronunciation in EFL instruction in Slovakia, Slovak ELLs would be far less likely to adopt monophthongs [e:] and [o:] as analogues to FACE and GOAT lexical sets. Thus, the evidence strongly suggests that production of the FACE/GOAT monophthongal pronunciation was a result of acquisition from local groups in the participants' host country.

6.8.1 Factor evaluations: All participants

Multiple regression models with PARTICIPANT and WORD as random effects made up the analysis of effects on pronunciation. In the between-groups analysis (see Results subchapter

6.4), the interaction between participant group and style was the strongest predictor in accent acquisition, and the style revealed a great degree of variability for Slovak immigrants only; the Slovaks in Slovakia are the most diphthongal of all groups, whereas the Scottish participant group produce the most monophthongal realisations of all three groups. These results were expected, and they confirmed the differing pronunciations expressed in Scottish language communities and in formal English instruction in Slovakia. Style/formality was also a significant factor in the between-groups model; however, on further analysis it was apparent that style was actually a within-group effect for the immigrant Slovak group only. Results for style are therefore discussed with the rest of the within-group factors in the model for immigrant Slovak participants. Meyerhoff and Schlee (2014) reported style as a significant factor for Polish immigrants, and the researchers were able to identify how variants differed across reading and conversation styles, but the effect was significant only for the low proficiency group. The present study differs from Meyerhoff and Schlee's study in that all participants currently examined are highly proficient, given that all immigrant Slovak participants have employment and English-language social networks in Scotland, yet they still exhibit distinct FACE and GOAT variation across styles.

Vowel productions for each participant group were also evaluated, and social factors were examined in individual regression models for each participant group. The following sections analyse the context and results for these within-group models.

6.8.2 Factor evaluations: Immigrant Slovak participants

There were many statistically significant social factors in the immigrant Slovak group (Appendix E1), and this section discusses the factors with greatest significant effects: style/formality, LOR, age of arrival, formal language instruction, and accent aim. The

between-group effects revealed that immigrants' variation by speech style was enough to affect overall results, so that made a good place to start for the within-groups analysis, and within-groups analysis upheld the trend in production across speech styles. These findings correspond to Thompson's (1991) and Oyama's (1976) studies, both of which reported that scripted reading speech was judged more foreign-accented than spontaneous speech. One of the reasons for this, as Piske *et al.* (2001) pointed, can be that immigrants who move abroad later in life receive less formal language instruction in their host countries than they do in their home countries, which may have an impact on their L2 pronunciations. The findings of the present study are also supported by Meyerhoff and Schlee (2014), who noted that Polish immigrants correctly pronounced (t) as a glottal stop only in the conversational style, but not in the remaining scripted styles.

Another factor widely discussed in research examining variation in SLA is participants' length of residence (LOR). Previous research has suggested that to obtain successful native-like pronunciation, one needs to be immersed in the L2 environment for at least 5 (Snow, 1983; Birdsong, 2007) or 10 years (De Keyser, 2000). However, Muñoz suggests a different perspective:

[LOR] has been considered to affect the accent of subjects whose stay in the host country has been relatively short (for example, from 1 to 8 years; see Asher & García, [1969]) but not that of subjects whose stay in the target language community has been for longer periods of time (from 5 to 15 years; see Oyama, [1978]) (2003, p. 162).

Muñoz examines the apparently arbitrary nature of studies that distinguish between "long" and "short" categories, as participants with 5-8 years' of LOR are defined as both long- and short-term immigrants between the two studies. This apparent vagueness as well as the contrast in opinions and findings represent the context of LOR's effects on accent

acquisition. Some studies found that LOR was identified as the significant factor for the degree of language acquisition (e.g. Flege and Fletcher, 1992; Flege *et al.*, 1995), others didn't find any effect (e.g. Flege, 1988; Moyer, 1999; Oyama, 1976; Thompson, 1991;).

Despite its size limitations in comparison to other L2 studies, the present study argues that although both LOR and age of arrival factors appeared to be significant predictors in accent acquisition, the effects were relatively small: in essence, the findings suggest that the participants' length of stay were less associated with participants' increased or decreased use of the vernacular variants than were individual professional and personal motivations, and identity (cf. Regan, 2013; Rampton, 2013; but see also ; Dörnyei *et al.*, 2006; Drummond, 2010, 2012; Norton, 2013). Piske *et al.* (2001, p. 197) supported this, saying that "LOR only provides a rough index of overall L2 experience," while more refined indexation depends on additional variables under investigation, such as L2 learning. Birdsong (2007), however, suggests that attempts to define "the L2 experience" do not necessarily reflect stages in language development, especially for native-like pronunciation. Birdsong found that out of 22 Anglophone late learners, only two fulfilled the criteria for native-like pronunciation. He found that the successful late learners had L2 pronunciation training as well as the high levels of motivation needed to improve their pronunciation; but so was the case with the remaining participants, who did not exhibit native-like pronunciation. He suggests that "motivation and phonetic training are necessary, but not sufficient, factors in late learners' attainment of nativelike pronunciation in L2" (p. 113). However, Birdsong's analysis offers only a critique of current limitations, and does not suggest alternatives to make up for methodological limitations or to prove the point of why L2 learners pronunciation may not fulfil the native-like criteria. He does suggest that although limited, the acquisition of vernacular features among late learners is a victory.

The amount of formal language instruction has not received much attention in research in terms of the immigrants' acquisition (Regan *et al.*, 2009); studies have mostly explored formal instruction in regard to language teachers and classrooms (e.g. Elliott, 1995). The present study touched on this issue, as more data will be necessary to determine any significance of formal instruction as a predictor of L2 foreign accent levels. In any case, formal instruction might serve as an important predictor in accent acquisition (Flege and Fletcher, 1992), since the speakers' proficiency seemed to increase with the amount of formal instruction undertaken in their host country.

Accent aim was also among the list of the factors which influence the immigrants' L2 accent acquisition. The study showed that Scottish accent aim was a significant predictor which contributed towards higher rate of monophthongal vowel realisation among Slovak immigrants. The majority of the participants reported that they were aiming for what they perceived to be an "English" accent (60%), 25% aimed for "Scottish," and 15% aimed for "other," mostly stating it as "neutral" (see Rindal and Piercy, 2013). Participants who began learning English earlier in life tended to aim more for what they consider a "proper" English accent, or the accent they learned during their formal English instruction in Slovakia.

Previous studies by Ladegaard and Sachdev (2006) and van der Haagen (1998) found that RP was the most prestigious model of pronunciation for L2 speakers. Similarly, Rindal (2010) concluded that Norwegian learners of English unfailingly chose a RP model over American pronunciation, considering the former "superior on all dimensions of linguistic quality [...] [and the] majority of the participants reported aiming towards a British accent when speaking English" (p. 251). These findings serve as an analogue to the present study, where despite the fact that all participants were long-term immigrants in Scotland, the majority of the participants still favoured an English accent over a Scottish one. Rindal and Piercy (2013)

found that vast majority of Norwegian L2 adolescent learners aiming for a native accent wished to speak with a *neutral* variety of English, which she refers to as a “transitional status of English” and one that corresponds to increasing diversity and development of globalisation. Those speakers who aimed for a “neutral” accent also said that their choice was due to their self-awareness and lack of confidence. When pressed how they defined ‘neutral variety,’ most claimed that it would be the European variety. Speaking ‘European’ would allow them to speak with an accent that is not based on a specific country, and thus would make immigrants feel that they were no longer judged based on their pronunciation. Speaking a ‘Scottish’ variety, on the other hand, immediately links the speaker to a specific country despite English being used throughout Europe.

The KUWLO task analysed participants’ integration via passive WLO awareness and active use, and later analysis determined associations between passive awareness, active use, and degree of monophthongal production. This task proved necessary to determine the effects of integration and subsequently, the L2 use and input within a Scottish community. The results suggested that speakers who have a strong desire to integrate with Scottish society and language developed higher proficiency in WLO awareness and their usage. Overall, the immigrants were generally quite aware of the meanings for the majority of the offered Scottish WLOs (70%), but their actual use of these words was somewhat limited (53%). These findings correspond to the findings of Löw-Wiebach (2005), who found that L2 speakers knew particular words either passively or actively, but their usage depended on speakers’ attitudes towards their community. Rosseel (2013) supported similar results, and found that despite high familiarity with Scottish words, L2 speakers’ active usage of WLOs was quite limited. She reported that despite high familiarity with the word *ken* (i.e. to know), “only 49% of those who said they know the word reported using it” (p. 54).

A multiple regression model suggested that immigrants with increased active WLO use were associated with more monophthongal vowel productions, while increased passive WLO awareness was associated with relatively more diphthongal productions. The results add more support to the link between immigrants' production and their integration with local language communities. The immigrant participants who were aware of but chose not to actively use WLOs were associated with resistance to local pronunciation features, but those who actively used the words were associated with productions that indicated integration with local language communities. The production model therefore strongly suggested that "integration" with local language communities was evident not just with vowel production, but with use of words of local origin as well.

Having evaluated identity, language attitudes, and production analyses directly, the last element the present work addresses is the link between the three factors. The following chapter presents a case study on two immigrant participants, where the interactions between identity, language attitudes, and vowel production are the focus of the analysis.

Chapter 7: Case study

7.1 Introduction

The previously examined results show an interesting general speech pattern emerging across Slovak immigrants. Analysis of Euclidean distance in vowel dispersion across three language groups showed that immigrants who are staying in Scotland for longer periods of time are refining their L2 speech inventories, accommodating to some of the general speech patterns of Scottish L1 speakers and diverging from the patterns of their previous English language instruction. The alternative is that the immigrant Slovak participants in the study had different L2 speech inventories from the native Slovak ELL group before immigration – though a possibility, this alternative is unlikely given the review of EFL educational standards in Slovakia since before the Velvet Revolution. The more likely picture tells us that the immigrants are accommodating to local Scottish norms in some respect after immigration, either consciously or unconsciously, although individual performance was subject to variability. This section examines the extent of that variability in the speech of two participants with widely different trends in pronunciation: Barbora, who had the most monophthongal pronunciations among all immigrant participants; and Michaela, whose FACE/GOAT realisations were among the most diphthongal.

7.2 LOR and individual performance

When examining the variation across all immigrant participants, some interesting facts emerge at either end of the continuum. For the group as a whole, the regression model found that increased LOR in Scotland correlates with more diphthongal vowel quality, which was an unexpected result (see subsection 6.6.3.iii). Barbora's LOR seemed to accurately reflect the model, as her LOR was below the immigrant Slovak participant group's mean LOR

of 9.2 years, and her pronunciation of FACE and GOAT was also more monophthongal than the rest of the group. In contrast, Michaela had some of the most diphthongal pronunciations of the group, her LOR was only 5.5 years – well below the mean, and below even Barbora’s LOR; her pattern did not reflect the result in the overall model. A possible explanation for this is gender: previous studies found that women tend to acquire lower rates of vernacular features in their speech (Regan, 2013; Moyer, 1999), but among immigrant women this result is highly contested (Drummond, 2012). However, the study was designed to eliminate gender as a factor in the analysis. Additionally, for the immigrant group, the relationship between LOR and production was relatively well described by the model. Previous research such as Regan’s (2013) notes that dramatic exceptions exist, often on a case-by-case basis, and that these exceptions appear to defy rules of LOR in particular. In the present study, Barbora’s and Michaela’s cases are intriguing as they are examples of these dramatic exceptions. Their FACE and GOAT vowel realisations represent opposite ends of the pronunciation scale, but unlike most participants LOR is not a key factor associated with their productions. These motivations prompted further investigation into the variation of their speech and lives in Edinburgh; thus, quantitative and qualitative evidence provide further information about their individual choices and lives.

7.3 Personal background

Table 7.1: Summary of Barbora and Michaela’s background

Name	Age of arrival	Age	LOR (years)	Identity	Accent aim	Remain in Scotland	Partner	Occupation
Barbora	29	36	7	100% Scottish & Slovak	Scottish	Yes	Scottish (Edinb.)	Maternity leave
Michaela	23	28	5.5	10% Scottish; 92% Slovak	English	No	Czech	Project manager

The brief picture of the two participants outlined in Table 7.1 demonstrates contrasting experiences, occupations, interests, and aims. Barbora's experience suggested one of highly successful immigration and personal integration into her host country. Barbora's professional experience began in Slovakia, where she presented herself as educated individual. She met her Scottish husband in Slovakia, and they moved to Scotland in 2008, shortly after the accession of Slovakia to the European Union, due to her husband's work. At the time of immigration Barbora had little formal English instruction, just a few years' instruction starting from age 14-15. After immigration she took an additional month of English language instruction in 2008, in an Edinburgh English learning centre.

Barbora initially worked as a customer service representative at an Edinburgh-based call centre until she changed her career and studied further to become a diet advisor. At the time of recording, she was on maternity leave from that role, but intended to return. She said she had found Scotland very welcoming and was invested in making her life in the country. Socially, she said she often meets with other Slovak immigrants in Edinburgh, although she equally has networks with local Edinburgh speakers. Her husband's family, who moved to Livingston, represented her closest social circle and the most direct impact on her language. Despite the number of years in Scotland, Barbora still felt close to Slovakia and her family there; however, her immediate social circle was largely Scottish, or other Slovak immigrants.

In contrast to Barbora's experiences, Michaela's experiences as an immigrant represent that of a practical social climber. She was a more recent economic immigrant who came to Scotland with her Czech husband, who also immigrated for economic reasons, in 2010. In Slovakia, Michaela had trained her language skills extensively, with more than 10 years' formal language instruction from the age of 8. After immigration, she saw her first job

as a care home assistant as an opportunity to improve her language skills further, and used the role to become more comfortable with Scottish accents.

Although Michaela's experience demonstrated upward social movement, her comments did not suggest that she felt integrative or emotional ties to Scotland. Her social circle, outside of her Czech husband, consisted of other immigrants from a range of countries – Michaela made mention of Filipino friends as a particular example. But most telling was Michaela's perception that her residence in Scotland is temporary. Like Barbora, Michaela claimed to keep connections to her Slovak heritage and family; however, Michaela fully intended to return to Slovakia in the foreseeable future, to return to the social circle of family and friends she left after emigrating. Michaela's comments suggest that she viewed her time in Scotland as a means of acquiring greater English proficiency and more professional skills before returning to Slovakia.

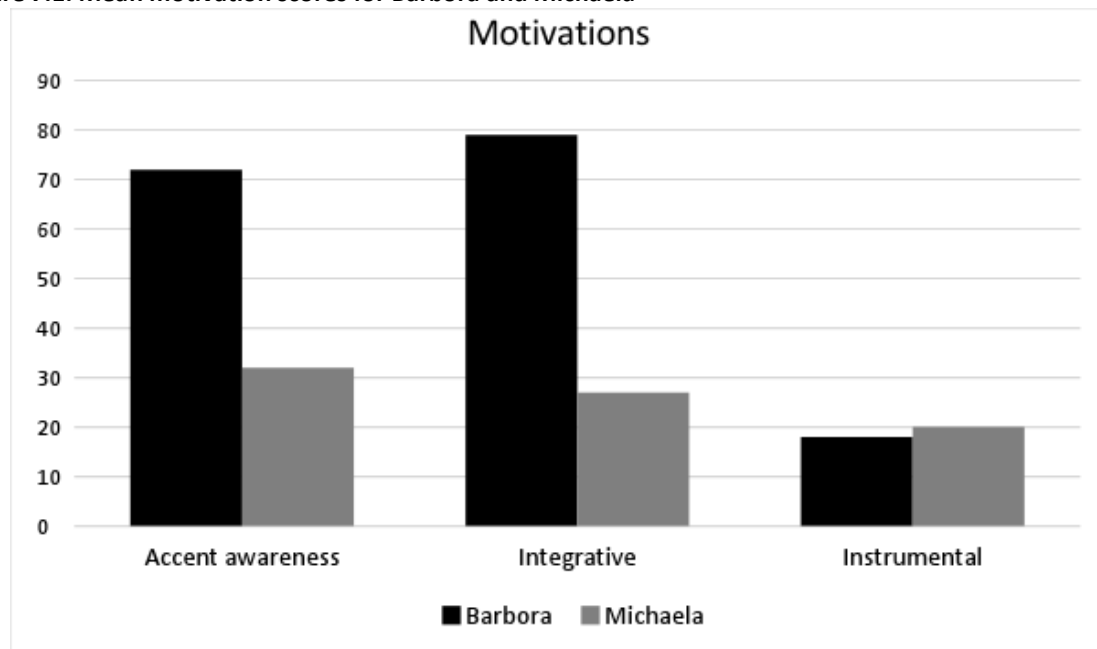
Both Barbora and Michaela were married to their husbands before their permanent arrival to Scotland. Barbora's arrival to Scotland stemmed from her husband's desire to return to his home country, whereas Michaela's motivations to come to Edinburgh stemmed from self-improvement, namely to become fluent in language and finding a well-situated work position. Professional development and social networks seemed to increase immigrants' expectations to live permanently in Scotland and to try to adjust into the local language norms.

7.4 Motivations

Mean scores for instrumental and integrative motivations (see section 5.5.5) reveal general trends in support of the participants' qualitative responses. In the case study, individual

means support these general trends. Figure 7.1 outlines mean motivation scores for Barbora and Michaela.

Figure 7.1: Mean motivation scores for Barbora and Michaela



While both participants had higher integrative than instrumental scores, Barbora’s responses were supported by other high integrative motivations. These motivations included a wish to sound Scottish (ACCENT AIM), to build her family around Scotland (DECISION TO REMAIN IN SCOTLAND), and to develop a Slovak-Scottish bicultural identity. For ACCENT AIM, Barbora said with pride that she speaks with a Scottish accent since her Scottish and Slovak family and friends frequently comment upon it. A possible reason for this is due to Barbora’s social circle and interest in Scottish varieties of English:

Excerpt 7.1: Interview on 16 Sep 2015

Barbora
LOR: 7 years

Scottish! I love Scottish accent! Love it! My Scottish accent is probably stronger than my husbands’, which is funny, I always tell him. Probably because when we came we moved to Livingston, and my parents in law they have quite a strong accent, and the neighbours and friends had really strong accents, so when I started speaking I sort of probably kept it since then, you know.

For DECISION TO REMAIN IN SCOTLAND, Barbora supported her choice with comments that suggest identity formation and high inclination to adapt into the community. She commented that although Slovak identity still stays close to her heart, her future will be in Scotland and among Scots. Barbora's strong inclination towards Scottish accent and culture provide an example demonstrating that immigrants can share very similar attitudes with native Edinburgh group of speakers. This result aligns with the results of Nguyen and Ahmadpanah (2014, p. 1218), who found that bilinguals who have a strong inclination to acquire the language of their host community subsequently associate with both home and host cultures, leading to "bicultural blending."

As examined in subchapter 7.2, Michaela seemed unwilling to adapt to the Scottish community, to acquire a Scottish accent, or to develop a secondary identity. She reported her identity as primarily Slovak (SLOVAK ID), and expressed desire to move out of Scotland back to Slovakia (DECISION TO REMAIN). She also actively shaped her own pronunciation to resist sounding Scottish (ACCENT AIM, SCOTACCENT). In terms of her self-reported identity, Michaela's identity scores clearly favour Slovak ID over all other self-identification scores. Her SLOVAK ID score was 92; the nearest runner-up was EUROPEAN ID, with a score of 70, while SCOTTISH ID and ENGLISH ID both had scores less than 20. Unsurprisingly with such self-reported identity scores, Michaela was equally clear in her DECISION TO REMAIN that she intended to move back to Slovakia in the foreseeable future. Michaela also seemed very aware of her own pronunciation, as her ACCENT AIM was *English* and she reported a very low SCOTACCENT score of 6. Although she reported higher integrative scores than instrumental scores, her comments and additional indicators of motivation suggest that she based many of her language attitudes around an association between Scottish accents and low education (see subsection 5.5.5.i for more detailed analysis).

Excerpt 7.2: Interview on 13 Nov 2015

Michaela I noticed that [Scottish accent] also depends on people's education, when I was working in care home, when I first started, so there were old people who did not have university education, or were doing like a cleaning job, their accent was really strong and then when you hear people from the offices - like with higher education, their accent is not as strong.

LOR: 5.5 years

Excerpt 7.3: Interview on 13 Nov 2015

Michaela I noticed the accent... the people that are not very educated mostly use this accent and it's kind of related to that for me so... when I hear people speak with strong Scottish accent I just think and feel like that they are not really educated.

LOR: 5.5 years

Michaela also applied this association between non-standard accent and lack of education to her own production, and for her the association was a motivator for increasing her English language proficiency.

Excerpt 7.4: Interview on 13 Nov 2015

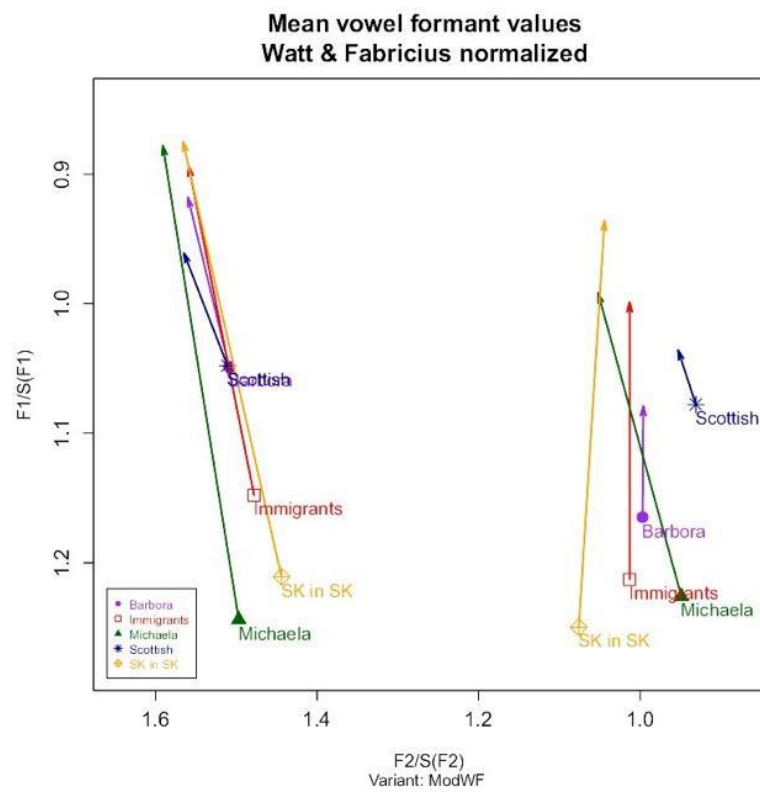
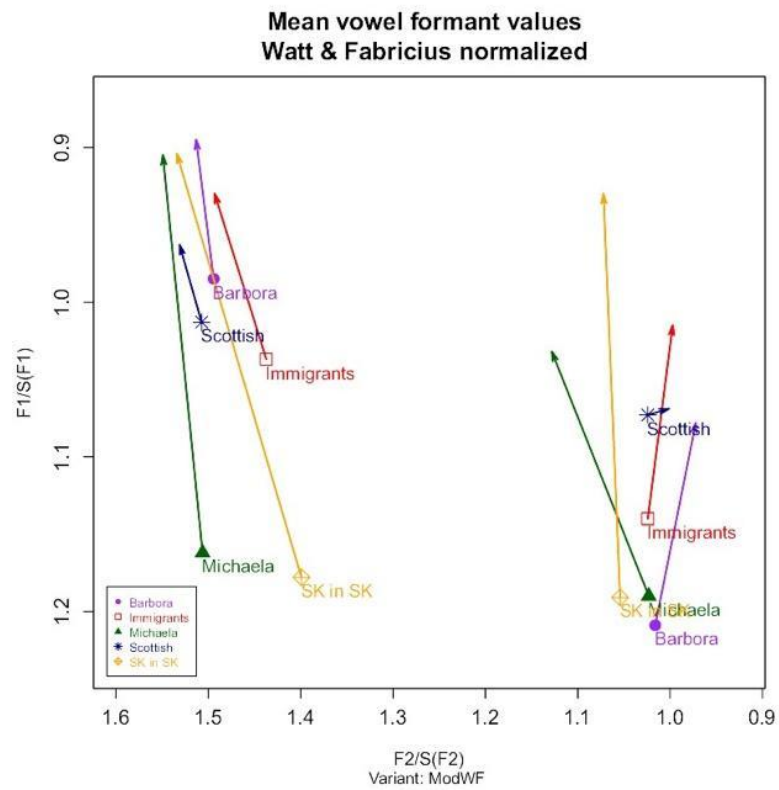
Michaela When I first started [working in Scotland] I got a job in a care home, so it was a good opportunity for me because I could speak to people and to elderly and they, they quite liked to talk to people so I could improve my English there, and some of the people that were talking to me there - I had no idea what they were talking about, so I would just smile and oh, they must think of me as stupid, so it was completely different English from what I was learning before!

LOR: 5.5 years

Combined, Michaela's indicators of motivation strongly suggest that she resisted "bicultural blending," despite the fact that she shows similar trends in her instrumental and integrative scores (though with lower scores overall) as Barbora. Michaela's integration also seemed largely motivated by appearances of class and education instead of community and family.

7.5 Production

Figure 7.2: Mean positions for FACE and GOAT vowels for unscripted speech (*INTERVIEW* style, left) and scripted speech (*READING* and *WORDLIST* styles, right)



Mean production trends (see Chapter 6) indicated key differences in speech between the native Scottish, native Slovak, and immigrant Slovak participant groups. Individual cases demonstrate the range of variation in these mean scores. Barbora's productions were more monophthongal (i.e. had shorter Euclidean distance measurements) for both FACE and GOAT vowel tokens than the overall immigrant group. In contrast, Michaela's vowel productions were more diphthongal than the mean for the immigrant participant group. Both comparisons represented statistically significant differences ($p < .001$). This section examines how their productions shifted across different styles in the task.

Figure 7.2 outlines specific differences in pronunciation in comparison with group means. Barbora's productions were more monophthongal in the *READING* and *WORDLIST* styles than her *INTERVIEW* style, a feature unique among the immigrant Slovak participant group, which perhaps indicates that monophthongal variants are a linguistic target for her in a way that they are not for the rest of the group. Her trajectory lengths and position in F1-F2 space were also similar the native Scottish participant group when producing FACE tokens, across all three tasks. However, the trajectory of her GOAT vowels shows more variability, moving parallel to and following a similar trajectory as the immigrant Slovak group, particularly for the *READING* and *WORDLIST* styles.

In comparison, Michaela produced very similar diphthongal trajectories and positions for FACE vowels as the native Slovak (ELL) participant group across all speech styles. Michaela's realisations of FACE and GOAT vowels are more diphthongal than both Barbora's productions and the immigrant group mean. However, her GOAT vowel productions showed a unique in-gliding trajectory. In terms of diphthongisation, her GOAT vowels appear to more monophthongal than the native Slovak group yet more diphthongal than the native Scottish or immigrant Slovak mean productions.

Michaela's results are consistent with her self-identified resistance against Scottish accent and cultural integration. Her productions seemed very similar to productions by Slovak ELLs who were undergoing formal English language at the time of testing. By contrast, Barbora's more monophthongal realisations seemed to be a tool for her adaptation and acceptance of Scottish language and culture. These interactions between vowel production, motivational factors, and integrative and instrumental scores are examples of how vowel production reflects attitudes toward local language communities.

7.6 Discussion: Can language attitudes data reveal anything about immigrants' acquisition of local language norms?

The case study of Barbora and Michaela examined the associations between their markedly different vowel productions, language attitudes, and identities, despite each having lived in Scotland for comparable periods. In some elements the case study was similar to Moyer's (1999) study investigated L2 phonological attainment of 24 anglophones who studied German, none of whom were exposed to German before the age of 11. She found that the pronunciation ratings of these German instructors significantly differed from their native German control participants – except for one subject, who was mistakenly considered to be native speaker of German and is the focus of her analysis. The individual began learning German at the age of 22, and was mostly self-taught. What made him different from the rest of the group was the fact that he was fascinated with the German language and culture, as well as highly motivated to sound like a native speaker. This notable exception to the rule in Moyer's study aligns well with Barbora in the present study, who received some English language instruction in Slovakia but didn't consider it strong enough to maintain fluency prior to her arrival in Scotland. Although her spouse was Scottish himself, her English self-

identification score was 0% prior to her arrival. Also like Moyer's example participant, Barbora expressed a great deal of interest in her host culture, quickly establishing a social circle of native Scottish family and friends. After several years of immersion in the host country, Barbora's efforts to accommodate to her local language community were evident in her near-native pronunciation, her high levels of WLO knowledge and use, and her very positive language attitudes about the Scottish language and culture.

Moyer's (1999) participant and Barbora's experience are examples of how production trends, language attitudes, and identity are complementary. It is also clear that FACE and GOAT vowels can index attitudes, as participants in the present study reacted to guises that had altered just FACE and GOAT vowels. This type of multi-tier analysis is uncommon in sociolinguistic and migration research. However, continued research by Moyer (2007) demonstrates that similar links between attitudes and pronunciation exist in more than exceptional cases. Moyer also suggests that the link between attitudes and pronunciation is a circular one, i.e. that positive attitudes lead to increased opportunities to include native speakers in one's social circle, which leads to more opportunities to observe and integrate with local speech communities, and these positive experiences therefore lead to increasingly positive attitudes over time. Moyer (*ibid.*, p. 513) suggested that LOR was a "crucial" factor in this circular development, to the point that after a long period of time (i.e. >10 years) the positive attitudes as well as near-native production were nearly inevitable. However, results from the present study suggested otherwise. LOR did indeed prove to be a key factor in the model for production, but in this case the model predicted that increased LOR was associated with less integration with local language communities (i.e. higher LOR associated with more diphthongal productions). Additionally, despite their differences in

vowel productions, Barbora's monophthongal and Michaela's diphthongal FACE and GOAT vowel realisations could both be considered as reaching 'native-like' pronunciation.

7.6.1 Identity-attitudes-production model

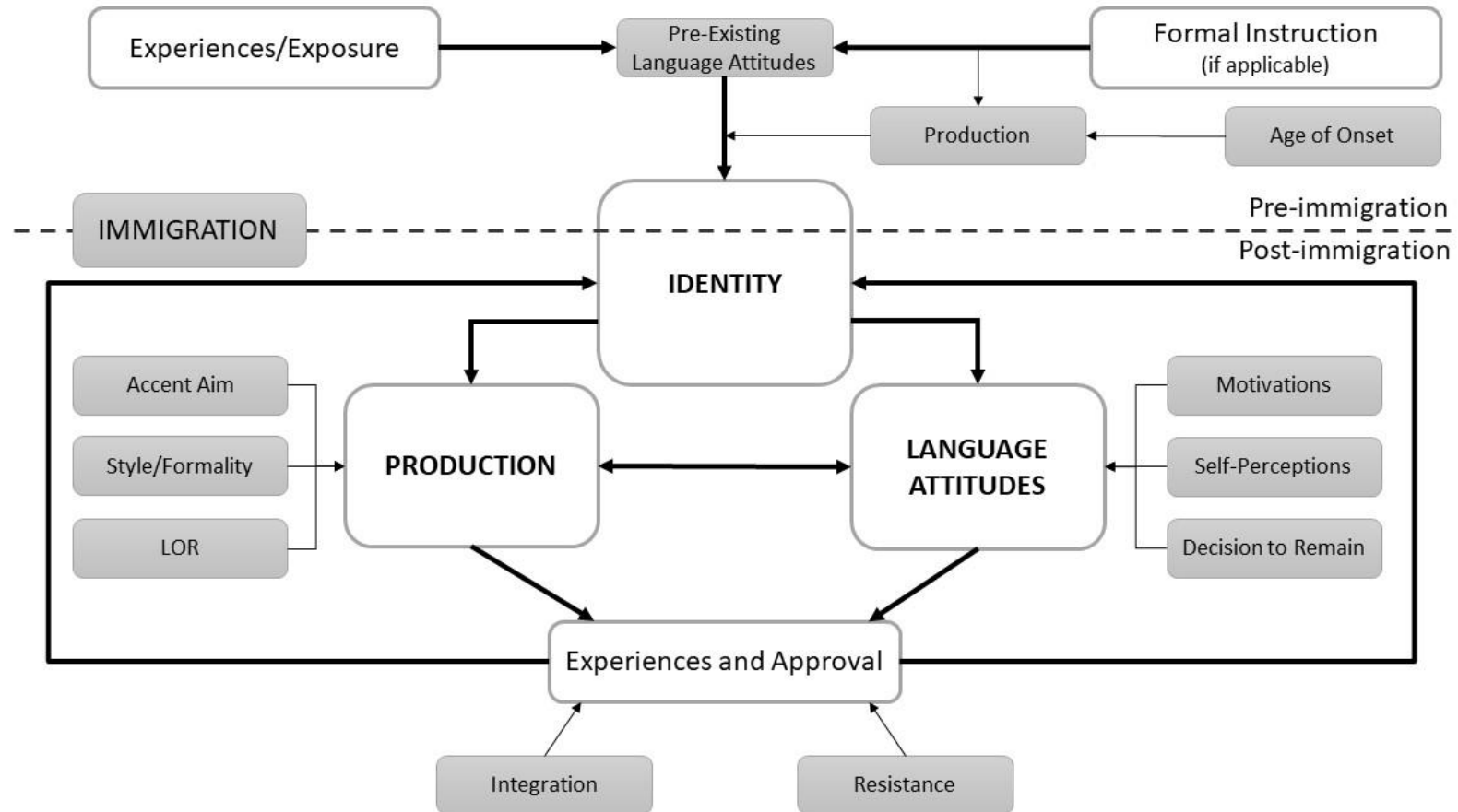
By incorporating identity with Moyer's (2007) theory, the present study suggests an identity-attitudes-production model that expands Moyer's circular model between attitudes and production. The relationships between identity, attitudes, and pronunciation after immigration, compared to factors affecting language attitudes and production before immigration, are evident in Figure 7.3.

The model begins with immigrants' pre-immigration experiences with their L2, which include formal instruction as well as casual exposure. These experiences directly shape their pre-immigration identity, which then carries over at the time of immigration. As was evident in results for the VGT and production tasks, identity had a significant part to play in immigrant participants' attitudes and productions. Keeping Moyer's (2007) circular relationship between attitudes and accent at its core, the current model demonstrates that language attitudes are correlated to production. Key social factors are also demonstrated as having specific effects on either attitudes or production or both.

This dissertation hypothesised that identity plays a role in how immigrant participants process their experiences, and that the meanings formed as a result are associated with how the participants perceive and integrate with their local language communities. The present model incorporates what happens as immigrants "test" their production and attitudes in an L2 environment. The experiences that follow from being immersed in the host country would naturally lead to effects on attitudes and production over time, with specific experiences reinforcing elements of either integration into or

resistance to local speech communities. However, I argue that these experiences shape how immigrants perceive themselves, i.e. their identities, before shaping either attitudes or production. The model reflects this by demonstrating that post-immigration experiences continue to shape immigrants' identities, which go on to shape attitudes and production still further. The indirect effects imply that changes over time exist, but also that the changes themselves take time to manifest in either production or attitudes. The suggestion that post-immigration experiences affect identity rather than attitudes or production offers a reason why some long-term immigrants appear well-integrated while others clearly resist the adoption of the pronunciation norms of local speech communities (Block, 2008, 2009; Moyer, 2007; Norton, 2013).

Figure 7.3: Identity-attitudes-pronunciation model proposed by the current study



Chapter 8: Conclusion

This study adds to the previous research on language variation in respect of the accent acquisition, identity, and language attitudes in an urban migrant setting. It has explored linguistic variation among Slovak immigrant women in Edinburgh, to provide a larger picture of cross-cultural interaction in a language contact setting among minorities living in Scotland. The present study had two main aims:

- To understand the possible link between language attitudes and identity and how they connect with immigrants' pronunciations, taking into consideration sociolinguistic and SLA variationist methodology.
- To investigate Scottish accent acquisition and language attitudes among long-term immigrants, and find how this could be applied to the contexts of urban language mobility, bilingualism, and cross-cultural interaction between Scottish speakers and Slovak immigrants.

The first step was to identify how the immigrant participants judged accents (i.e. Scottish, English, and two Slovak accents) in their host country, and how they defined themselves in terms of their identity. This step provided key insights into experiences and decisions that have shaped immigrants' everyday lives. Here I found that, overall, immigrant participants had severe difficulties identifying the guises, which effectively neutralised any strong judgments the immigrant participants exhibited. Despite this, some trends were still evident in their results. Controlling for extraneous factors such as grammar and syntax, the immigrant participants found a non-integrated (i.e. heavily Slovak-accented) immigrant speaker more socially attractive than an integrated immigrant guise (i.e. moderately Slovak-

accented), although both non-native guises were rated with low status. Further, Slovak immigrants in this study followed the same general pattern as their Scottish peers, as both groups evaluated RP English as the most prestigious but least attractive variety. In addition, most immigrants in the study still considered RP as a model accent choice despite their number of years spent in Edinburgh. Comparing immigrants' language attitudes and identities with those of previous studies, results of the present study support previous studies (e.g. Rindal, 2015) outlining how the RP variety still holds a strong position among L2 speakers.

Results from the present study support the previous findings which show that L2 speakers acquired only a limited number of their local variants, regardless of their length of stay in their host country. The immigrants' mean vowel realisations were significantly different from the native Scottish participants (monophthongal realisations) and fluent native-Slovak bilinguals in Slovakia (diphthongal realisations). The key finding in regard to accent acquisition was the effect of speech style, where different speech styles were strongly associated with different vowel productions but for the immigrant group only. However, there was notable variation between immigrants' speech styles, where less formal styles were associated with relatively more monophthongal productions and more formal speech styles with more diphthongal pronunciations. This finding was interpreted as evidence that the immigrants used phonetic inventories that represented a continuous phonetic space between the different types of 'native-like' productions learned before and after immigration. Other social factors highlighted the complexity behind speakers developing their repertoire. Factors such as accent aim, amount of formal English instruction, and age of first English instruction were influences representing pre-immigration language exposure and education; while factors such as the decision to remain

in Scotland, self-evaluated Scottish accent level, and English use in social settings were influences exclusively from the host country. Though individually the factors had small effects on the data models, combinations of these social factors were key to predicting both pronunciation and language attitudes among the immigrant participants.

During the course of the study, a picture emerged of the connections between accent acquisition, identity, and language attitudes. With increased integration with Scottish culture, immigrants produced more monophthongal vowel realisations. Immigrants' self-ratings for the *Scottish*, *Slovak*, and *European* identities proved to be important predictors in accent acquisition and language attitudes. Immigrants who did not hold strong familial ties to the local speech community, e.g. via marriage or partnership, predominantly favoured being labelled as *European* or *Slovak* instead of *Scottish*. The findings showed that these "international women" (Block, 2008) maintained professional ties with the Scottish community while also keeping close social ties to their home country, as well as to other international residents in the host country.

The case study, which followed two distinctly different immigrant participants (see Chapter 7), represented the combination of all previous within-group analyses. The case study provided examples of how pronunciation complements language attitudes and identity, and demonstrated how associations between language attitudes and production reflect social ties to immigrants' home and host countries. Additionally, the individual analyses in the case study helped to validate the observations of significant factors affecting the immigrant Slovak group as a whole. Even more remarkable, despite their differences the participants displayed key similarities that only highlighted further the importance of the identity-attitudes-pronunciation model: both participants indicated solidarity with other immigrants, at the time of the study both had resided in Scotland for comparable periods of

time, and neither had fully rejected either home or host country cultures. In short, the case study participants exemplified the diversity of opinions and attitudes embodied by new transnational and multilingual immigrant groups.

The present study demonstrate deep connections between language, attitudes, and identity in immigrants. These results contrast with what Duchêne *et al.* (2013, in Forsberg Lundell and Bartning, 2015, p. 1) and Diskin and Regan (2015, p. 137) describe as the marginalisation of language issues in migration studies, and in the social sciences more generally. Current trends of migration study may acknowledge that language plays a role in migrants' integration with their host countries, but even studies that examine this integration in detail (e.g. Bechhofer and McCrone, 2010) tend not to rank language high as a factor in cultural migration and almost always fail to investigate linguistic matters further. The contributions of the present study are best seen as highlighting the need to change these trends, and to place greater emphasis on the role of language as both a tool for cultural integration and a reflection of personal identity.

8.1 Study limitations

This section discusses the methodological limitations of this study. To start, this thesis examined identity by adapting Llamas and Watt's (2014) methodology, asking participants to decide between and choose out of four identities (Slovak, European, Scottish, English) and to indicate on a scale a "score" for their associations with each identity. However, examining immigrants' identities in this fashion implied very broad assumptions, showing a somewhat limited picture of these identities. Previous studies by Norton (2013) and Howley (2015) suggested using an ethnographic approach. During their research, each author spent considerable time observing and interacting with their student participants, aiming to know

them better so as to provide comprehensive reports on their L1/L2 use and motivations towards language development. Though the ethnographic approaches were successful in identifying subtleties to immigrants' attitudes and identities, the investigation in each case took months of observation and many more of preparation and analysis. Due to time constraints, the present study used a questionnaire and quantitative identity measurements to assess identity, the validity of which was tested in a pilot study before refining it for the main study. The decision to use questionnaires as well as qualitative observations was supported by previous research, such as Drummond (2010, 2012), who determined that measuring identity via surveys is a good approach, particularly if studying salient features in language. However, to observe immigrants in more detail and confirm our findings, I suggest that ethnographic research is necessary to establish a deeper understanding of immigrants' identity construction.

Language attitudes were measured using Campbell-Kibler's (2006) perception method of splicing individual vowel sounds of different speakers. This method has been primarily used among L1 speakers with success; but, to the authors' knowledge, the technique has been used only sparingly with non-native speakers (e.g. Evans and Iverson, 2003; Iverson and Evans, 2009). Instead, previous methods utilising a verbal guise task with non-native speakers used complete sentences read by different speakers, which were used to elicit the non-native participants' responses towards different varieties (e.g. see McKenzie, 2010; Ladegaard and Sachdev, 2006). Most evident was that guise identification appeared to be particularly difficult for immigrant participants, whose guise identification scores – between 50-60% per guise – were generally much lower than native Scottish participants' scores. This might have been due to the splicing technique used in the study,

where efforts to alleviate “tinny”-sounding vowels may have masked features of quality or quantity required for immigrant participants to make judgements on these vowels.

Another aspect of the both quantitative and qualitative methodology in language attitudes (i.e. measured via questionnaire and verbal guise task) concerns the scale, which ran from 0-100. The present study used a larger scale, again based on the pilot study, to assess immigrants’ identities and language attitudes on a more refined scale. However, this study didn’t use a more familiar forced-choice scale (see Redinger, 2010, Redinger and Llamas, 2014), and participants’ unfamiliarity with the task instrument may have added a layer of artifice that negated the intention to avoid forcing perceptions to meet arbitrary divisions.

The production section included three tasks which were used to measure participants’ accent acquisition across three different speech styles. Although results for all three tasks demonstrated variation of vowel quality in different situations, this study used what Boyd *et al.* (2015) called “laboratory tasks.” They found that using self-recordings elicited higher number of vernacular realisations than using any of the laboratory tasks. Thus, using interview tasks in a laboratory-like setting in this study instead of self-recordings might have hindered the elicitation of otherwise valuable data.

The author of the study collected all data personally, which might have influenced the results to some extent in terms of participants’ productions, identity scores, and language attitudes. Previous studies cautioned against the “observer’s paradox” (Labov, 2001; see also Milroy and Gordon, 2003) by placing a researcher into the role of an observer and fieldworker. I decided to go against this step due to time constraints, but especially due to the fact that I myself was part of the immigrant participants’ “in-group.” All of the Slovak immigrant participants met with other immigrants, so the author had a means of quickly

becoming familiar with the participants and creating good rapport. In this way I could observe immigrants' perceptions and anxieties more closely, and obtain more data on the relevant topic. The participants in this study were not aware of what exactly I was studying, and thus were naïve towards the objectives of the study at the time of recording.

Finally, this study employed relatively low number of exclusively female participants when compared with attitude studies, many of which are based on responses from hundreds of informants (see e.g. McKenzie, 2010). Thus, the results presented in the study present only tendencies rather than detailed linguistic evidence. The selectivity of the present study may well have limited the opportunities for practical application of results to the wider immigrant community as a whole. Future work may wish to examine whether these tendencies carry over to male Slovak immigrant participants in the same situation, for example. However, results from the present study still shed light on immigrants' initial acquisition of attitudes, accents, and identities within the L2 variation.

8.2 Future work

This thesis aims to contribute to the existing literature by combining analytic tools that were associated with a various subfields of sociolinguistics (language attitudes, accent acquisition, globalisation and identities) within one study to create a bigger picture, rather than just concentrating on a single aspect. Using language attitudes, identity, and accent acquisition, the present study sheds light on the context behind immigrants' mobility, choices for identities, bias towards individual accent varieties, and their accent acquisition. The study interprets both individual results and a high-level perspective to represent a complete picture.

This analysis also aims to contribute to other variationist studies by analysing Scottish accent acquisition. Existing variationist analyses harness social psychological methodologies to examine immigrant motivations and language attitudes. However, previous research largely ignores analysis of implicit and explicit language attitudes among speakers of minority languages, particularly those living in language communities in Scotland. The present study's contribution is a demonstration that the sociolinguistic situation in Scotland represents a rich setting for future studies with regard to accent and dialect use among L2 minorities.

My investigation of Slovak immigrant participants' identity measurements, language attitudes, and Scottish accent acquisition aims to further contribute to the existing body of research by developing new toolkits to be used in dialect research. Although the study of language variation in migration settings can be traced back to the early 1990s (e.g. Chambers, 1992), the field has become increasingly relevant to a wider public thanks to more recent political and cultural milestones directly associated with immigration, e.g. the accession of A8 countries to the EU in 2004, and the Brexit referendum in 2016. By adding experimental designs that were previously used with L1 speakers, the present study hopes to generate increased interest by applying existing tools in new areas of study, offering potentially new directions and purpose in the field of sociolinguistic migration studies. It may be worthwhile to consider these tools from a theoretical perspective and to integrate them into the future studies to shed light on the identity-attitudes-pronunciation model, and to trace how they are incorporated into everyday use.

With regard to the outcome of the present study, further investigation could address the use of SSE in different settings (e.g. exploring social contexts and networks), as doing so would capture a bigger and more refined picture of dialect use and immigrants' choices in

their target language community. The finding that the immigrants' choices are dependent on their motivations deserves further exploration, as does the tension between shifting of identities and language use. Here, my study follows the previous work by Clark and Schlee (2010) and Meyerhoff and Schlee (2014).

8.3 Implications

In sum, the present work provides a detailed examination of use and function of Scottish dialect among long-term Slovak immigrant women in Scotland, and the analysis of transnational identities has relevance for studies in migration, dialect acquisition, and even L2 language instruction. Since 2004, most Europeans have been free to choose their destination country in which to work, study, or to live permanently. Whatever the reason to move abroad, recent research, as outlined in the Introduction, has agreed that "the new waves of migration from Eastern Europe" (Luthra, Platt and Salamonska, 2014, p. 51) do not follow a simple or direct route to integration in their host countries. While accent use has often been seen as a traditional marker of cultural shift, recent research (e.g. Schjerve and Vetter, 2012; Block, 2008) revealed murky and sometimes ambiguous relationships between language and identity. Results from the present study further highlight the interconnected nature of these relationships, with connections visualised via the identity-attitudes-pronunciation model to reduce some of that murkiness. With this model and new tools in hand, future researchers can explore new avenues of migration study that have immediate and significant impact on an increasingly globalised world.

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Appendices

Appendices A: Methodologies

A1. Participant consent form



THE UNIVERSITY
of EDINBURGH

Department of Philosophy, Psychology and Social
Sciences

Participant Consent Form

Description: You are invited to participate in a research study that investigates language attitudes and use of Slovaks residing in Edinburgh. The purpose of this project is to investigate pronunciation variation in Scotland in long-term second language speakers. All the information that you provide will be highly appreciated.

Researcher's nameZuzana Elliott.....

The researcher named above has briefed me to my satisfaction on the research for which I have volunteered. I understand that I have the right to withdraw from the research at any point. I also understand that my rights to anonymity and confidentiality will be respected.

I agree to have the interview/discussion recorded.

Signature of participant

Date

Thank you for your participation!

A2. Speech recording consent form

Linguistics & English Language Archives Consent for Participation, Use of Recorded Speech, and Data Storage

You are about to participate in a study which involves recording your speech. Please read the information below and tick all boxes that apply. Please sign and date below to confirm your willingness to participate, once you are happy with how the recordings will be used.

Thank you.

Consent for participation

Yes No

I consent to having my speech recorded for the specific research project
Slovak immigrants in Scotland (PI: Dr. Lauren Hall-Lew & Z. Elliott). I have been given the opportunity to ask questions about the tasks.

Yes No

I understand that I have the right to terminate this recording session at any point. The recording of my speech will be deleted at that time, and will be returned to me upon request.

Use of Recordings:

Specific research project use

Yes No

I agree that these recordings may be kept permanently in the Linguistics & English Language archives, and that these recordings may be used for the specific research project

Slovak immigrants in Scotland (PI: Dr. Lauren Hall-Lew & Z. Elliott). I understand that these recordings may be used in teaching or research-related presentations and publications. My name will not be revealed under any circumstances.

General research use

Yes No

I agree that these recordings may be kept permanently in the Linguistics & English Language archives, and that they may be used by the above-named researcher as well as by other researchers for teaching or research purposes, in presentations, and publications. My name will not be revealed under any circumstances.

General public use

Yes No

I agree that these recordings may be kept permanently in the Linguistics & English Language archives, and may be made publicly available for general use, e.g. used in radio or television broadcasts, or put on the world-wide web. My name will not be revealed under any circumstances.

Yes No

Are you willing to participate in future experiments?

Name: _____ Email: _____

Address: _____

Signature _____ Date _____

A3. Debriefing form



THE UNIVERSITY *of* EDINBURGH

Department of Philosophy, Psychology and Social Sciences

Debriefing Form

Project	Sociolinguistic variation among Slovak immigrants in Edinburgh, Scotland
Researcher	Zuzana Elliott
Affiliation	The University of Edinburgh

This study investigates sociolinguistic variation among highly fluent long-term Slovak immigrant women who are residing in Edinburgh. Its main interest lies in exploring whether immigrants adapt to their local community by producing speech patterns similar to their Scottish peers and whether they develop similar attitudes and self-identify themselves in relation to their communities.

I am conducting interviews to evaluate people's opinions about their cultural and speech adaptation, and to determine the extent to which nationality, attitudes, and identity influence their perception in relation to their English instruction in their home country.

The study is divided into two parts, the first orienting into the speech (wordlist and reading passage) and the second to socio-cultural aspects (such as length of residence, identity, attitudes, education). Both parts will enable me to understand where you are from and what has contributed towards your adaptation into community in Edinburgh.

Should you have any more questions regarding this study, please don't hesitate to contact me at zuzana.elliott@ed.ac.uk.

Thank you for your participation!

A4. Questionnaire: Slovak immigrants (p1)

Name:			
Age:		Date:	



Mapping language use and culture in Scotland

Thank you very much for your time.

Where multiple choices are given, please tick only one box unless otherwise directed.

SECTION I – PERSONAL DETAILS

Native Language:		Partner's Nationality:	
Occupation:		Partner's Occupation:	
Years lived in Edinburgh:		Partner's Years in Edinburgh:	
Parents' Nationality:			
Children's Language(s) at Home:			
Most of my immediate family members live in: <i>(tick one)</i>			
<input type="checkbox"/> Edinburgh	<input type="checkbox"/> Another town/city in Scotland:	<input type="checkbox"/> Another town/city in the UK:	<input type="checkbox"/> Outside of the UK: _____
Most of my extended relatives live in: <i>(tick one)</i>			
<input type="checkbox"/> Edinburgh	<input type="checkbox"/> Another town/city in Scotland:	<input type="checkbox"/> Another town/city in the UK:	<input type="checkbox"/> Outside of the UK: _____
Most of my friends live in: <i>(tick one)</i>			
<input type="checkbox"/> Edinburgh	<input type="checkbox"/> Another town/city in Scotland:	<input type="checkbox"/> Another town/city in the UK:	<input type="checkbox"/> Outside of the UK: _____
I plan to obtain UK citizenship. <i>(tick one)</i>		With or without UK citizenship, I plan to remain in Scotland for the foreseeable future. <i>(tick one)</i>	
<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Agree	<input type="checkbox"/> Disagree
Which accent are you aiming for when speaking English?			
<input type="checkbox"/> Scottish	<input type="checkbox"/> English	<input type="checkbox"/> Other _____	

A4. Questionnaire: Slovak immigrants (p2)

Below is a line that represents your self-image: who you are, based on your interests and background. Place along this line the words below, depending on how important these words are to you. Place each word with a mark on the line, and label each mark accordingly.

For example,

Please use the words provided below.

I am:

Scottish English European Slovak

Least Important Most Important

SECTION II – ENGLISH INSTRUCTION & SKILLS

Age when you began formal English instruction:	Were you instructed by native English speakers in Slovakia ? <input type="checkbox"/> Yes <input type="checkbox"/> No
Completed courses or certificates of English language instruction:	
Countries outside of Slovakia where you received English instruction: (<input type="checkbox"/> Tick if not applicable)	
How many years of formal English instruction did you receive in Slovakia ?	
0-2 years <input type="checkbox"/>	3-5 years <input type="checkbox"/>
5-7 years <input type="checkbox"/>	7-10 years <input type="checkbox"/>
More than 10 years <input type="checkbox"/>	

For the following questions, please place a mark on the line or tick the box that best represents your opinion.

1. How would you rate your level of English when you arrived in Edinburgh?

Not Fluent _____ Highly Fluent

A4. Questionnaire: Slovak immigrants (p3)

2. How would you rate your level of English now?

Not Fluent _____ Highly Fluent

3. On average, how much of your time do you spend using English at **work**?

English 0% 25% 50% 75% 100%

4. On average, how much of your time do you spend using English at **home (in Edinburgh) with family**?

English 0% 25% 50% 75% 100%

5. On average, how much of your time do you spend using English when **socialising with friends**?

English 0% 25% 50% 75% 100%

6. Do you think that you speak with a Scottish accent?

Definitely No _____ Definitely Yes

SECTION III – ATTITUDES

Please place a mark on the line.

1. People raised in Scotland speak differently compared to people raised in England.

Strongly Disagree _____ Strongly Agree

2. Using a Scottish accent will help me make more friends in my local community.

Strongly Disagree _____ Strongly Agree

3. It is important for me to be part of the local community in Edinburgh.

Strongly Disagree _____ Strongly Agree

A4. Questionnaire: Slovak immigrants (p4)

4. Imagine the following scenario: The lights in the house turn off one night, and two repairmen arrive to fix the lights. One repairman is from London, the other repairman is from Edinburgh. Even in the dark, I would be able to tell which repairman is from Scotland just by listening to them.

Strongly Disagree _____ Strongly Agree

5. I find Scottish accents more pleasant to listen to than English accents.

Strongly Disagree _____ Strongly Agree

6. It is important for me to be understood by Scottish people in Edinburgh in order to make new friends.

Strongly Disagree _____ Strongly Agree

7. Sounding Scottish would allow me to be more at ease with local people.

Strongly Disagree _____ Strongly Agree

8. I have noticed differences in the way Scottish people in Edinburgh speak compared to other English speakers.

Strongly Disagree _____ Strongly Agree

9. I can speak English however I want in Edinburgh as long as I can be understood.

Strongly Disagree _____ Strongly Agree

10. I would like my pronunciation to be more like that of people in Edinburgh.

Strongly Disagree _____ Strongly Agree

11. I can tell where a Scottish speaker is from (within Scotland) just by listening to their accent.

Strongly Disagree _____ Strongly Agree

A4. Questionnaire: Slovak immigrants (p5)

12. The accent that I use in Edinburgh is different from the accent that I was taught when learning English.

Strongly Disagree _____ Strongly Agree

13. I like hearing Scottish accents.

Strongly Disagree _____ Strongly Agree

14. I find it harder to understand people from Scotland than people from England, Wales, or Northern Ireland.

Strongly Disagree _____ Strongly Agree

15. Scottish people in Edinburgh speak differently compared to other Scottish people.

Strongly Disagree _____ Strongly Agree

16. I have learned that English and Scottish accents are different since arriving to Edinburgh.

Strongly Disagree _____ Strongly Agree

17. I knew about English and Scottish accent differences before my arrival to Scotland.

Strongly Disagree _____ Strongly Agree

18. Scottish people in Edinburgh would respect me more if I were to speak with a Scottish accent.

Strongly Disagree _____ Strongly Agree

19. If I had a Scottish accent, I would get a better or more fulfilling job.

Strongly Disagree _____ Strongly Agree

20. I would like to acquire a Scottish accent.

Strongly Disagree _____ Strongly Agree

A4. Questionnaire: Slovak immigrants (p6)

21. I would like to lose my Slovak accent when I speak English.

Strongly Disagree _____ Strongly Agree

22. I am comfortable with the way I speak English in public.

Strongly Disagree _____ Strongly Agree

23. Scottish accents sound elegant.

Strongly Disagree _____ Strongly Agree

24. It is important for me that I sound like a Scottish speaker when I speak English at my workplace.

Strongly Disagree _____ Strongly Agree

25. My English has improved since I have been living in Edinburgh.

Strongly Disagree _____ Strongly Agree

26. I think that Scottish accents are spoken primarily by uneducated people.

Strongly Disagree _____ Strongly Agree

27. It is difficult to find a decent job in Edinburgh if you speak with an English accent.

Strongly Disagree _____ Strongly Agree

This marks the end of the questionnaire.

Thank you for your time and help. Your participation in this project is very much appreciated.

A5. Questionnaire: Scottish participants (p1)

Name:			
Age:		Date:	



Mapping language use and culture in Scotland

Thank you very much for your time.

Where multiple choices are given, please tick only one box unless otherwise directed.

SECTION I – PERSONAL DETAILS

Native Language:		Partner's Nationality:	
Occupation:		Partner's Occupation:	
Years lived in Edinburgh:		Partner's Years in Edinburgh:	
Parents' Nationality:			
Children's Language(s) at Home:			
Most of my immediate family members live in: <i>(tick one)</i>			
<input type="checkbox"/> Edinburgh	<input type="checkbox"/> Another town/city in Scotland: _____	<input type="checkbox"/> Another town/city in the UK: _____	<input type="checkbox"/> Outside of the UK: _____
Most of my extended relatives live in: <i>(tick one)</i>			
<input type="checkbox"/> Edinburgh	<input type="checkbox"/> Another town/city in Scotland: _____	<input type="checkbox"/> Another town/city in the UK: _____	<input type="checkbox"/> Outside of the UK: _____
Most of my friends live in: <i>(tick one)</i>			
<input type="checkbox"/> Edinburgh	<input type="checkbox"/> Another town/city in Scotland: _____	<input type="checkbox"/> Another town/city in the UK: _____	<input type="checkbox"/> Outside of the UK: _____
I think that I speak with a Scottish accent. <i>(tick one)</i>			
<input type="checkbox"/> Agree		<input type="checkbox"/> Disagree	
I plan to remain in Scotland for the foreseeable future. <i>(tick one)</i>			
<input type="checkbox"/> Agree		<input type="checkbox"/> Disagree	

A5. Questionnaire: Scottish participants (p2)

Below is a line that represents your self-image: who you are, based on your interests and background. Place along this line the words below, depending on how important these words are to you. Place each word with a mark on the line, and label each mark accordingly.

For example,

Please use the words provided below.

I am:

Scottish English European

Least Most
Important Important

SECTION II – ATTITUDES

For the following questions, please place a mark on the line where the mark best represents your opinion.

1. People raised in Scotland speak differently compared to people raised in England.

Strongly Disagree _____ Strongly Agree

2. Using a Scottish accent enables me to make more friends in my local community.

Strongly Disagree _____ Strongly Agree

3. It is important for me to be part of the local community in Edinburgh.

Strongly Disagree _____ Strongly Agree

A5. Questionnaire: Scottish participants (p3)

4. Imagine the following situation: The lights in the house turn off one night, and two repairmen arrive to fix the lights. One repairman is from London, and the other repairman is from Edinburgh.

Even in the dark, I would be able to tell which repairman is from Scotland just by listening to them.

Strongly Disagree _____ Strongly Agree

5. I find Scottish accents more pleasant to listen to than English accents.

Strongly Disagree _____ Strongly Agree

6. It is important for me to be understood by Scottish people in Edinburgh in order to make new friends.

Strongly Disagree _____ Strongly Agree

7. Sounding Scottish allows me to be more at ease with local people.

Strongly Disagree _____ Strongly Agree

8. I have noticed differences in the way Scottish people in Edinburgh speak compared to other English speakers.

Strongly Disagree _____ Strongly Agree

9. I can tell where a Scottish speaker is from (within Scotland) just by listening to their accent.

Strongly Disagree _____ Strongly Agree

10. I like hearing Scottish accents.

Strongly Disagree _____ Strongly Agree

11. I find it harder to understand people from Scotland than people from England, Wales, or Northern Ireland.

Strongly Disagree _____ Strongly Agree

A5. Questionnaire: Scottish participants (p4)

12. Scottish people in Edinburgh speak differently compared to other Scottish people.

Strongly Disagree _____ Strongly Agree

13. Scottish people in Edinburgh will respect foreigners more if they were to speak with Scottish accents.

Strongly Disagree _____ Strongly Agree

14. I think that having a Scottish accent enables me to get a better or more fulfilling job.

Strongly Disagree _____ Strongly Agree

15. Sometimes I feel that I would like to lose my Scottish accent when I speak with people from abroad.

Strongly Disagree _____ Strongly Agree

16. I am comfortable with the way I speak in public.

Strongly Disagree _____ Strongly Agree

17. Scottish accents sound elegant.

Strongly Disagree _____ Strongly Agree

18. It is important for me that I do sound Scottish when speaking with foreigners at my workplace.

Strongly Disagree _____ Strongly Agree

19. I think that Scottish accent is spoken primarily by uneducated people.

Strongly Disagree _____ Strongly Agree

20. It is difficult to find a decent job in Edinburgh if you speak with an English accent.

Strongly Disagree _____ Strongly Agree

This marks the end of the questionnaire.

Thank you for your time and help. Your participation in this project is very much appreciated.

A6. Questionnaire: Slovak participants in Slovakia (p2)

For the following questions, please tick only **one** answer per question.

3. On average, how much of your time do you spend using English at **work/school**?

English 0% 25% 50% 75% 100%

4. On average, how much of your time do you spend using English at **home**?

English 0% 25% 50% 75% 100%

5. On average, how much of your time do you spend using English **with friends**?

English 0% 25% 50% 75% 100%

6. Which of the following statements best describes where you want to live in the future?

<input type="checkbox"/> I plan to live permanently in Slovakia. (If ticked, skip to Question 7)			
OR (choose one option each from 6a and 6b)			
6a. I plan to move to:		6b. When:	
<input type="checkbox"/> UK	<input type="checkbox"/> Australia	<input type="checkbox"/> Within 2 years	<input type="checkbox"/> In 2-5 years
<input type="checkbox"/> US/Canada	<input type="checkbox"/> Elsewhere in Europe	<input type="checkbox"/> In 5-10 years	
<input type="checkbox"/> Another non-English, non-European country		<input type="checkbox"/> Intend to migrate but no schedule set	

7. Do you think that you speak English with an English accent? Yes No

8. Which accent of English language are you aiming to acquire? _____

9. Which English-speaking cultures are you motivated/inspired by? _____

10. What kind of materials do you use for learning English?

- a. Media: movies, audio, news, radio
- b. Textbooks *please state which* _____
- c. Books *please state which* _____
- d. Other _____

A6. Questionnaire: Slovak participants in Slovakia (p3)

III. SECTION – ATTITUDES (*Please only one option*)

Please tick **one** box for each question.

1. Slovak people pronounce English differently compared to native English speakers.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Imagine the following situation: The lights in the house turn off one night, and two repairmen arrive to fix the lights. One repairman is from Scotland, the other repairman is from England.

Even in the dark, I would be able to tell which repairman is from Scotland just by listening to them.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. I predominantly choose English-speaking programmes when watching TV or listening to the radio.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. It is important for me to be understood by native English speakers when speaking English.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. I have noticed differences in the way Slovak people speak English compared to English native speakers.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. I can speak English however I want as long as I can be understood.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. I would like my pronunciation to be more like that of native English speakers.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A6. Questionnaire: Slovak participants in Slovakia (p4)

8. I can tell a Scottish speaker from English just by listening to their accent.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. The accent that I use when speaking with a native English speaker is different from the accent that I was taught when learning English.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. I like hearing English accent spoken.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. I find it harder to understand people from Wales, Scotland, and Northern Ireland than people from England.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. I am familiar with differences between English and Scottish accents.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. I think that Scottish society is more open to foreign migrants than English society.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. If I had an English accent, I would get a better or more fulfilling job.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. I would like to acquire an English accent.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A6. Questionnaire: Slovak participants in Slovakia (p5)

19. I would like to lose my Slovak accent when I speak English.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. I am comfortable with the way I speak English in public.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. The Scottish accent sounds elegant.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. It is important that I sound like a native English speaker when I speak English.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. My English pronunciation has improved since I was abroad (*if applicable*).

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. I think that the Scottish accent is spoken primarily by uneducated people.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. I think that Slovak culture is preferable to English culture.

Strongly Disagree			Neutral/ No Opinion			Strongly Agree
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This marks the end of the questionnaire.

Thank you for your time and help. Your participation in this project is very much appreciated.

Spider and Toad

There was once a Spider who was quite clever but very lazy. One evening, he looked in his cupboard and found that there was very little to eat, just enough for one meal. But it was late, he thought, and he was so lazy that he hated the thought of getting more food. But he knew that his polite neighbour, Toad, would make tomorrow's dinner if Spider asked nicely. So he came up with a plan, and soon after called Toad.

Spider told Toad that he had made a nice cake, and he invited Toad over for tea to share it. Knowing that Toad loved cakes, he was certain that Toad would agree. He did. Everything was going to Spider's plan.

The next day, Spider set the table, and Toad walked in a short while later. It had snowed two days before, and the road was still muddy. All of Toad's four feet were caked in mud.

Spider pointed at Toad's hands and feet and told him to clean them off outside. Spider said that his sink had broken an hour before and that the lake in the garden was the only option. Spider then placed food on the table, and told Toad to hurry.

Toad rushed out to the lake to wash up, then went back just as quickly. By the time he sat down, Spider had finished nearly half of the food. But before Toad could take a single bite, Spider interrupted him, and told him to wait because Toad's hands were still dirty.

Toad looked at his hands, which were coated with dirt thanks to rushing out to the lake and back. Spider made a great show of feigning insult, because it was well known that guests never sat at their host's table with dirty hands.

Toad went to the lake again, shaking his hands dry so they would not pick up more dirt. This time he was careful to step only on the few blades of grass that showed through the snow and mud. When he returned, Toad found that Spider had finished all the food.

Spider only half-apologised, saying that Toad was too slow and the food was going cold, and that Spider could not take the blame because the rules of etiquette were absolute. Toad agreed, and out of politeness he asked if Spider could make it over for tea the next day, in repayment for today's invitation.

They then set up the date. That night, as the lights faded and Spider crawled into bed, he congratulated himself on his little joke. Thinking himself most clever, he fell asleep with a smile.

The next day, just before tea-time, Spider arrived at Toad's gate. "Hello!" he shouted, but there was no answer. Finding the door unlocked, Spider went in and took off his coat. There was still no answer, so Spider walked through to the dining room. A large indoor pond, nearly the size of Spider's garden lake, dominated the room.

With no tables or chairs, Spider wondered idly if he should have brought a boat. But as he drew nearer to the water's edge, he saw Toad at the very bottom of the pond. Toad saw Spider, too, and he waved and showed off the cake proudly.

Spider gasped at his good fortune. It was toad-cake! A rare and expensive delicacy, its taste was only a shade or two away from perfection. However, toad-cake lost its flavour above water – hence the table for them both at the bottom.

It was already tea-time, so Spider waded out a bit and then dove in. Unfortunately, Spider was so light that he could only float on the surface. No matter how Spider pushed or thrashed, he would not sink. All the while, he saw Toad eating the cake, and enjoying himself immensely at Spider's difficulty.

But Spider was clever. He went back for his coat, and started filling its pockets with stones from the shoreline. When it was heavy enough, Spider put it on then waded in. He was now heavy enough to make it to the table.

After Spider sank to the bottom and sat down, he pulled up a plate and fork. But before he could take one bite, Toad interrupted him and told him to wait because Spider was still wearing a coat. Indeed, it was well known that guests never sat at their host's table while wearing a coat.

Spider looked down at his coat, then it dawned on him that Toad had turned yesterday's joke upside-down. He looked pleadingly at Toad, who only half-apologised and claimed that the rules of etiquette were absolute. With that, Toad whisked the coat off Spider. No longer weighed down by stones, Spider shot up away from the table and out of the water like a champagne cork.

Drying himself off at the waterside, Spider turned back to see Toad's head poking above water. Toad thanked him for coming, then bade him goodbye – but not before saying that the rules of etiquette were not meant to cause an unfair advantage. But in the future, said Toad, he really would like to try some of Spider's cakes.

A8. Wordlist

bade	coat	fought	know	pay	soak
bait	cod	gate	lake	pet	sought
bake	code	glade	late	poke	spade
bay	date	glowed	lay	pot	spoke
bed	day	go	let	quote	stake
blade	dead	goat	load	saw	state
bloke	dot	god	lot	set	stay
boat	dote	hate	maid	shade	take
bode	dough	hay	make	shake	taught
bought	fade	head	may	shed	toad
cake	fake	hot	mode	shot	tote
caught	fate	jade	net	show	vet
choke	fed	Joe	nod	showed	vote
claw	flow	joke	note	smoke	
cloak	foe	Kate	paw	snowed	

A9. Transcript and order of all words used in the vocabulary task.

Order	Weather-Related Items	Order	Food-Related Items
1	haar	2	tatties
3	dreich	4	stovies
5	braw day	6	neeps
7	pishing/lashing doon	8	Scottish tablet
9	blowing a hoolie	10	jam pieces

A10. Transcript of all sentences used in the Verbal Guise Task (VGT), with spliced tokens in bold.

Including FACE tokens	Including GOAT tokens
He had made a nice cake .	Spider turned back to see Toad's head poking above water.
Its taste was only a shade or two away from perfection.	Toad whisked the coat off Spider.

- A11. Example screenshots from the VGT website set up for the task. Screenshots include the homepage, the study story, an example of the Visual Analogue Scales for one guise, and the closing page.


Appendix A11.i: Homepage


WELCOME

Thanks for your time.
We are about to begin the listening section of the experiment.

The next page will contain instructions, and then you will begin the task. Feel free to ask questions at any time.

When you are ready, click the button below to go to the the next section.





About This Task

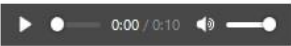
This is part of my PhD project at the University of Edinburgh. I am working with Slovak English-language learners to determine how English language use changes with immigration.

This task includes listening to short phrases, and will take less than 20 minutes to complete. More information is available on the next page.

Appendix A11.ii: Task introduction/story

SPEECH REPLACEMENT: Picky Producer

We made a recording of the story you just read, with the intention of sharing it with other listeners like yourself. Here's a sample of how it turned out:



Spider only half-apologised, saying that Toad was too slow, and the food was going cold; and that Spider could not take the blame because the rules of etiquette were absolute.

However, the producer behind the project is not easily impressed. She has said that the recordings "Don't represent the intended audience." But that's all she says no matter how we change the recording!

Now we're turning to our intended audience (that's you!). We've combined recordings from a few speakers, and we would like your opinions. Listen to the following recordings, then judge them on the scales provided.

Some of the recordings will sound a little bit odd, due to recording issues. But try your best to answer the questions. Here are the sentences, and you'll hear each one more than once:


Spider turned back to see Toad's head poking above water.


He had made a nice cake.

Toad whisked the coat off Spider.

Its taste was only a shade or two away from perfection.


When you are ready to begin, click the button below.





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Judge the Speaker


I think that Speaker 1 sounds...


Not likeable  Likeable


Not annoying  Annoying


Foreign  Not foreign


Easy to understand  Difficult to understand

Not elegant  Elegant

Not rough  Rough

Not friendly  Friendly


Not posh  Posh

Not pleasant  Pleasant


Where would a speaker with an accent like this one come from?

Next Page

Listen:



"He had made a nice cake."

Finished!

Task Complete

Thank You!

You have completed the Listening Task portion of the study. Please talk to the researcher for additional information.

If you have any questions or concerns about your participation in this project, please contact my PhD supervisors:

Dr Lauren Hall-Lew: Lauren.Hall-Lew@ed.ac.uk

Dr Warren Maguire: W.Maguire@ed.ac.uk

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- A12. Examples from offline VGT task used in place of the website where Internet access was unavailable, or use at the participants' request. Examples include the opening Powerpoint slides, an example of the Visual Analogue Scales for one guise, an example of the corresponding Powerpoint slide for that guise evaluation, and the closing page.

Appendix A12.i: Opening slides

**SPEECH REPLACEMENT:
Picky Producer**

We made a recording of the story you just read, with the intention of sharing it with other listeners like yourself. Here's a sample of how it turned out:




However, the producer behind the project is not easily impressed. She has said that the recordings "Don't represent the intended audience." But that's all she says no matter how we change the recording!

Now we're turning to our intended audience (that's you!). We've combined recordings from a few speakers, and we would like your opinions. Give the following recordings a listen, then judge them on the scales provided.

[Click for Next Page →](#)

Some of the recordings will sound a little bit odd, due to recording issues. Test yourself with these three recordings. Try to note how the recordings differ, and what the differences do to affect the overall recording. If the recording was made by one speaker, what would you think of that speaker?



"Toad whisked the coat off Spider."

Click or press the spacebar when finished →

Final Preparation

Try your best to answer all the questions. Here are the sentences you'll be hearing, and you'll hear each one more than once:

Spider turned back to see Toad's head poking above water.	He had made a nice cake.	Toad whisked the coat off Spider.	Its taste was only a shade or two away from perfection.
---	--------------------------	-----------------------------------	---

Ready to proceed? Click or press the spacebar to begin →

Judge the Speaker

I think that Speaker 1 sounds...

Not likeable	_____	Likeable
Not annoying	_____	Annoying
Foreign	_____	Not foreign
Easy to understand	_____	Difficult to understand
Not elegant	_____	Elegant
Not rough	_____	Rough
Not friendly	_____	Friendly
Not posh	_____	Posh
Not pleasant	_____	Pleasant

Where would a speaker with an accent like this come from?

Appendix A12.iii: Powerpoint slide with link to spliced excerpt for the first guise as example

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Speaker 1



“He had made a nice cake.”

Appendix A12.iv: Task end page

TASK COMPLETE

Thank You!

You have completed the Listening Task portion of the study.
Please talk to the researcher for additional information.

If you have any questions or concerns about your participation in
this project, please contact my PhD supervisors:

Dr Lauren Hall-Lew	Dr Warren Maguire
Lauren.Hall-Lew@ed.ac.uk	W.Maguire@ed.ac.uk

A13. List of words analysed from recorded speech samples in *face2face* textbooks.

FACE tokens		GOAT tokens
A	say	coat
break	stayed	go
late	straight	know
made	take	no
nate	they	slow
paid	way	so

A14. List of words analysed from the Slovak national corpus

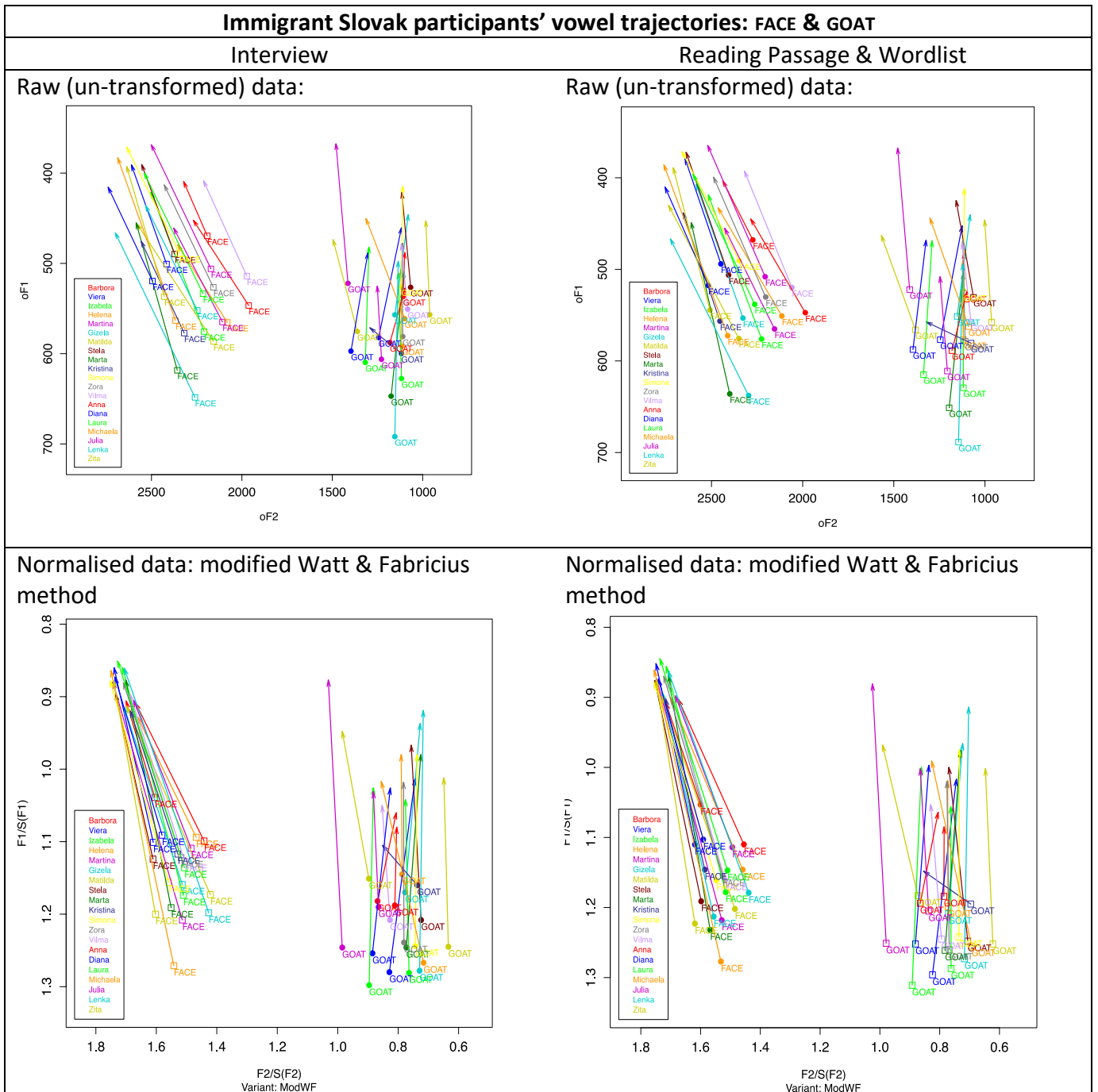
"FACE" tokens		"GOAT" tokens	
čiernej	nalej	častou	jednou
malej	olej	celou	prvou
danej	rannej	cestou	rukou
matej	starej	hrivňou	vetou

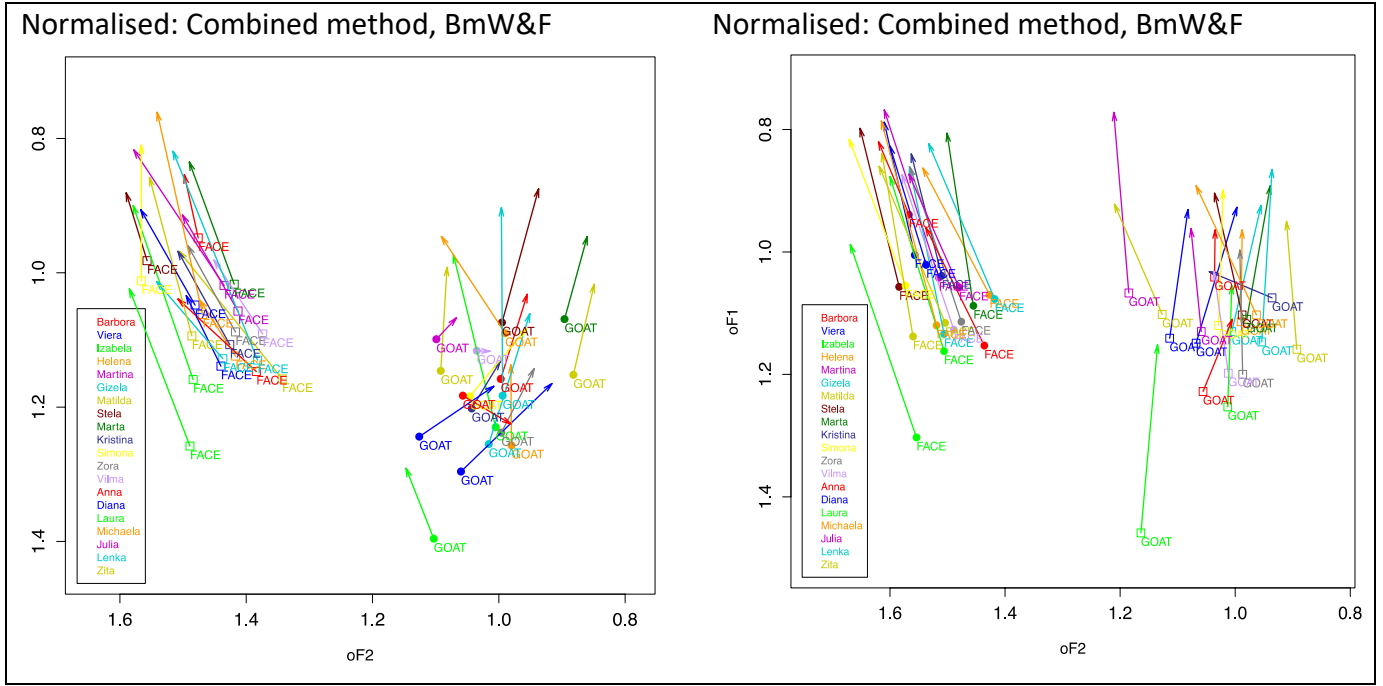
A15. Table of immigrant Slovak participants included in the present study, with summary data on these participants' backgrounds: age, age of arrival (AOA), age of formal English instruction (AOE), length of residence (LOR) and occupations after immigration.

ID	AGE	AOA	AOE	LOR	OCCUPATION
Barbora	36	29	14	7	Accountant (maternity leave)
Viera	39	26	14	13	Dance teacher & physiotherapist
Izabela	39	24	14	15	Fitness instructor
Helena	33	23	7	10	Office admin (maternity leave)
Martina	37	19	14	18	Civil servant
Gizela	36	24	22	12	Hotel assistant manager
Matilda	37	27	14	10	Travel agent
Stela	32	23	10	9	Accountant
Marta	40	29	27	11.2	Nanny
Kristina	36	23	16	13	HR Coordinator
Simona	30	23	11	7	Architect (maternity leave)
Zora	25	20	6	5	Bank administrator
Vilma	25	20	6	5	Waiter trainer
Anna	24	19	5	5	Assistant Manager
Diana	24	19	6	5	Customer service agent
Laura	25	20	4	5.5	Sales assistant
Michaela	28	23	8	5.5	Project manager
Julia	38	29	30	9	Hairdresser (owner)
Lenka	42	29	8	13	Housewife
Zita	33	28	7	5.4	HR Assistant

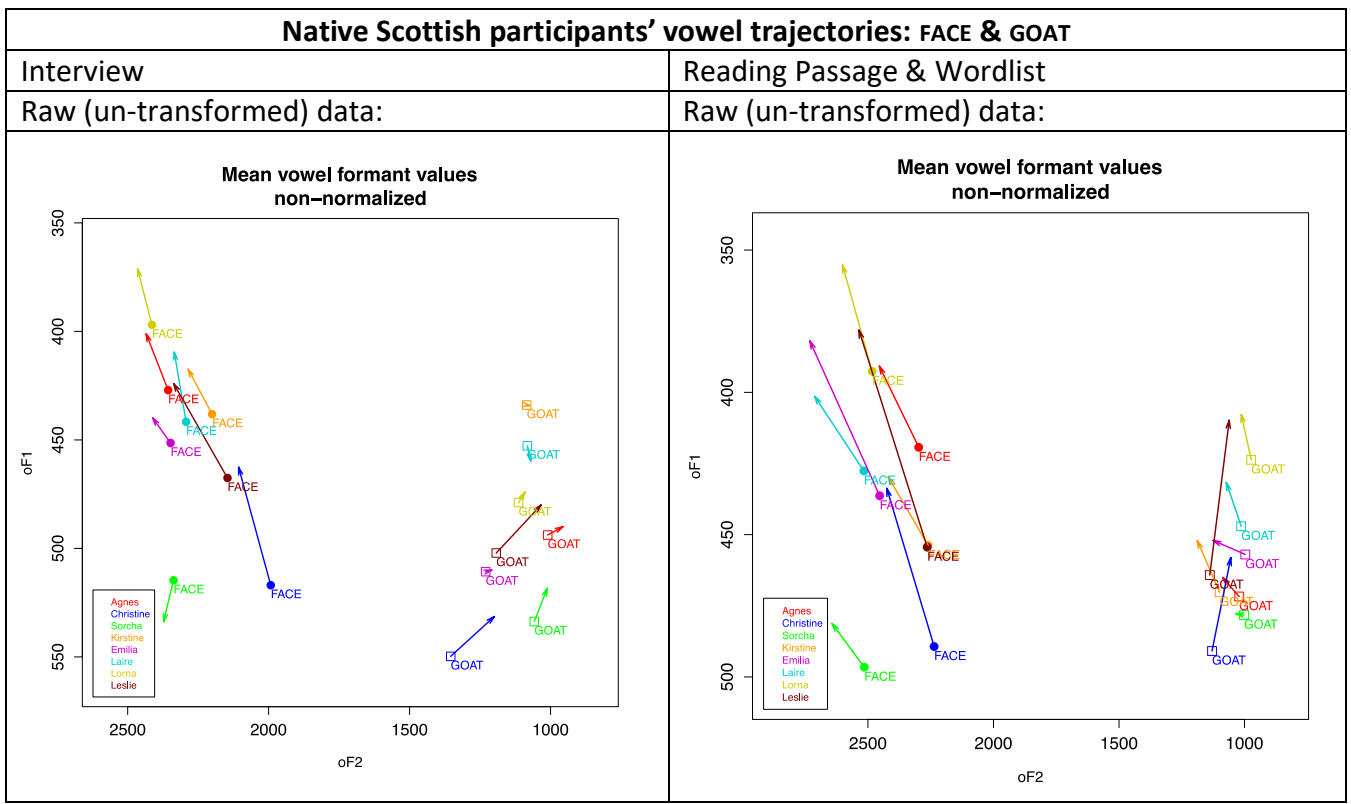
Appendices B: Transformation & normalisation

B1. Examples of vowel normalisation on NORM plots (Kendal & Thomas, 2010) for immigrant Slovak and native Scottish participants.

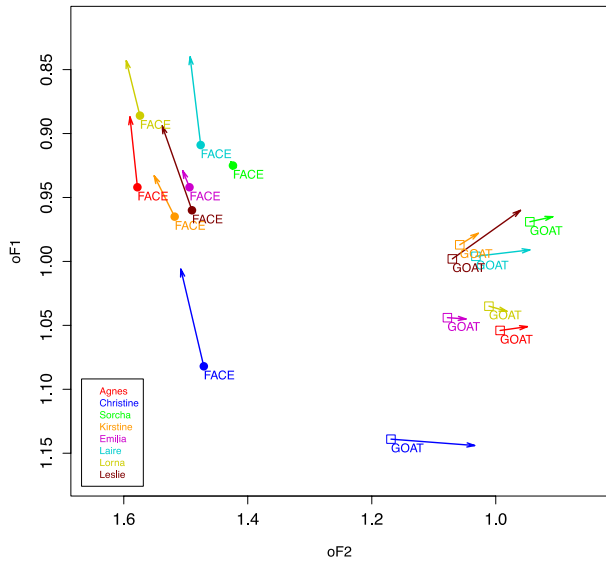




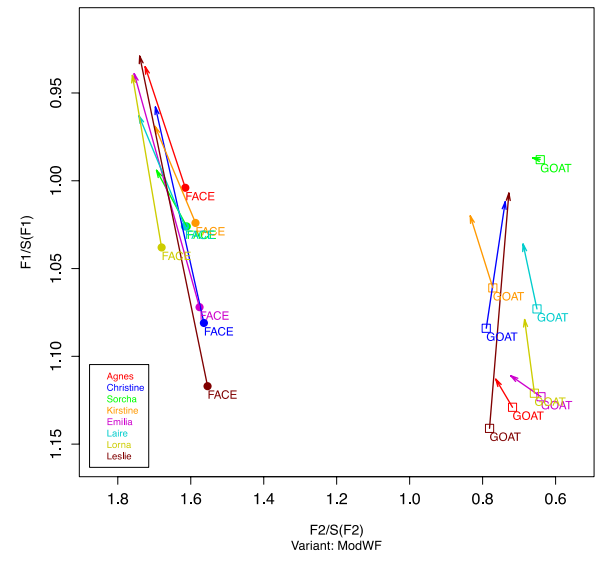
B2. Examples of vowel normalisation on NORM plots (Kendal & Thomas, 2010) for native Scottish participants.



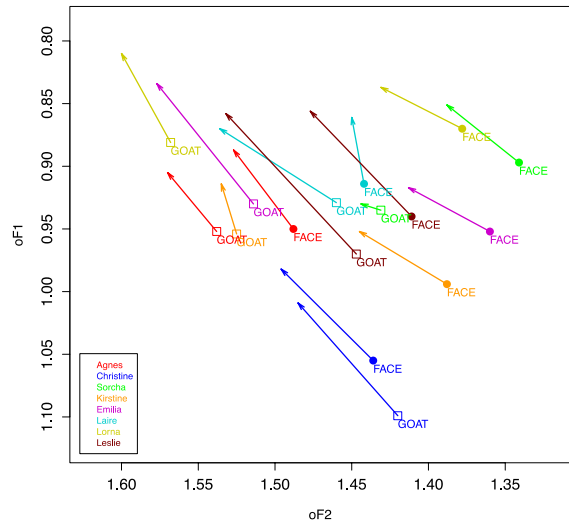
Normalised data: modified Watt & Fabricius method



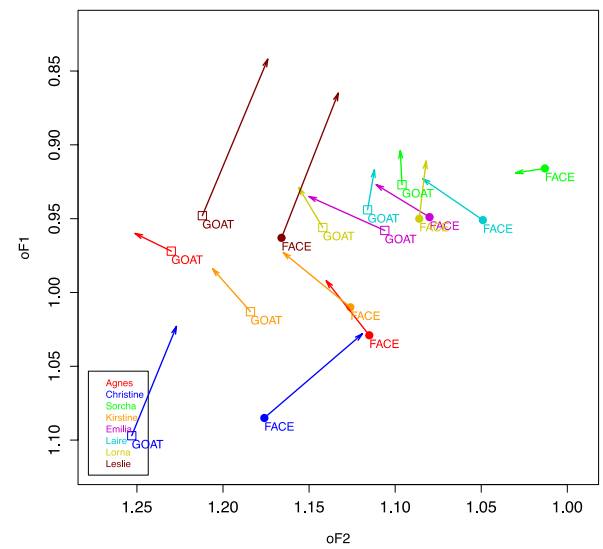
Normalised data: modified Watt & Fabricius method



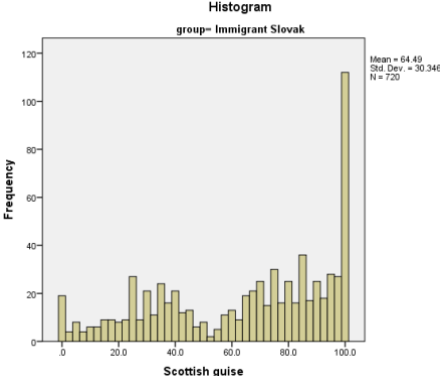
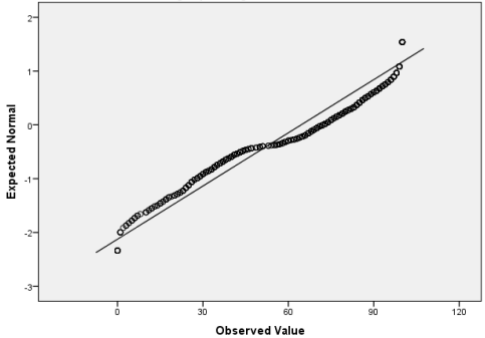
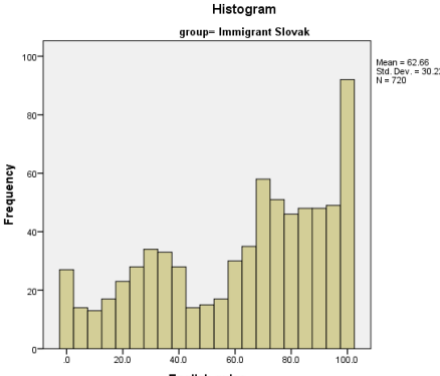
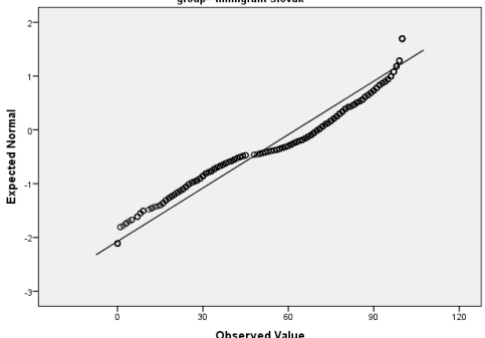
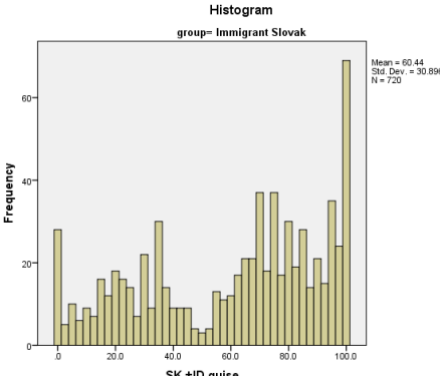
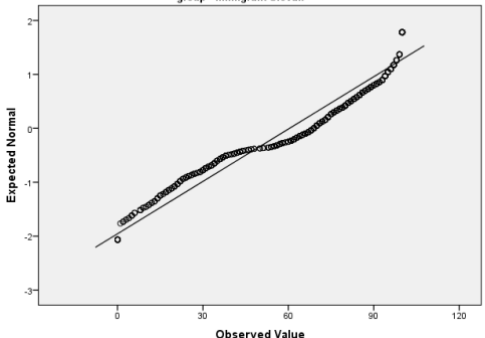
Normalised: Combined method, BmW&F



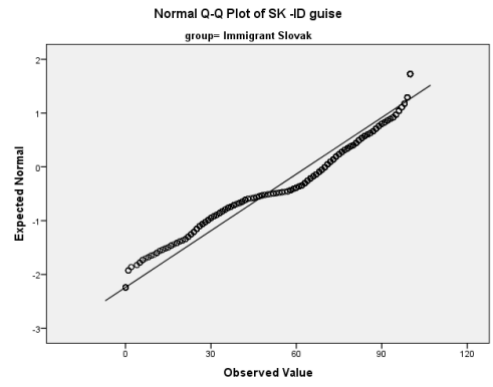
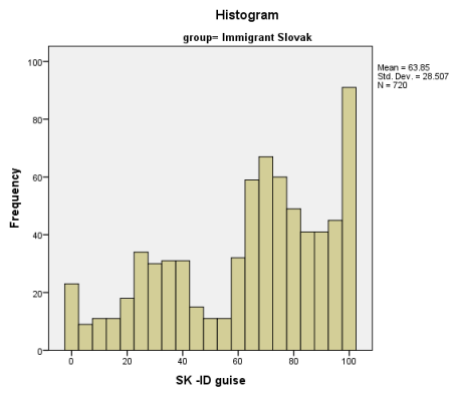
Normalised: Combined method, BmW&F



B3. Normality plots and statistics for VGT data – Immigrant Slovak, pre-transformation

Immigrant Slovak participant group: <i>before square-root transformation</i>		
Guise	Histogram	Normal Q-Q Plot
Scottish	 <p>Mean = 64.49 Std. Dev. = 30.346 N = 720</p>	
	Skewness: -0.506	Standard error: 0.091
		z-score: -5.560
English	 <p>Mean = 62.66 Std. Dev. = 30.22 N = 720</p>	
	Skewness: -0.506	Standard error: 0.091
		z-score: -5.560
SK +ID	 <p>Mean = 60.44 Std. Dev. = 30.896 N = 720</p>	
	Skewness: -0.447	Standard error: 0.091
		z-score: -4.912

SK -ID

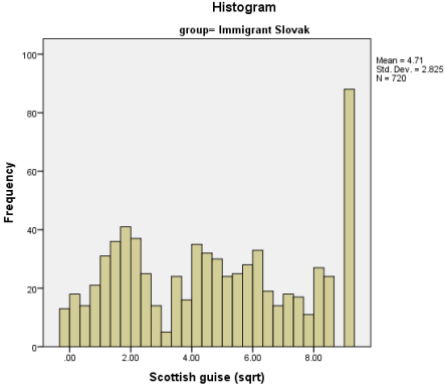
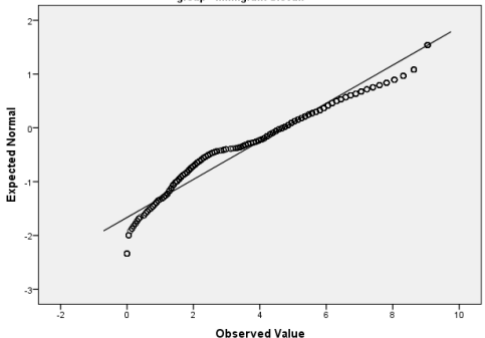
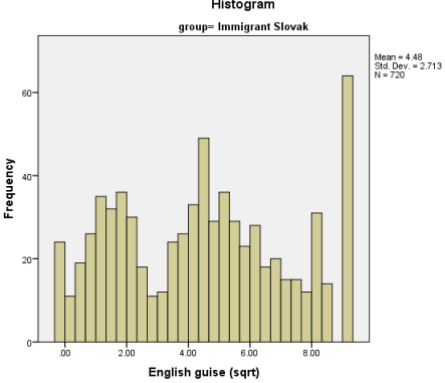
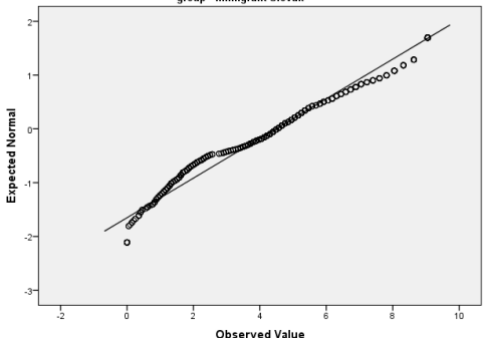
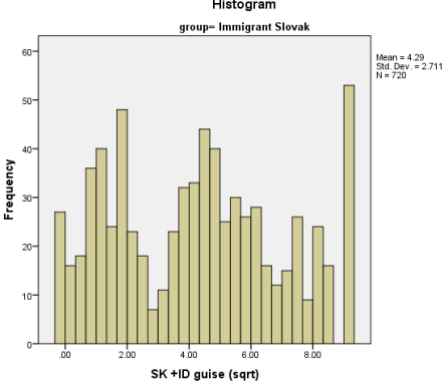
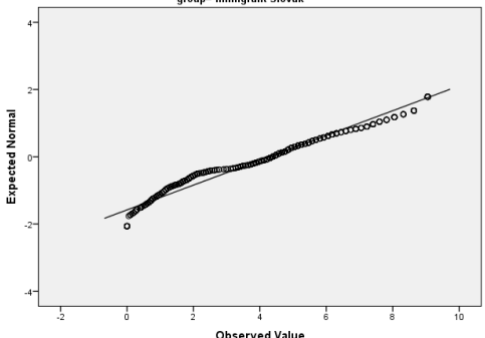


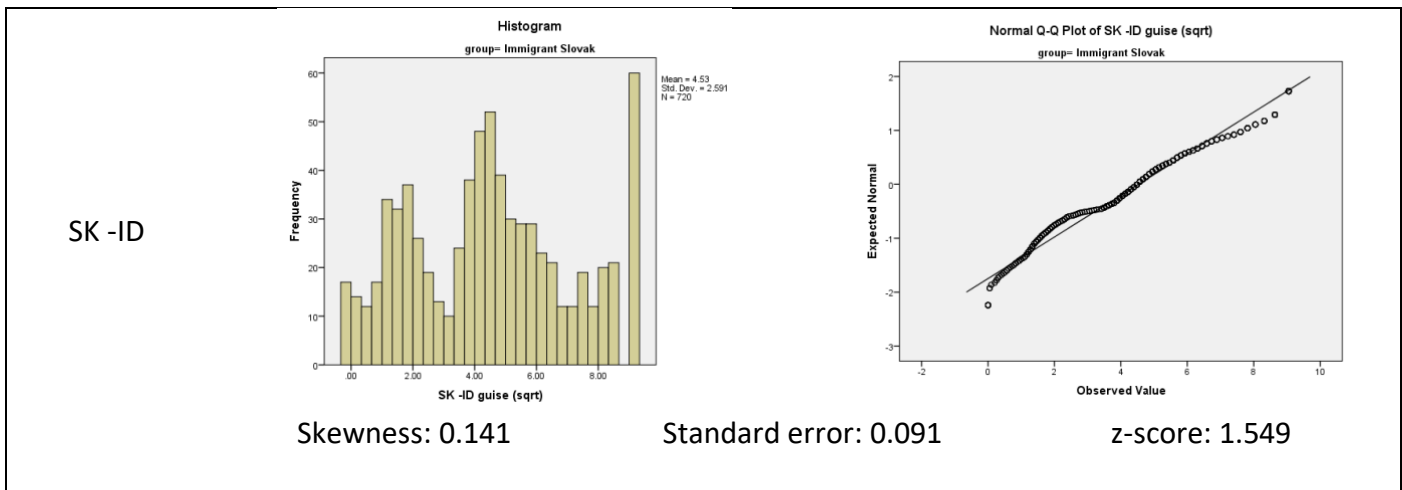
Skewness: -0.447

Standard error: 0.091

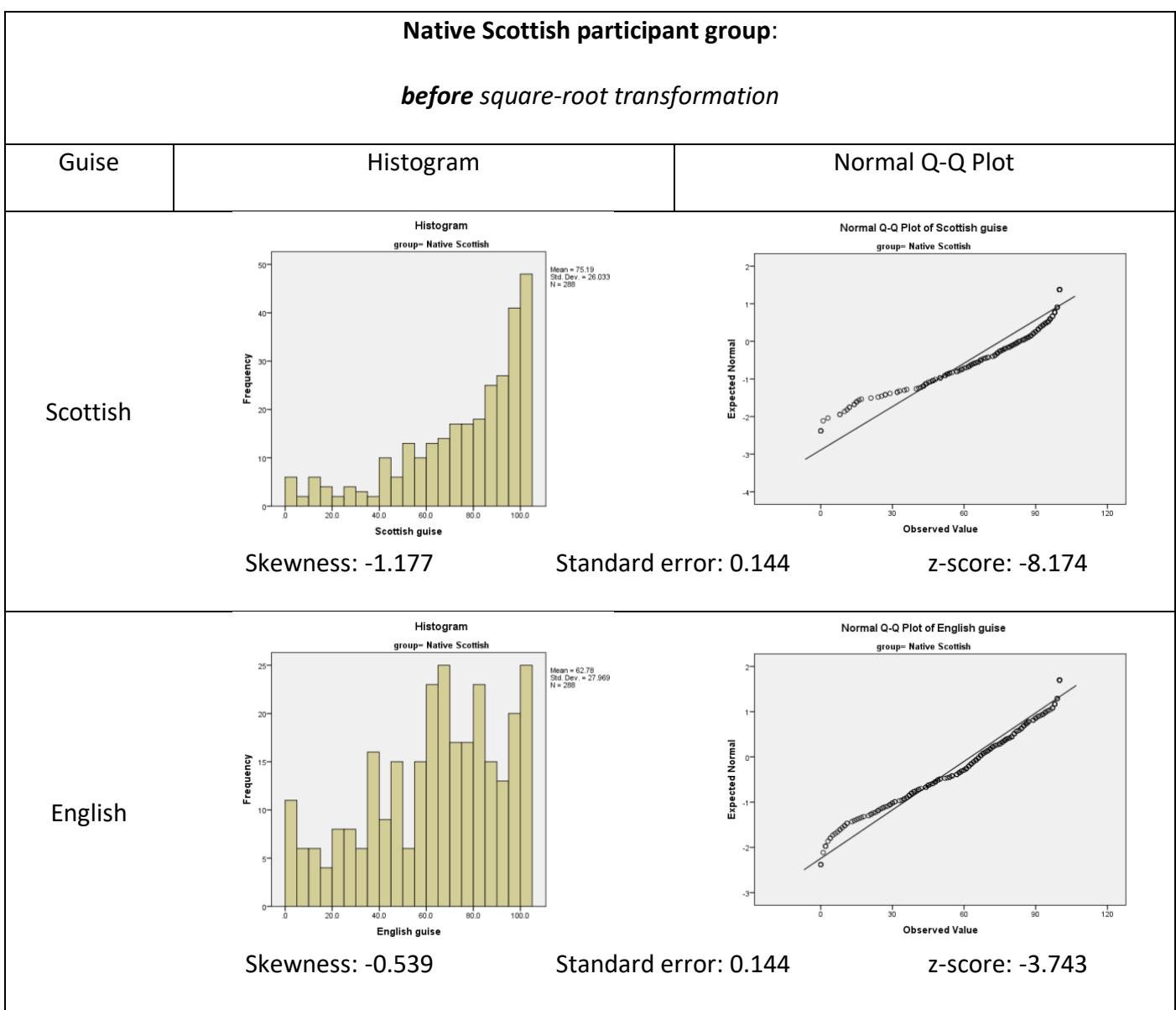
z-score: -4.912

B4. Normality plots and statistics for VGT data – Immigrant Slovak, post-transformation

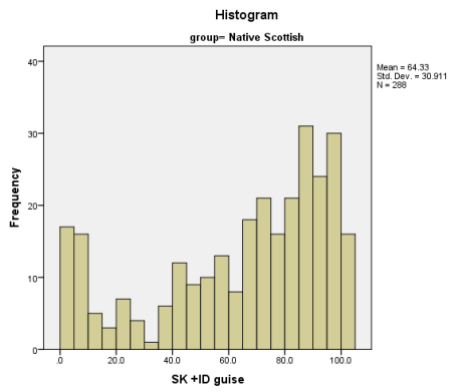
Immigrant Slovak participant group: <i>after square-root transformation</i>		
Guise	Histogram	Normal Q-Q Plot
Scottish	 <p>Mean = 4.71 Std. Dev. = 2.825 N = 720</p> <p>Skewness: 0.083</p>	 <p>z-score: 0.912</p>
English	 <p>Mean = 4.48 Std. Dev. = 2.713 N = 720</p> <p>Skewness: 0.111</p>	 <p>z-score: 1.220</p>
SK +ID	 <p>Mean = 4.29 Std. Dev. = 2.711 N = 720</p> <p>Skewness: 0.159</p>	 <p>z-score: 1.747</p>



B5. Normality plots and statistics for VGT data – Native Scottish, pre-transformation

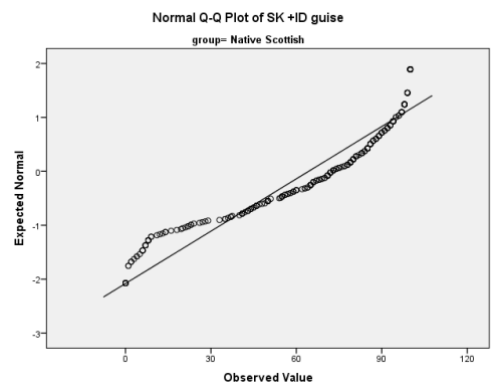


SK +ID



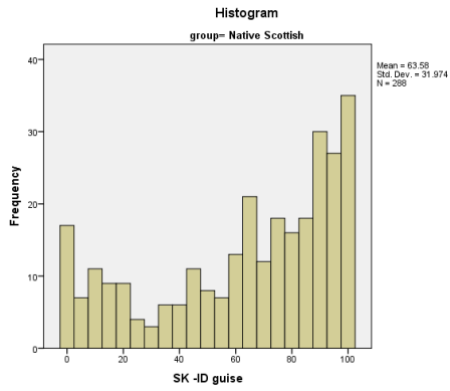
Skewness: -0.773

Standard error: 0.144



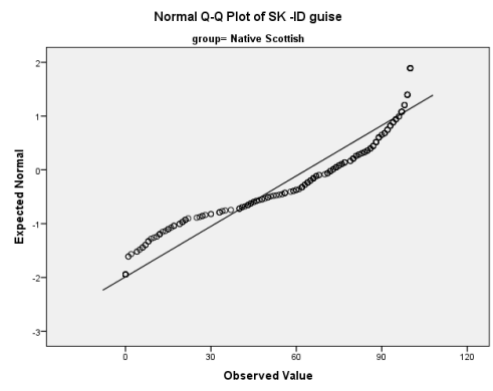
z-score: -5.368

SK -ID



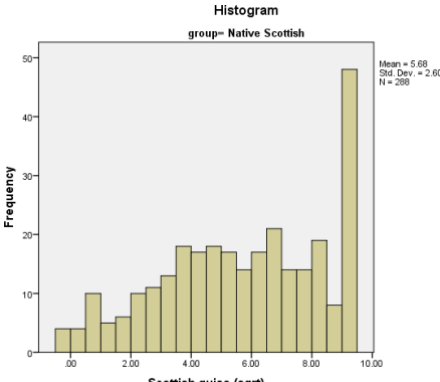
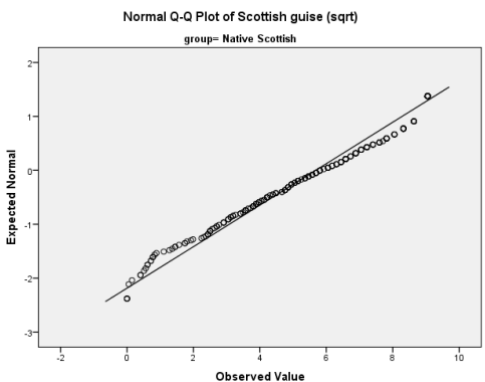
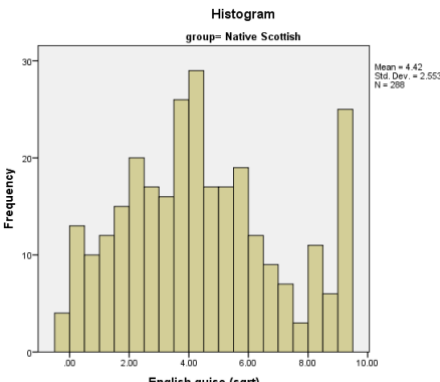
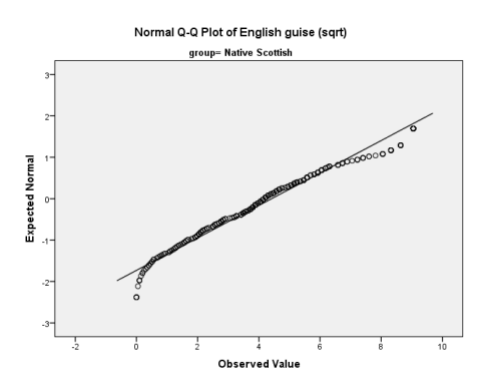
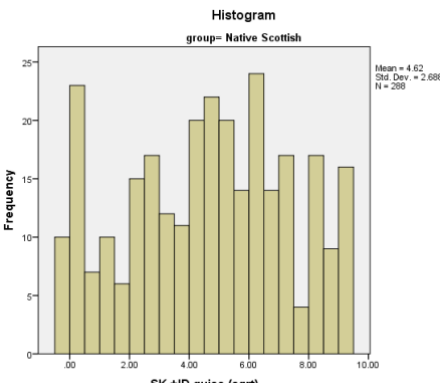
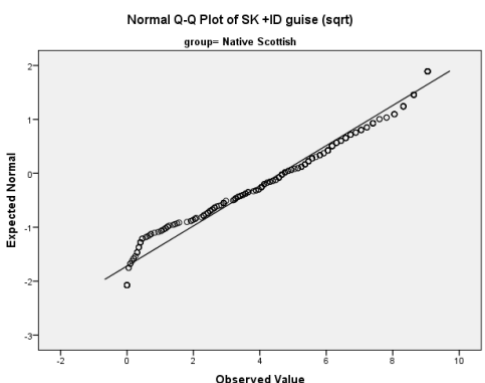
Skewness: -0.695

Standard error: 0.144

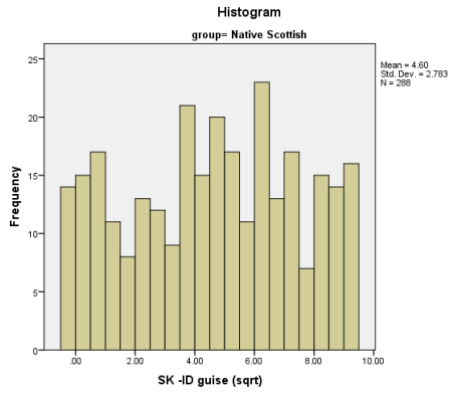


z-score: -4.826

B6. Normality plots and statistics for VGT data – Native Scottish, post-transformation

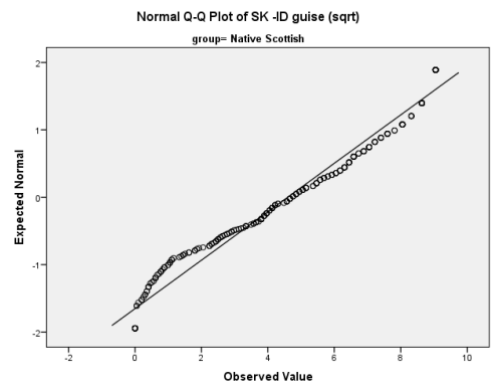
Native Scottish participant group: <i>after square-root transformation</i>		
Guise	Histogram	Normal Q-Q Plot
Scottish	 <p>Mean = 5.68 Std. Dev. = 2.60 N = 288</p>	
	Skewness: -0.363	Standard error: 0.144
		z-score: -2.521
English	 <p>Mean = 4.42 Std. Dev. = 2.553 N = 288</p>	
	Skewness: 0.260	Standard error: 0.144
		z-score: 1.806
SK +ID	 <p>Mean = 4.62 Std. Dev. = 2.688 N = 288</p>	
	Skewness: -0.125	Standard error: 0.144
		z-score: -0.868

SK -ID



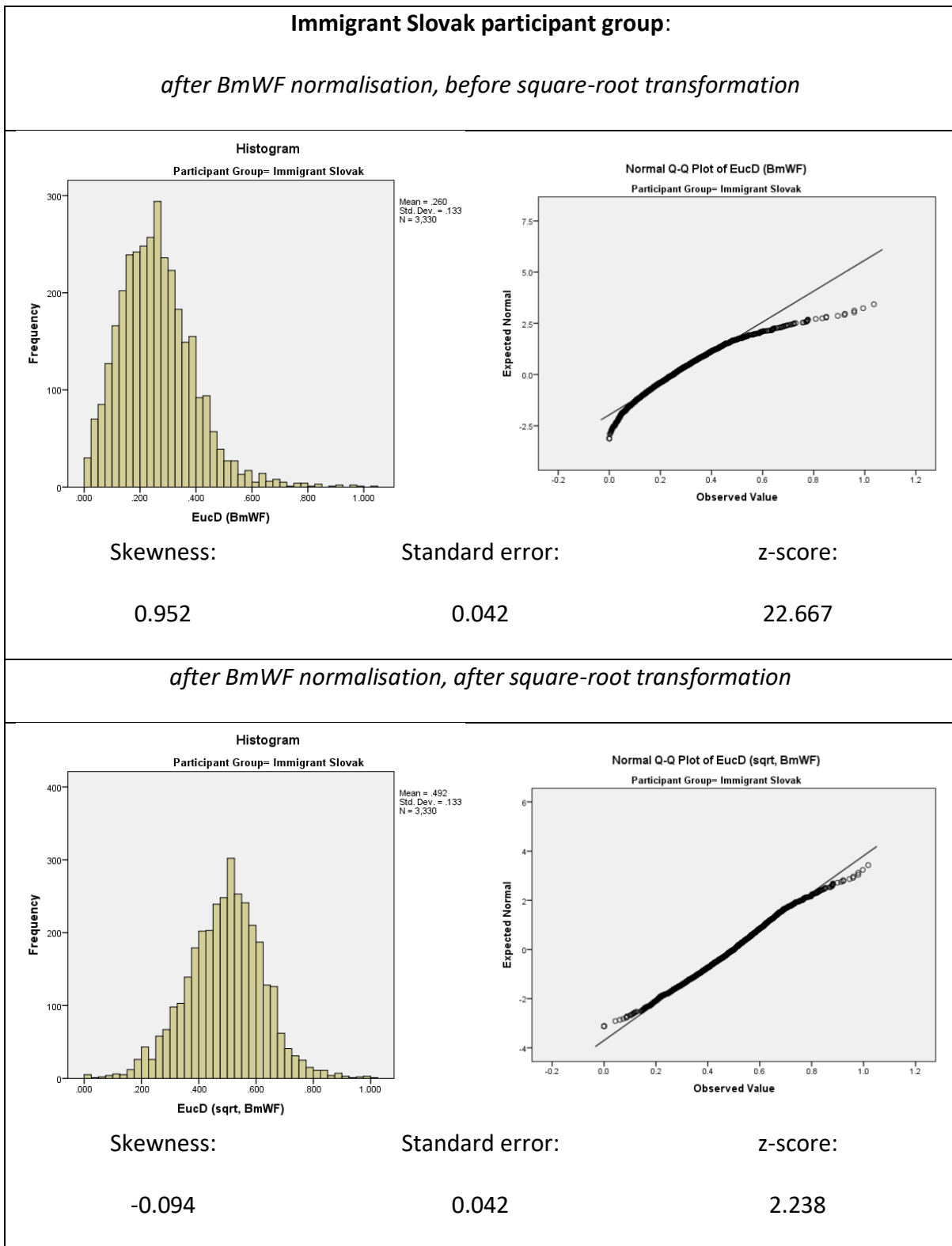
Skewness: -0.108

Standard error: 0.144

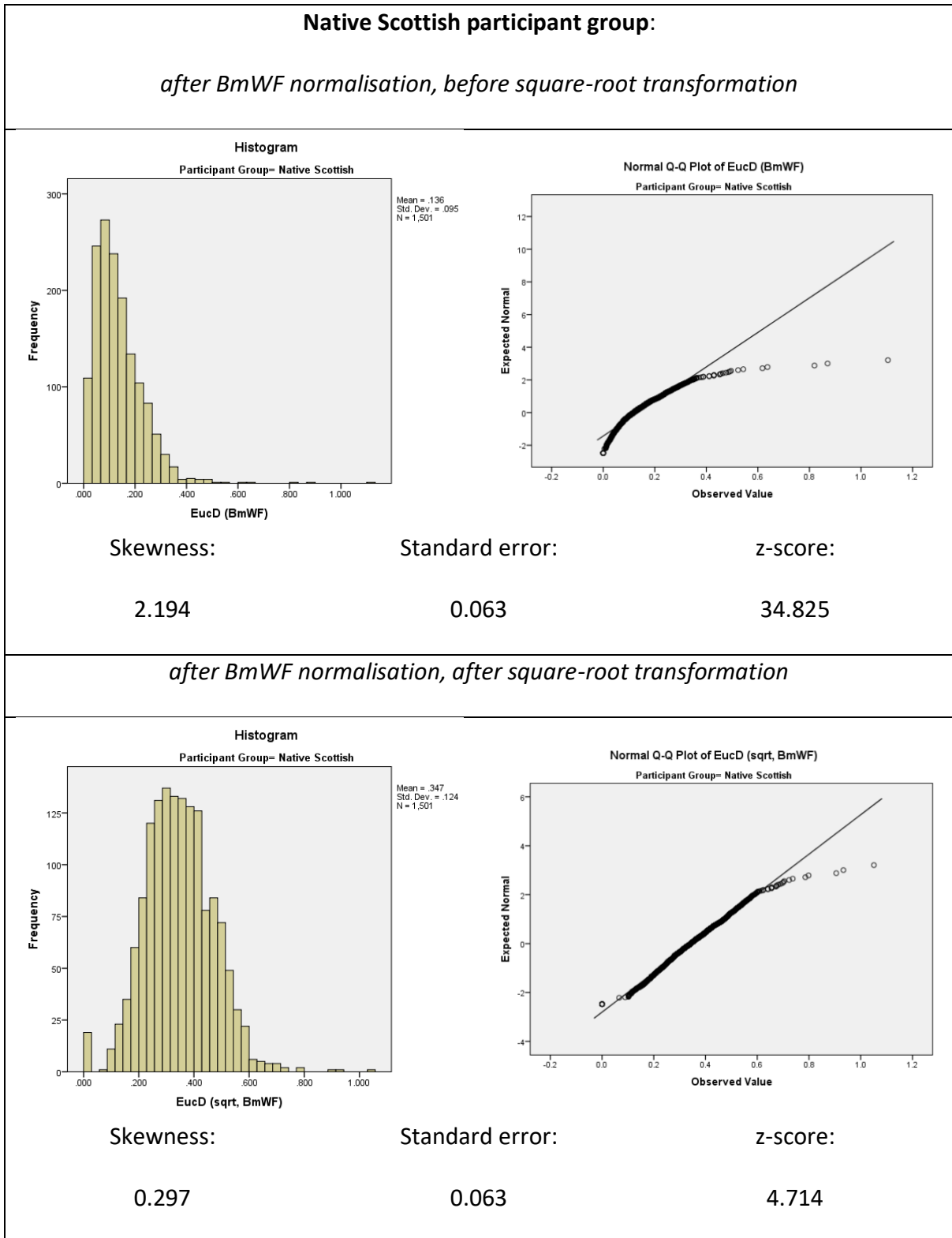


z-score: -0.750

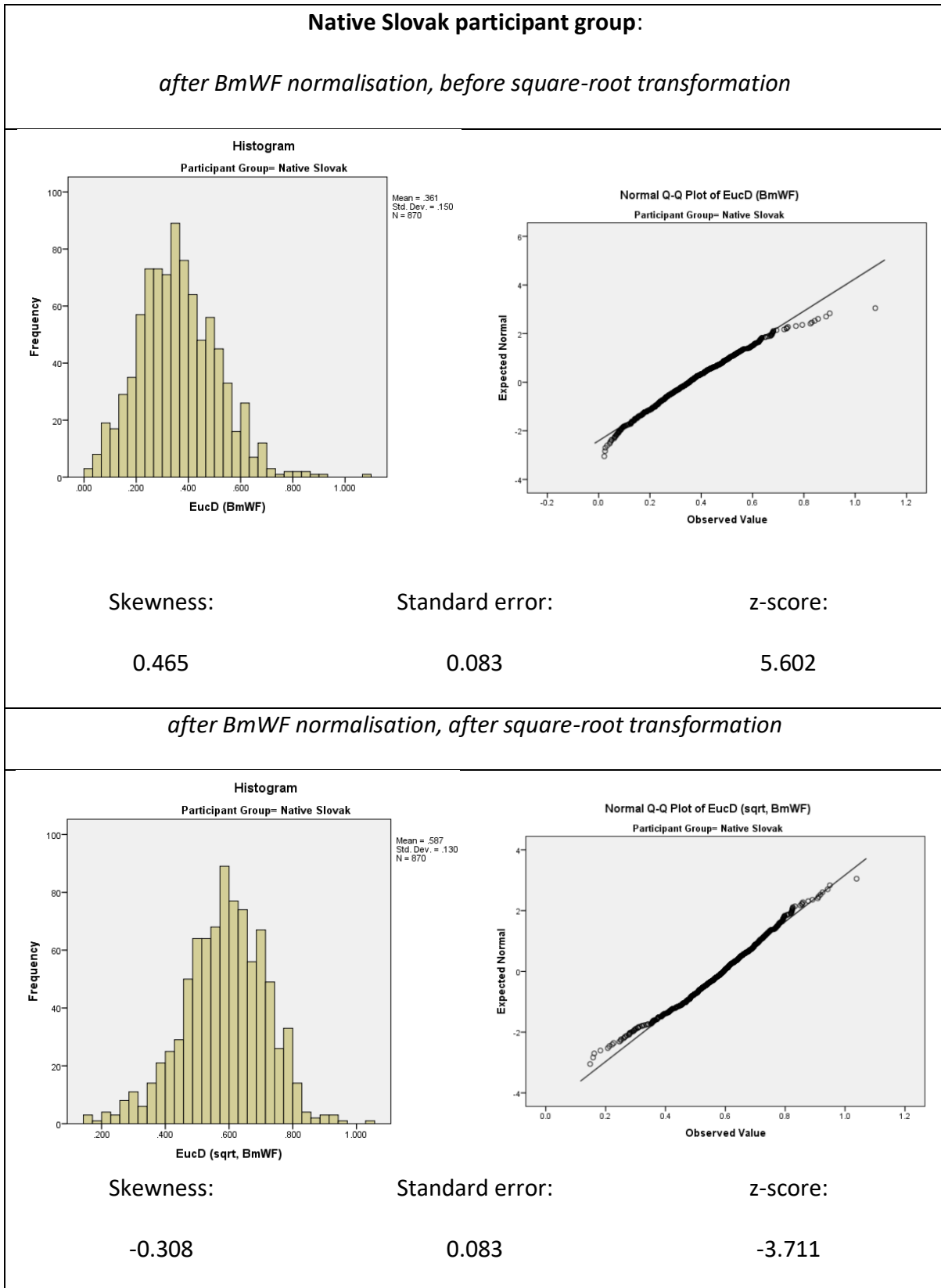
B7. Normality plots and statistics for vowel production data – Immigrant Slovak



B8. Normality plots and statistics for vowel production data – Native Scottish



B9. Normality plots and statistics for vowel production data – Native Slovak



Appendices C: Quantitative attitudes

C1. The mean evaluations and standard deviations for Slovak immigrants for individual traits (N=20)

	Scottish	SK +ID	SK -ID	English
Likable	5.25 (2.56)	4.55 (2.41)	4.72 (2.28)	4.34 (2.52)
Not-annoying	5.79 (2.64)	5.21 (2.52)	5.03 (2.35)	4.67 (2.56)
Not-foreign	6.01 (2.82)	3.75 (3.10)	3.94 (3.38)	4.80 (3.17)
Easy to understand	5.94 (2.52)	5.36 (2.67)	5.81 (2.31)	5.76 (2.39)
Elegant	3.48 (2.60)	3.35 (2.36)	3.81 (2.37)	3.90 (2.72)
Not-rough	4.14 (2.87)	5.00 (2.81)	5.29 (2.48)	5.08 (2.59)
Friendly	4.67 (2.49)	4.57 (2.42)	4.84 (2.18)	4.36 (2.56)
Posh	2.20 (2.13)	2.35 (2.27)	2.60 (2.29)	3.20 (2.70)
Pleasant	4.90 (2.46)	4.43 (2.41)	4.75 (2.12)	4.23 (2.47)

C2. Significant differences between guises for VGT traits, for immigrant Slovak participants.

Trait	df1	df2	F	p	Post-Hoc
<i>not-annoying</i>	3	316	84.71	.043	Bonferonni
<i>not-foreign*</i>	3	175.22	9.525	< .001	Games-Howell
<i>not-rough</i>	3	316	20.56	.038	Bonferroni

- C3. The mean evaluations and standard deviations for native Scottish speakers for individual traits (N=8)

	Scottish	SK +ID	SK -ID	English
Likeable	6.33 (2.08)	5.29 (1.94)	5.39 (2.35)	3.46 (1.77)
Not -annoying	6.78 (1.80)	5.73 (2.24)	5.59 (2.30)	3.72 (2.05)
Not-foreign	6.59 (3.00)	3.43 (3.56)	1.24 (1.65)	5.55 (3.14)
Easy to understand	7.10 (2.22)	5.92 (2.57)	5.89 (2.43)	6.34 (2.15)
Elegant	3.59 (2.50)	3.16 (2.24)	3.28 (1.96)	3.43 (2.51)
Not-rough	6.16 (2.22)	5.62 (2.53)	6.44 (2.24)	6.18 (2.46)
Friendly	6.07 (1.82)	4.98 (2.23)	5.29 (2.61)	3.65 (2.10)
Posh	2.64 (1.87)	2.55 (1.86)	2.62 (1.82)	3.80 (2.64)
Pleasant	5.88 (1.99)	4.92 (2.47)	5.66 (2.68)	3.61 (1.51)

- C4. Significant differences between guises for VGT traits, for native Scottish participants.

Trait	df1	df2	<i>F</i>	<i>p</i>	Post-Hoc
<i>likeable</i>	3	124	11.07	< .001	Bonferonni
<i>not-annoying</i>	3	124	11.68	< .001	Bonferonni
<i>not-foreign*</i>	3	65.21	33.86	< .001	Games-Howell
<i>friendly</i>	3	124	6.61	< .001	Bonferonni
<i>posh</i>	3	124	2.68	.05	Bonferonni
<i>pleasant*</i>	3	67.24	10.53	< .001	Games-Howell

C5. Rotated Component Matrices for immigrant Slovak and native Scottish participants.

C5.i: Rotated Component Matrix for Slovak immigrant participants

	Dimension	
	1	2
pleasant	.874	
likeable	.840	
not-annoying	.833	
friendly	.829	
easy-understand	.632	
not-rough	.540	
posh		.870
not-foreign		.689
elegant	.575	.639

C5.ii: Rotated Component Matrix for Scottish participants

	Dimension	
	1	2
pleasant	.899	
likeable	.893	
not-annoying	.890	
friendly	.873	
easy-understand	.636	.524
not-rough		.884
posh		.765
not-foreign	.527	.673
elegant		.519

C6. Mixed-effects model for immigrant Slovaks' guise scores – SOCIAL ATTRACTIVENESS dimension (scores square-root transformed, PARTICIPANT and SENTENCE as random intercepts)

	Factor	Coefficient	Tokens	Mean Score
ENGLISH guise				
English ID ($p = .003$)	continuous <i>range: 1-76</i>	0.046		
Scottish ID ($p = .007$)	continuous <i>range: 1-100</i>	0.045		
ScotAccent ($p = .011$)	continuous <i>range: 0-100</i>	0.042		
Engl with Friends ($p = .033$)	continuous <i>range: 25-100</i>	-0.033		
Not significant:	<i>accent aim, before/after 2004, decision to remain in Scotland, English use at home, LOR, European ID score, age of arrival, Slovak ID score, age of first English instruction</i>			
Model:	n = 480 Intercept = 5.543	df = 19 LL = -1024.406	Mean = 4.739	
SCOTTISH guise				
English ID ($p < .001$)	continuous <i>range: 1-76</i>	0.040		
Engl with Friends ($p < .001$)	continuous <i>range: 25-100</i>	-0.041		
LOR ($p = .003$)	continuous <i>range: 5-18</i>	0.188		
B/A 2004 ($p = .021$)	Before 2004 After 2004	0.716 -0.716	312 168	4.909 5.495
Not significant:	<i>decision to remain in Scotland, age of first English instruction, age of arrival, accent aim, Scottish ID score, English use at home, European ID score, Scottish accent self-evaluation, Slovak ID score</i>			
Model:	n = 480 Intercept = 3.142	df = 19 LL = -1073.669	Mean = 5.114	
SK +ID guise				
Engl with Friends ($p = .003$)	continuous <i>range: 25-100</i>	-0.047		
English ID ($p = .014$)	continuous <i>range: 1-76</i>	0.035		
European ID ($p = .015$)	continuous <i>range: 23-100</i>	-0.042		
Accent Aim ($p = .033$)	English Scottish Other	-0.279 -1.573 1.852	312 120 48	4.555 5.420 5.385
Not significant:	<i>Scottish accent self-evaluation, Scottish ID score, age of arrival, English use at home, age of first English instruction, decision to remain in Scotland, Slovak ID score, LOR, before/after 2004</i>			
Model:	n = 480 Intercept = 8.187	df = 19 LL = -976.377	Mean = 4.584	
SK -ID guise				
English ID ($p = .027$)	continuous <i>range: 1-76</i>	0.032		
Not significant:	<i>Scottish ID score, English use with friends, before/after 2004, European ID score, decision to remain in Scotland, Scottish accent self-evaluation, age of arrival, LOR, English use at home, age of first English instruction, Slovak ID score, accent aim</i>			
Model:	n = 480 Intercept = 6.965	df = 19 LL = -985.07	Mean = 5.074	

C7. Mixed-effects model for immigrant Slovaks' guise scores – PRESTIGE dimension (scores square-root transformed, PARTICIPANT and SENTENCE as random intercepts)

	Factor	Coefficient	Tokens	Mean Score
ENGLISH guise				
LOR ($p = .017$)	continuous <i>range: 5-18</i>	-0.251		
Not significant:	<i>Scottish accent self-evaluation, English ID score, Scottish ID score, English use with friends, European ID score, before/after 2004, accent aim, age of arrival, age of first English instruction, decision to remain in Scotland, English use at home, Slovak ID score</i>			
Model:	n = 240 Intercept = 4.694	df = 19 LL = -549.521	Mean = 3.970	
SCOTTISH guise				
Scottish ID ($p = .009$)	continuous <i>range: 1-100</i>	0.048		
ScotAccent ($p = .043$)	continuous <i>range: 0-100</i>	0.036		
Not significant:	<i>decision to remain in Scotland, before/after 2004, accent aim, English ID score, Slovak ID score, LOR, English use at home, age of arrival, age of first English instruction, English use with friends, European ID score</i>			
Model:	n = 240 Intercept = 3.227	df = 19 LL = -588.262	Mean = 3.895	
SK +ID guise				
ScotAccent ($p < .001$)	continuous <i>range: 0-100</i>	0.060		
Scottish ID ($p = .004$)	continuous <i>range: 1-100</i>	0.043		
Remain in Scot ($p = .030$)	Yes	-1.237	180	3.309
	No	0.503	48	2.462
	Unsure	0.734	12	3.551
Not significant:	<i>English ID score, accent aim, English use at home, before/after 2004, age of arrival, LOR, European ID score, English use with friends, age of first English instruction, Slovak ID score</i>			
Model:	n = 240 Intercept = 3.880	df = 19 LL = -535.334	Mean = 3.151	
SK -ID guise				
ScotAccent ($p < .001$)	continuous <i>range: 0-100</i>	0.062		
Accent Aim ($p = .004$)	English	0.156	156	3.396
	Scottish	-2.310	60	3.828
	Other	2.154	24	2.832
Scottish ID ($p = .006$)	continuous <i>range: 1-100</i>	0.043		
European ID ($p = .018$)	continuous <i>range: 23-100</i>	-0.040		
Slovak ID ($p = .018$)	continuous <i>range: 25-100</i>	-0.041		
LOR ($p = .045$)	continuous <i>range: 5-18</i>	-0.177		
Engl at Home ($p = .047$)	continuous <i>range: 0-100</i>	-0.018		
Not significant:	<i>decision to remain in Scotland, age of arrival, English ID score, age of first English instruction, before/after 2004, English use with friends</i>			
Model:	n = 240 Int = 10.294	df = 19 LL = -551.804	Mean = 3.448	

C8. Mixed-effects model for native Scottish participants' guise scores – SOCIAL ATTRACTIVENESS dimension (scores square-root transformed, PARTICIPANT and SENTENCE as random intercepts)

	Factor	Coefficient	Tokens	Mean Score
ENGLISH guise				
[no statistically significant predictors]				
Not significant:	<i>European ID score, Scottish ID score, age, English ID score</i>			
Model:	n = 160	df = 8	Mean = 4.157	
	Int = -3.331	LL = -346.208		
SCOTTISH guise				
Scottish ID (<i>p</i> = .033)	continuous <i>range</i> : 88-100	0.288		
Not significant:	<i>European ID score, English ID score, age</i>			
Model:	n = 160	df = 8	Mean = 6.432	
	Int = -22.488	LL = -293.610		
SK +ID guise				
[no statistically significant predictors]				
Not significant:	<i>English ID score, European ID score, Scottish ID score, age</i>			
Model:	n = 160	df = 8	Mean = 5.367	
	Int = -11.631	LL = -339.051		
SK -ID guise				
English ID (<i>p</i> = .002)	continuous <i>range</i> : 0-73	-0.043		
European ID (<i>p</i> = .038)	continuous <i>range</i> : 0-79	0.038		
Scottish ID (<i>p</i> = .044)	continuous <i>range</i> : 88-100	0.288		
Not significant:	<i>age</i>			
Model:	n = 160	df = 8	Mean = 5.564	
	Int = -19.456	LL = -295.817		

C9. Mixed-effects model for native Scottish participants' guise scores – PRESTIGE dimension (scores square-root transformed, PARTICIPANT and SENTENCE as random intercepts)

	Factor	Coefficient	Tokens	Mean Score
ENGLISH guise				
English ID ($p = .010$)	continuous <i>range: 0-73</i>	-0.034		
Not significant:	<i>age, Scottish ID score, European ID score</i>			
Model:	n = 128 Int = -6.767	df = 8 LL = -300.130	Mean = 4.743	
SCOTTISH guise				
[no statistically significant predictors]				
Not significant:	<i>European ID score, Scottish ID score, English ID score, age</i>			
Model:	n = 128 Int = -9.935	df = 8 LL = -302.630	Mean = 4.746	
SK +ID guise				
English ID ($p = .019$)	continuous <i>range: 0-73</i>	-0.025		
Not significant:	<i>European ID score, Scottish ID score, age</i>			
Model:	n = 128 Int = -0.306	df = 8 LL = -306.024	Mean = 3.689	
SK -ID guise				
English ID ($p = .002$)	continuous <i>range: 0-73</i>	-0.032		
Age ($p = .003$)	continuous <i>range: 22-46</i>	-0.136		
Not significant:	<i>Scottish ID score, European ID score</i>			
Model:	n = 128 Int = -6.767	df = 8 LL = -300.130	Mean = 4.743	

C10. Significance results (*p*-values) for secondary regression model for immigrant Slovak participants (scores square-root transformed, PARTICIPANT and SENTENCE as random intercepts)

Factor		AGE	
Dimension		SOCIAL ATTRACTIVENESS	PRESTIGE
Guise	ENGLISH	<i>p</i> = .930	<i>p</i> = .989
	SCOTTISH	<i>p</i> = .157	<i>p</i> = .986
	SK +ID	<i>p</i> = .454	<i>p</i> = .293
	SK -ID	<i>p</i> = .848	<i>p</i> = .341
Factor		YEARS OF ENGLISH INSTRUCTION	
Dimension		SOCIAL ATTRACTIVENESS	PRESTIGE
Guise	ENGLISH	<i>p</i> = .313	<i>p</i> = .599
	SCOTTISH	<i>p</i> = .235	<i>p</i> = .574
	SK +ID	<i>p</i> = .435	<i>p</i> = .506
	SK -ID	<i>p</i> = .360	<i>p</i> = .313

- C11. Between-subjects effects for length of residence (LOR), age of participant (AGE), years of English language instruction (INSTRUCTION), and self-perceived Scottish accent scores (SCOTACCENT) on guise scores, for **Slovak immigrant participants** across **both dimensions**.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
LOR	Scottish	30.310	1	30.310	4.109	.043	.006
	English	19.553	1	19.553	2.883	.090	.004
	SK +ID	44.427	1	44.427	6.720	.010	.009
	SK -ID	92.829	1	92.829	14.769	.000	.020
AGE	Scottish	254.762	1	254.762	34.539	.000	.046
	English	141.369	1	141.369	20.843	.000	.028
	SK +ID	183.807	1	183.807	27.804	.000	.037
	SK -ID	86.896	1	86.896	13.825	.000	.019
INSTRUCTION	Scottish	140.028	1	140.028	18.984	.000	.026
	English	102.857	1	102.857	15.165	.000	.021
	SK +ID	145.793	1	145.793	22.054	.000	.030
	SK -ID	30.730	1	30.730	4.889	.027	.007
SCOTACCENT	Scottish	.952	1	.952	.129	.720	.000
	English	77.722	1	77.722	11.459	.001	.016
	SK +ID	122.270	1	122.270	18.496	.000	.025
	SK -ID	138.307	1	138.307	22.005	.000	.030
Error	Scottish	5273.837	715	7.376			
	English	4849.643	715	6.783			
	SK +ID	4726.707	715	6.611			
	SK -ID	4493.993	715	6.285			

C12. Between-subjects effects for length of residence (LOR), age of participant (AGE), years of English language instruction (INSTRUCTION), and self-perceived Scottish accent scores (SCOTACCENT) on guise scores, for **Slovak immigrant participants** and the *social attractiveness* dimension only.

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
AGE	Scottish	181.304	1	181.304	29.382	.000	.058
	English	85.102	1	85.102	14.455	.000	.030
	SK +ID	165.449	1	165.449	29.905	.000	.059
	SK -ID	49.694	1	49.694	10.135	.002	.021
LOR	Scottish	1.335	1	1.335	.216	.642	.000
	English	1.471	1	1.471	.250	.617	.001
	SK +ID	4.262	1	4.262	.770	.381	.002
	SK -ID	5.836	1	5.836	1.190	.276	.002
INSTRUCTION	Scottish	140.241	1	140.241	22.728	.000	.046
	English	90.112	1	90.112	15.306	.000	.031
	SK +ID	174.726	1	174.726	31.582	.000	.062
	SK -ID	57.280	1	57.280	11.683	.001	.024
SCOTACCENT	Scottish	1.503	1	1.503	.244	.622	.001
	English	45.580	1	45.580	7.742	.006	.016
	SK +ID	29.616	1	29.616	5.353	.021	.011
	SK -ID	60.275	1	60.275	12.293	.000	.025
Error	Scottish	2931.005	475	6.171			
	English	2796.547	475	5.887			
	SK +ID	2627.911	475	5.532			
	SK -ID	2328.947	475	4.903			

- C13. Between-subjects effects for length of residence (LOR), age of participant (AGE), years of English language instruction (INSTRUCTION), and self-perceived Scottish accent scores (SCOTACCENT) on guise scores, for **Slovak immigrant participants** and the *prestige dimension* only.

Tests of Between-Subjects Effects

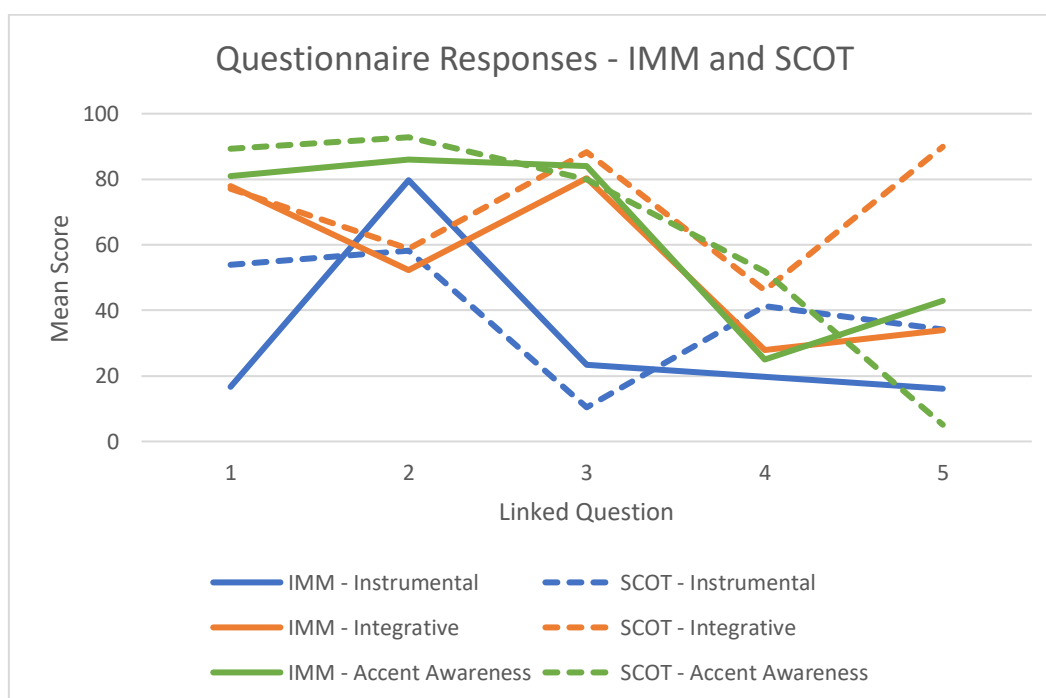
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
AGE	Scottish	74.019	1	74.019	8.684	.004	.036
	English	56.967	1	56.967	6.953	.009	.029
	SK +ID	28.003	1	28.003	4.536	.034	.019
	SK -ID	38.149	1	38.149	5.793	.017	.024
LOR	Scottish	62.439	1	62.439	7.325	.007	.030
	English	35.324	1	35.324	4.311	.039	.018
	SK +ID	74.390	1	74.390	12.051	.001	.049
	SK -ID	176.129	1	176.129	26.744	.000	.102
INSTRUCTION	Scottish	14.050	1	14.050	1.648	.200	.007
	English	17.152	1	17.152	2.093	.149	.009
	SK +ID	4.928	1	4.928	.798	.372	.003
	SK -ID	1.214	1	1.214	.184	.668	.001
SCOTACCENT	Scottish	11.722	1	11.722	1.375	.242	.006
	English	32.741	1	32.741	3.996	.047	.017
	SK +ID	131.241	1	131.241	21.261	.000	.083
	SK -ID	88.173	1	88.173	13.388	.000	.054
Error	Scottish	2003.095	235	8.524			
	English	1925.413	235	8.193			
	SK +ID	1450.633	235	6.173			
	SK -ID	1547.672	235	6.586			

Appendices D: Qualitative attitudes

D1. Attitude statement responses for selected “linked” Integrative, instrumental, and accent awareness statements, with mean scores, for immigrant Slovak and native Scottish participant groups.

Immigrant Slovak participants					
	1	2	3	4	5
Instrumental	Q2 $\bar{x} = 16.7$	Q6 $\bar{x} = 79.7$	Q18 $\bar{x} = 23.3$	Q19 $\bar{x} = 19.7$	Q24 $\bar{x} = 16.1$
Integrative	Q3 $\bar{x} = 77.9$	Q7 $\bar{x} = 52.2$	Q13 $\bar{x} = 80.3$	Q23 $\bar{x} = 27.9$	Q26* $\bar{x} = 33.9$
Accent Awareness	Q1 $\bar{x} = 81.0$	Q4 $\bar{x} = 86.0$	Q8 $\bar{x} = 84.0$	Q11 $\bar{x} = 25.0$	Q12 $\bar{x} = 43.0$
Native Scottish participants					
	1	2	3	4	5
Instrumental	Q2 $\bar{x} = 53.9$	Q6 $\bar{x} = 58.2$	Q13 $\bar{x} = 10.4$	Q14 $\bar{x} = 41.2$	Q18 $\bar{x} = 34.2$
Integrative	Q3 $\bar{x} = 77.0$	Q7 $\bar{x} = 58.8$	Q10 $\bar{x} = 88.3$	Q17 $\bar{x} = 46.1$	Q19* $\bar{x} = 89.9$
Accent Awareness	Q1 $\bar{x} = 89.3$	Q4 $\bar{x} = 92.8$	Q8 $\bar{x} = 80.0$	Q9 $\bar{x} = 51.8$	Q11 $\bar{x} = 5.1$

D2. Graphical representation of results from questionnaire attitude prompts outlined in D1.



Appendices E: Production

E1. Multiple regression model for immigrant Slovak participants, with PARTICIPANT and WORD as random intercepts (EucD, *B-mWF* normalised, square-root transformed)

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovaks (IMM)				
Style ($p < .001$)	Interview	-0.052	743	0.452
	Reading	-0.012	1369	0.464
	Wordlist	0.064	1218	0.550
LOR ($p < .001$)	continuous <i>range: 5-18</i>	0.015		
Proficiency Diff ($p < .001$)	continuous <i>range: -9-89</i>	0.001		
English at Home ($p < .001$)	continuous <i>range: 0-100</i>	-0.001		
Age of Engl Inst ($p < .001$)	continuous <i>range: 4-30</i>	-0.004		
Remain in Scot ($p < .001$)	Yes	-0.027	2469	0.482
	No	0.040	703	0.526
	Unsure	-0.013	158	0.506
European ID ($p = .001$)	continuous <i>range: 23-100</i>	0.001		
English ID ($p = .002$)	continuous <i>range: 0-76</i>	-0.001		
Scottish ID ($p = .003$)	continuous <i>range: 1-100</i>	-0.001		
Engl with Friends ($p = .006$)	continuous <i>range: 25-100</i>	0.001		
Slovak ID ($p = .009$)	continuous <i>range: 0-100</i>	-0.001		
ScotAccent ($p = .016$)	continuous <i>range: 0-100</i>	0.001		
B/A 2004 ($p = .023$)	Before 2004	-0.016	1143	0.509
	After 2004	0.016	2187	0.484
Accent Aim ($p = .028$)	Scottish	-0.047	813	0.475
	English	0.020	2193	0.493
	Other	0.027	324	0.529
Not significant:	<i>English proficiency at testing, frequency, lexical set, age of arrival, following environment</i>			
Model:	n = 3330	df = 28	Mean = 0.492	SD = 0.133
	Intercept = 0.231	LL = 2505.633		

- E2. Multiple regression model for all participants, with PARTICIPANT and WORD as random intercepts (EucD, *B-mWF* normalised, square-root transformed)

Factor	Level	Coefficient	Tokens	Mean EucD
All Participants				
Style ($p < .001$)	Interview	-0.034	1211	0.435
	Reading	-0.007	2331	0.455
	Wordlist	0.040	2067	0.509
Group ($p < .001$)	Slovak Imm.	0.015	3330	0.492
	Scottish Natives	-0.127	1409	0.348
	Slovak Natives	0.113	870	0.587
Not Significant:	<i>frequency, lexical set, following environment, age</i>			
Model:	n = 5609	df = 14	Mean = 0.499	SD = 0.152
	Intercept = 0.471	LL = 3886.254		

- E3. Multiple regression model for native Scottish and native Slovak participants, with PARTICIPANT and WORD as random intercepts (EucD, *B-mWF* normalised, square-root transformed)

Factor	Level	Coefficient	Tokens	Mean EucD
Native Scottish				
Following Env ($p < .001$)	[d]	0.007	415	0.351
	[k]	0.001	316	0.355
	[t]	0.024	251	0.378
	#	-0.033	427	0.321
Scottish ID ($p = .001$)	continuous <i>range: 88-100</i>	-0.010		
European ID ($p = .003$)	continuous <i>range: 0-79</i>	-0.001		
Not Significant:	<i>English ID, frequency, age, style, lexical set</i>			
Model:	n = 1409	df = 15	Mean = 0.348	SD = 0.124
	Intercept = 1.352	LL = 992.116		
Native Slovak				
Following Env ($p = .001$)	[d]	-0.009	265	0.579
	[k]	-0.021	210	0.569
	[t]	0.030	189	0.618
	#	0.000	206	0.587
Not significant:	<i>age, frequency, years of English instruction, lexical set, style</i>			
Model:	n = 870	df = 13	Mean = 0.587	SD = 0.130
	Intercept = 0.798	LL = 579.525		

- E4. Multiple regression model for immigrant Slovak and native Scottish participants incorporating factors that were removed from the original analyses due to multicollinearity. Also incorporating summary statistics from the vocabulary task as factors. Factors PARTICIPANT and WORD as random intercepts. (EucD, *B-mWF* normalised, square-root transformed)

Factor	Level	Coefficient	Tokens	Mean EucD
Immigrant Slovak participants				
Years of Inst ($p = .034$)	continuous	0.003		
Active Use ($p = .036$)	continuous	-0.017		
Passive Aware ($p = .038$)	continuous	0.010		
Not Significant:	<i>age, proficiency at immigration</i>			
Model:	n = 3330 Intercept = 0.341	df = 9 LL = 2375.035	Mean = 0.492	SD = 0.133
<hr/>				
Factor	Level	Coefficient	Tokens	Mean EucD
Native Scottish participants				
<i>No significant factors</i>				
Not Significant:	<i>active use, passive awareness, age</i>			
Model:	n = 1409 Intercept = 0.549	df = 8 LL = 1042.226	Mean = 0.348	SD = 0.124

E5. Mean EucD scores for vowel productions across all participant groups, including recordings from *face2face* instructional material and the Slovak national corpus

