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**Master's Thesis**

# PHONETIC TRACES OF AMERICAN ENGLISH IN THE UKRAINIAN LANGUAGE OF L2 SPEAKER: A CASE STUDY

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# INTRODUCTION

Phonology plays a crucial role in understanding the pronunciation of words and uncovering the underlying meanings behind them. Now, against the backdrop of the current socio-political context, there has been a significant surge in interest in the Ukrainian language, with foreigners enthusiastically embarking on its acquisition as a symbol of the strength and freedom exhibited by the Ukrainian people. However, online resources addressing the acquisition of adequate phonetic skills are severely lacking, partly due to challenges arising from the absence of standardized coding of sounds using IPA symbols. Furthermore, existing research on the topic is outdated and limited in scope, highlighting the pressing need to investigate language interaction and contact. Notably, there is a dearth of freely accessible data regarding how Ukrainian sounds are pronounced under the influence of foreign accents.

**The topicality** of the study lies in the analysis of the influence of American English on Ukrainian L2 speakers' pronunciation, revealing information on language transfer and the impact of English as a global language on other linguistic patterns. The case study is essential for understanding the phonetic impacts of language contact in the Ukrainian context, intercultural communication, and foreign language acquisition.

**The purpose** of the paper is to examine and document the specific phonetic changes and influences that occur in the Ukrainian language of L2 speakers as a result of exposure to American English.

The following **tasks** should be accomplished in order to accomplish the paper's objective**:**

- to establish a theoretical framework for the research based on a careful analysis of the data present in the specialized literature;

- to design and implement a case study methodology to investigate the specific phonetic traces of American English in the pronunciation of Ukrainian L2 speakers;
- to collect and analyze data through recordings to document the phonetic features influenced by American English.
- to apply phonetic analysis to identify the sounds produced by an L2 speaker;
- to interpret and discuss the findings within the theoretical framework.

**The object** of the research is the American accent in the Ukrainian language.

**The subject** of the research is the phonemes of AAVE that are resilient to alterations.

The interview “Джуда про українок, расизм і про те, чому іноземці їдуть навчатися в Україну. Зе Інтерв‘юєр” (“Judah on Ukrainian women, racism, and why foreigners come to study in Ukraine. The Interviewer”) posted on 26.12.2020 constitutes **the material** of the research.

**The methodology** of the research is a synthesis of direct observation, transcription, and processing that serves as a basis for the recognition of specific elements of speech without necessarily interfering with it.

**The scientific novelty** of the paper lies in the comprehensive examination of phonological properties of Ukrainian vowels impacted by an African American pronunciation.

**The practical value** of the research aims to reach a better level of understanding the concepts of language transfer and contact phenomena in the linguistic context of interaction between American English and Ukrainian. It can

be used to help identify general trends or patterns within the Ukrainian L2 phonetical context.

The objective of the study along with its goals affect the format and scope of the research. The master's thesis is divided into three sections. The first one consists of eight parts and focuses on the theoretical basis of the study. The second section provides information on the concepts of data collecting and research technique. The third and last part which is divided into three subsections, offers an acoustic analysis to identify the phonological idiosyncrasies of the Ukrainian vowels generated by an American speaker. Introduction, conclusions, a summary, and a list of references are all included in the study.

# CHAPTER 1. ENGLISH LANGUAGE ACQUISITION

## 1.1. Language acquisition

Humans learn to perceive, understand, and utilize language through a process called language acquisition. The overwhelming majority of language acquisition happens before the age of six and continues throughout childhood and adolescence [26]. The obtaining process commences in infancy, which has triggered numerous theories to be put forth to explain how children acquire language. That is one of the copious reasons why the study of language acquisition has been a popular subject for research for many years.

Chomsky's idea of universal grammar (UG) is among the most significant theories of language learning. This hypothesis argues that language acquisition is feasible because people possess an intrinsic language competence. All human languages are governed by a set of rules known as UG, which is said to be ingrained in the brain from birth. As a result of creating and testing hypotheses about the underlying structure of the languages children are exposed to, Chomsky claimed that they develop language through a process of hypothesis testing. The linguist contended that UG directs this process, allowing infants and toddlers to pick up language effortlessly and promptly [26].

Chomsky's hypothesis of UG, however, has been disputed by more recent studies. In this regard, the usage-based theory of language acquisition put forward by Tomasello claims that children acquire language skills through social contact and practice. This theory proposes that language acquisition occurs when infants pay attention to the communicative intents of others and use language to accomplish their own communicative objectives. As opposed to focusing on underlying cognitive mechanisms, this method stresses the importance of experience and interpersonal relationships in developing language skills [102].

Research on language acquisition has examined the distinct cognitive and neurological mechanisms involved in this process aside from the aforementioned theoretical disagreements. Gathercole and Baddeley's study of the connections between phonological memory and language disorders in a group of children provides a convincing argument for the issue. They ultimately arrived at the conclusion that the memory deficiencies of the disturbed individuals result from a selective deficiency of phonological memory abilities rather than just from the lack of vocabulary and reading proficiency [49]. Further research examples include Friederici's dedication to characterize the neurological correlates of language processing [47], Bialystok's investigation of the impact of bilingualism on language acquisition [19], Hoff's inquiry into the role of socioeconomic status on language development [59], and a number of others.

All things considered, the subject of language acquisition research is complicated as well as multidimensional, and scholars are always addressing new issues and viewpoints. Researchers have yet a great deal to learn about how humans acquire language skills, but decades of study have given people new insights that have helped scientists better grasp this crucial part of human cognition.

### 1.2. Multilingualism/bilingualism

In today's interconnected world, bilingualism and multilingualism are becoming more prevalent. Fluency in two or more languages is referred to as bilingualism, and competence in three or more languages is referred to as multilingualism. In order to better understand how languages are learned, employed, and represented in the mind, academics in linguistics are increasingly focusing on these two concepts.

According to D. Green, one of the most important discoveries in the study of bilingualism is that bilinguals are able to transition between languages

depending on circumstances or context [55]. Code-switching is a skill that is frequently present in multilingual communication and has been thoroughly researched. According to analyses, code-switching is not an arbitrary or random process but is instead governed by norms and limitations. Depending on the speakers' linguistic ability, the language they are speaking, and the interaction's social context, these standards and constraints may change [79].

Another major topic of research in bilingualism is the influence of bilingualism on language and cognition. Improvements in executive control and mental versatility are only a couple of the cognitive advantages of bilingualism that have been proven. The cognitive challenges of maintaining two languages are assumed to be the source of these advantages, which may improve cognitive control and attentional functions [19]. Grosjean claims that bilinguals may have a more sophisticated and adaptable knowledge of language than monolinguals in terms of linguistic development. This is due to the fact that bilinguals must handle two sets of linguistic rules and systems, which might result in a stronger understanding of the underpinning linguistic principles [56].

Bilingualism has been found to have essential social and cultural consequences in addition to its cognitive and linguistic advantages. It may foster intercultural awareness and respect by facilitating communication and understanding among diverse linguistic communities [29]. Considering that bilingual people might have access to more job opportunities and prospects, bilingualism might also offer financial advantages.

Nevertheless, dual language proficiency can present obstacles, particularly when one language proves to be more dominant compared to the other. In such circumstances, a less prevalent language may be in danger of vanishing completely. In minority language communities, where bilingualism may be viewed as a danger to the survival of the minority language, this can be a specific cause of distress [43]. Additionally, bilingual children may find it difficult to

learn academic material in a language that is not their mother tongue, which may trigger challenges within educational settings.

Ultimately, investigation into bilingualism and multilingualism appears wide-ranging and complicated, with significant ramifications for social, cognitive, and linguistic growth.

### 1.3. Second language acquisition

The process through which people master an additional language that does not qualify as their first language is called second language acquisition or SLA. It is a multifaceted process that is impacted by an array of aspects, such as unique personal characteristics, language input, and instruction. SLA research is a crucial field of study in linguistics because it sheds light on how languages are acquired and utilized in various circumstances.

The Krashen-proposed Input Hypothesis is one of the most important SLA hypotheses. According to this idea, language learning happens when a learner is exposed to material that is just somewhat challenging for them to comprehend at the moment. This input, referred to as "comprehensible input," ought to be clear to the learner while simultaneously including novel and unfamiliar linguistic constructions. Krashen believes that the learner's intrinsic language acquisition system processes it, resulting in the acquisition of new language forms [67].

Another important perspective on SLA is the Interactionist Perspective, which emphasizes the role of social interaction and communicative competence in language acquisition. According to this perspective, language acquisition occurs through meaningful interaction and communication, rather than simply through exposure to input. This perspective highlights the importance of social and cultural factors in SLA, including the learner's motivation, identity, and social context.

The Interactionist Perspective, which stresses the importance of social contact and communication skills in language learning, is another significant viewpoint on SLA. This school of thought claims that genuine dialogue and engagement rather than only exposure to input lead to development of language skills. In particular, the learner's motivation, identity, and social environment are highlighted as important social and cultural variables in SLA [75].

Aside from these perspectives on theory, a broad range of factors can have an impact on SLA. Age, mental capacity, and motivation are just a few examples of individual variations that have been demonstrated to be significant indicators of SLA effectiveness [34]. Another important element in SLA is input, or the linguistic exposure that learners get. According to research, language learners who have greater exposure to the target language, especially in natural circumstances, are more likely to succeed in acquiring the language [38].

SLA may also be affected by instructional variables, such as the kind and volume of language instruction. Pursuant to research, explicit training—that is, instruction that emphasizes grammatical rules and language forms—can be helpful in fostering SLA [94]. It's crucial to remember that for SLA, education alone is insufficient; it must also be combined with meaningful engagement and exposure to the target language.

The last important factor in SLA is context. With regard to research, language learners who are immersed in a linguistically auspicious environment—such as while studying abroad or residing in a culturally diverse neighborhood—are more likely to succeed in picking up the language [84]. Furthermore, context can affect the kinds of language forms that learners acquire, with formal or academic contexts favoring more complex language structures [20].

### 1.3.1. Phonetic and phonological acquisition of second language

Phonetic and phonological acquisition in second language (L2) learning is an intricate framework that involves the formation of new sounds and sound pattern systems. The Contrastive Analysis Hypothesis, the Markedness Differential Hypothesis, and the Speech Learning Model are just a few of the hypotheses and theories put out to describe the process of L2 phonetic and phonological learning.

According to R. Lado's views on Contrastive Analysis Hypothesis (CAH), the primary barrier to effective L2 learning is the distinction between the learner's L1 and L2 sound systems. This theory contends that the learning of L2 sounds and sound patterns is hampered by the learner's L1 sound system [70]. R. Ellis, however, disagrees with this theory, arguing that it oversimplifies the process of L2 phonetic and phonological acquisition by ignoring individual variations and other elements that may affect it [39].

The Markedness Differential Hypothesis (MDH) proposes that learners acquire L2 sounds that are less marked or more frequent in various global languages first, before mastering sounds that are more marked or less common. This theory states that learners first learn simpler sounds because they are easier to make and because some sounds are more complicated or harder to generate than others [35]. The MDH has furthermore undergone condemnation for failing to take into account the context and purpose of sounds in the L2 system [46].

As per the Speech Learning Model (SLM), it is based on the idea that the factors which affect a learner's ability to acquire L2 phonetic and phonological skills include the degree of similarity between their L1 and L2 sound systems, as well as the quantity and type of input and feedback they get. The aforementioned point of view proposes that learners who get precise input and feedback on their pronunciation are more prone to acquire L2 sounds that are comparable to those in their L1 system [46]. This approach has received support

from research studies on L2 phonetic and phonological acquisition from academics like S. Gass and L. Selinker [48, p. 183; 583].

Finally, a selection of variables can affect the acquisition of L2 phonological and phonetic acquisition. For instance, Flege emphasizes the significance of the age at which L2 learning begins since research has shown that this aspect is a key indicator of success in L2 phonetic and phonological acquisition, with younger learners often demonstrating better skill [46]. Munro and Derwing focus on the ideas of input and exposure to the L2 sound system, including the volume and quality of input as well as the kind of response learners get. They assert that they are similarly crucial for L2 phonetic and phonological acquisition [78].

Although theories like the Markedness Differential Hypothesis, the Contrastive Analysis Hypothesis, and the Speech Learning Model have provided helpful observations into the process of L2 phonetic and phonological acquisition, more research is required to fully understand this process and to update efficient language instruction policies and practices.

### 1.4. Language transfer and interference

Language interference and transfer relate to the manner in which an individual's primary language (L1) influences how they acquire and use a second language (L2). Depending on a multitude of parameters, knowledge transfer from one language to another can either assist with or impede L2 learning.

Applying knowledge from the L1 to the L2 is referred to as transfer. In some circumstances, transfer can aid L2 learning. For instance, if the L1 and L2 both share some grammatical patterns or vocabulary units, L1 knowledge may assist learners in discerning the meaning of new vocabulary or L2 structures. Given that individuals do not need to master a language from the very beginning, they could save time and effort this way [28].

Nevertheless, according to Odlin, interference may occur as a result of transfer when the L1 and L2 have substantially distinct grammatical patterns, vocabulary, or phonology. For instance, learners may write sentences that are grammatically incorrect in the L2 if the L1 employs a different word order than the L2. In a manner comparable to this, learners may incorrectly pronounce lexical items or sounds alien to native speakers if the L1 and L2 have independent sounds or intonation patterns [80].

Jarvis and Pavlenko identify several different transfer types that can take place during L2 learning. The primary one is positive transfer, which happens when the L1 assists the learning process of the L2. As an example, individuals may apply their L1 literacy abilities to decipher new words in the L2 if the L1 and L2 share the exact same alphabet or writing system. Apart from that, as was already said, positive transfer can take place when the L1 and L2 possess shared grammar or vocabulary [82].

Negative transfer, which happens when the L1 obstructs the L2's learning, is the second type. As explained by Cook, negative transfer can manifest itself in a variety of ways, including cross-linguistic impact, underuse, and overgeneralization. On the one hand, overgeneralization happens when learners use L1 rules that are inappropriate for the L2 context [28]. One sheep, five sheeps, and many deers can be used in place of five sheep or many deers, as demonstrated by the example given by Leaver, Ehrman, and Shekhtman [72, p. 148; 152]. Overgeneralizing the common practise of adding -s to make nouns plural across all noun categories is a common error. On the other hand, underuse happens when learners avoid applying vocabulary or grammatical structures in the L2 because they cannot be implemented in the L1. Given that there is no counterpart in Ukrainian, a Ukrainian speaker studying English could refrain from using the definite article "the". Learning L1 traits that are absent from the L2 results in cross-linguistic effect. As an illustration, a Mandarin speaker learning English

would say "very tall" instead of "much taller" because Mandarin lacks a comparative form of adjectives [28].

The third kind of transfer is neutral transfer, which happens when the L1 has no impact on the L2's learning. When the L1 and L2 do not share any similarities or when learners do not yet know the L2 well enough to draw analogies, neutral transfer may take place.

Naturally, an array of issues, including the learner's age, L1 competency, motivation, and learning circumstances might have an impact on language transfer and interference. Jarvis and Pavlenko came to the idea that younger learners may be more sensitive to positive transfer than adults because they are more adaptable and less rooted in their L1. Since they have less L1 understanding to draw upon, they could also be more susceptible to negative transfer [82]. Odlin's study shows that learners who have greater L1 proficiency might possess more transferrable knowledge than those with limited competence, but they may also be more prone to face interference from their L1 due to their dominant language habits and schemas [80]. As mentioned by Selinker, learners' motivation can also have an impact on language interference and transfer. According to him, highly motivated students may use their L1 knowledge more strategically to aid in L2 learning as opposed to less driven students, who may depend only on literal translation or forego integrating the L2 completely [91].

Finally, language interference and transfer can be impacted by the context of learning. Learners may encounter less interruption from their L1 and greater opportunities to use and acquire the L2 in immersion environments when the L2 is the prevailing language. However, when the L1 is also utilised for teaching in bilingual or second language circumstances, learners may encounter increased interference and transfer between the two languages [109].

Understanding all of the aforementioned elements can assist language specialists in developing successful teaching materials and practises to increase positive transfer and prevent negative interference in second language learning.

### 1.4.1. Language dominance

Language dominance is the unbalanced mastery of, or usage of, two or more languages by a person or a group of people. When it comes to speaking, comprehending, reading, writing, or total communicative ability, Grosjean defines it as the extent to which one language is more dominant or impactful than the other(s). Language dominance can differ among people and be influenced by a number of variables, including language use patterns, exposure, age at which language was first acquired, and cultural environment [56].

Different forms of linguistic dominance can manifest themselves in multilingual people or societies. One kind is known as "receptive dominance," where a person has greater knowledge and understanding of one language in comparison to the other(s). For instance, a person could have better comprehension in their mother tongue but have trouble expressing themselves adequately in a second language. When people are more frequently exposed to one language in their environment or have less opportunity to actively use the other language for communication, receptive dominance frequently occurs [81].

A different kind of language dominance is called "productive dominance," which describes a situation where a person prefers to use one or more languages above others because they are more adept or at ease doing so. As an example, a multilingual person could struggle to express themselves in the first language despite having great speaking and writing abilities in their second language. Language maintenance efforts, educational background, and usage habits can all have an impact on productive dominance, according to Paradis [81].

Along with receptive and productive dominance, there can also be a combination of the two, known as "balanced dominance" or "bilingual proficiency." This individual uses two or more languages across many linguistic areas with roughly equal ability and comfort. People who were exposed to and actively used numerous languages from an early age, such as in bilingual upbringing or immersion programs, frequently exhibited balanced dominance [56].

Fishman [44] noted that it is crucial to distinguish between language dominance in the individual and language dominance in society. In many bilingual environments around the world, language dominance can be found. For instance, in Canada, where both English and French are official languages, multilingual people's levels of language dominance can differ. Due to its widespread usage in media, education, and everyday interactions, English may be the language of choice for some people, but French may be the language of choice for others due to its use in their communities or households. In addition to English, people who are immigrants typically speak one or more other languages at home, such as Spanish, German, or other immigrant languages. These instances show that social language dominance and individual language dominance are related, but distinct from one another, that exposure to and usage of languages are essential for language dominance development, and that dominance can shift over time [17].

It is crucial to remember that language dominance is a fluid and context-specific phenomenon. Based on fluctuating linguistic usage patterns, social contexts, and linguistic learning experiences, it may change through time. Understanding language dominance is essential in educational and clinical settings as it guides efforts to support bilingual people and communities through language assessment, intervention, and planning.

### 1.5. English phonology

The study of phonology focuses on how speech sounds are categorised and perceived in the brains of speakers, as well as how they are methodically organised within a language and function in that system. In its simplest sense, phonology is the study of language's sound patterns, or how speakers organise speech sounds to facilitate communication [40]. According to Yule, phonology is simply the description of a language's systems and patterns of sounds [111]. Following this, rather than being concerned with the actual physical articulation of speech sounds, it is concerned with the abstract or conceptual element of the sounds in language. Phonology is concerned with the fundamental design, or blueprint, of each sound type, which serves as the consistent foundation for all changes in distinct physical articulations of that sound type in various circumstances [40]. Kager further emphasises that phonology is concerned with the way that sounds in a language are utilised to convey meaning [66].

Since all higher units of language, including words, phrases, and sentences, may eventually be analysed as sounds, phonology serves as the foundation for all other facets of language. Additionally, phonology is connected to a wide range of symbolic functions in human interaction, including various linguistic meanings, individual and group identities, and the ability to impact mood or emotion [83].

As Stevick observes: “Pronunciation is the primary medium through which we bring our use of language to the attention of other people” [96]. Phonological disparities can indicate variations at many levels of language, such as variations in lexical meaning, grammatical meaning, and utterance meaning, provided that sounds serve as the foundation for all higher linguistic units [83].

The number of speech sounds fluctuates from dialect to dialect in English, and any real figure heavily depends on the researcher's interpretation. John C. Wells' Longman Pronunciation Dictionary, for instance, uses the International Phonetic Alphabet symbols to signify the 24 consonants and 23 vowels that are

used in Received Pronunciation, along with the two additional consonants and four more vowels that are exclusively used in foreign words. For General American, there are 25 consonants and 19 vowels, plus one extra consonant and three extra vowels for foreign words [106]. In contrast, the American Heritage Dictionary offers five vowels and one consonant for non-English lexical units, along with 25 consonants and 18 vowels (including r-colored vowels) for American English [99].

### 1.5.1. Notion of accent

The definition of an accent in linguistics is an extremely contentious topic. One school of thought holds that accent refers to differences in the pronunciation of spoken sounds within a language or dialect. As stated by B. Kachru, an accent is defined by distinguishing aspects of speech including emphasis, intonation, and vowel quality [65].

Another perspective on accent is that it is a social construction that reflects historical and cultural influences. Based on this perspective, which emphasises the influence of social identity on language usage, a speaker's accent is a reflection of their social background and identity [16].

Giles and Coupland provide a third viewpoint on accent, arguing that it is a relative term that is dependent on the standards and expectations of the listener. This viewpoint suggests that accent is a dynamic and flexible characteristic of communication that is determined by the context and goal of speaking. In this respect, accent is a socially interpreted phenomena rather than an absolute or objective fact [52].

A fourth viewpoint on accent suggests that particularly in the context of bilingualism and multilingualism it is directly tied to language development and acquisition. According to Flege, accent varies based on a variety of individual

and environmental characteristics and represents the cognitive and linguistic processes involved in learning and using various languages [45].

Despite these divergent perspectives, the majority of linguists concur that accent is a complicated and ranging phenomena involving a variety of linguistic, social, and cultural elements. The phonetic and phonological characteristics of a language, as well as the social and cultural identities of speakers and their communities, can be reflected in an accent. The environment and goal of communication, as well as the speaker's individual and collective identities, may all affect accent [74].

### 1.5.2. Role of consonants

In order to discern between numerous sounds and give language meaning, consonants are a crucial part of English accents. There are 24 consonant sounds in English, and they may be divided into several groups based on how they are articulated and how they sound.

In English accents, consonants play an essential part in distinguishing words with similar sounds but different meanings. For instance, the vowel sounds in the words "pat" and "bat" are similar, but they differ in the first consonant sounds, voiceless bilabial plosive "p" and voiced bilabial plosive "b," respectively. This alteration in consonant sound transforms the word's meaning, illuminating the significance of consonants in linguistic context [69].

Another function of consonants in English accents is to establish rhythm and stress patterns in speech. The general pattern of stressed and unstressed syllables in a phrase can change based on the speaker's accent or dialect, according to Roach, and consonants can play a role in this pattern [88]. An obvious rhythmic pattern is produced, for instance, when the /t/ sound at the end of syllables is sometimes spoken more forcefully in British accents.

Consonants are essential for expressing attitudes and feelings in language. According to Laver, certain sounds may represent various emotions, such as rage or impatience. For instance, the sound /tʃ/ as in "ch" can sometimes be used to represent anger or frustration, but the sound /f/ as in "f" might be used to express astonishment or incredulity [71].

Moreover, the social and cultural identities of speakers and their communities can be reflected in consonants. Certain consonant sounds may be pronounced differently or even omitted entirely in some English accents, especially those connected to certain areas or socioeconomic classes. The speaker's social background, identity, and linguistic heritage may be reflected in these deviations [105].

Despite their significance in English dialects, consonants can be difficult for language learners and speakers. It can be challenging to pronounce some consonant sounds in English, such as the voiced and voiceless dental fricatives /ð/ and /θ/, because they are absent in many other languages. Additionally, several English consonants, including the retroflex /r/ and the glottal stop /ʔ/, are frequently missing or replaced in different accents, which can cause confusion and communication problems [62].

### 1.5.3. Role of vowels

Vowels are equally important to the study of English phonology and have a substantial impact on how the language sounds and is understood. There are 12 pure vowel sounds in English, and they are divided into categories based on how they are spoken and how long they are.

The basic purpose of English vowels, like that of consonants, is to distinguish words in a meaningful way. For instance, the sole difference between the words "seat" and "sit" is their respective vowel sounds of /i/ and /ɪ/. The little

difference in vowel sound between the two words serves to express their intended meaning by creating a major distinction between them [88].

The rhythm, melody, and intonation of spoken English are also influenced by vowels, enabling speakers to communicate a variety of feelings, attitudes, and messages. Johnson investigates how vowel length, stress, and intonation patterns might represent many emotions, including joy, sorrow, rage, and surprise [63]. For instance, in some English accents, such as American English, the rising intonation pattern of a vowel sound might suggest an inquiry even when a statement is being uttered.

Gimson emphasises the significance of vowels as a reflection of speakers' and their communities' social and cultural identities. For instance, certain English accents—such the Scottish accent—might use a different vowel sound in phrases like "boat" and "coat," revealing a distinctive regional accent [53].

Vowels, however, can be difficult for English speakers and language learners. Correct pronunciation of English vowels may prove to be challenging, especially for speakers of languages with independent vowel systems. Furthermore, some English dialects and accents may include vowel sounds that are not present in standard English, which can cause confusion and difficulties with understanding. Having a better knowledge of the vowel system in English helps enhance communication and promote intercultural understanding [107].

Another intriguing trait of English is vowel neutralization, which is a phonological process in which the distinction between vowel sounds is lost or decreased in specific phonetic settings. The production of a more centered or reduced vowel arises when phonemic variations between vowels, such as vowel quality or length, are not consistently preserved in particular situations.

The elimination of vowel differences in unstressed syllables in English is an illustration of vowel neutralization. Vowels like /i/ (as in "beat") and /ɪ/ (as in

"bit") that are generally distinguishable in stressed syllables are frequently neutralized in these locations and pronounced as the middle vowel /ə/ (as in "about"). This can be seen in words like "happy" (/ˈhæpi/), where the stressed syllable's /i/ sound changes to the unstressed syllable's (/pi/) /ə/ sound.

Vowel neutralization in English can have an impact on other languages for English speakers studying a second language. As an example, English speakers may carry over the neutralization pattern into their second language, causing the disappearance of phonemic vowel differences. This can lead to difficulties in acquiring and producing right vowel sounds, which can impair comprehension and overall pronunciation accuracy. According to Flege's research, English speakers may neutralize vowel differences in unstressed syllables just like they do in English while acquiring language skills in Spanish or French, for instance [46]. As second language learners work to master the precise vowel contrasts of their target language, this transfer of neutralization patterns can present issues.

### 1.6. Ukrainian phonology

The Ukrainian language of today is a highly developed literary language, and despite significant dialectal variances, the orthoepy of its spoken form in research, education, the media, and daily life is based on the Kyiv dialect [113]; [8].

Due to the heterogeneity of transcription techniques used in the literature, it is difficult to describe Ukrainian's phonetics in terms of IPA. This process is made more difficult by the impact of the Cyrillic writing system, which was developed for certain languages. Additionally, there has been little experimental phonetic study on Ukrainian, particularly in terms of articulation, and the research that has been done so far has produced a lot of inconsistent findings. The status of so-called half-palatalized consonants (and their context), the exact positions of

consonant articulation, the nature of the vowel (и), and the status of geminates are the primary issues [15].

Ukrainian is generally acknowledged to have 38 phonemes, including 6 vowels and 32 consonants [1]; [11]. Differing approaches to the phonemic status of semi-palatalized and geminate consonants are associated with deviations from this number [7]. The phonetic data that follows is primarily based on Pohribnyi. [10].

The phonemes for the vowels are /ɑ, ɛ, ɪ, i, ɔ, u/. The distinction between stressed and unstressed positions does not matter much for Ukrainian vowels. If /ɔ/ is followed by a syllable containing /u/ or /i/, /u/ has an allophone [ʊ], and there are very minor differences in the pronunciation of /i/. When /ɑ/ is not stressed, it has an allophone [ɐ], and /ɔ/ also has an allophone [o]. Most issues revolve around the distinction between stressed and unstressed sounds. These sounds come in a variety of forms, depending on the phonetic context. Their phonetic transcription in Ukrainian, which uses the Cyrillic letter, is [eᵘ] (which is closer to [ɛ]), and [иᵉ] (which is closer to [ɪ]) [89].

Along with their regular (or "hard") forms, Ukrainian consonants also come in palatalized (or "soft") and semi-palatalized (or "semi-soft") variations. There are 22 phonemes in the first group: /b, ʋ, ɦ, g, d̪, ʒ, z̪, k, l̪, m, n̪, p, r, s̪, t̪, f, x, ʦ̪, ʧ̪, ʃ, dz̪, dʒ/. Ten phonemes make up the group of palatalized consonants: /j, dʲ, zʲ, lʲ, nʲ, rʲ, sʲ, tʲ, ʦʲ, dzʲ/. There is significant disagreement over the degree of palatalization of the consonant /rʲ/; it is occasionally referred to as a semi-palatalized consonant [11].

Since there is no specific IPA symbol for semi-palatalization, a superscript 'j' may occasionally be employed, as in the case of /rʲ/. The palatalization of the consonants /bʲ , ʋʲ , ɦʲ, gʲ , ʒʲ , kʲ , mʲ , pʲ , fʲ, xʲ, ʧʲ, ʃʲ, dʒʲ/ is considerably weaker; they are typically viewed more as allophones of the corresponding 'hard' consonants than as independent phonemes. Sonorants in Ukrainian include /ʋ, l,

lʲ, m, nʲ, r, rʲ, j/. The voiceless /f/ that forms a pair with the Polish or Russian fricative /v/ must not be combined with the labio-dental approximant / ʋ / represented by <в>. In Ukrainian, the fricative sound (/f/) only occurs in loans and onomatopoeic words [89].

### 1.6.1. Notion of accent

In the Ukrainian tradition the notion of accent has been described from a somewhat different perspective. For instance, one of the definitions describes it as an involuntary distortion of the sounds of a particular language by a person who is not a native speaker. Errors are caused by the influence of the native language system, as well as within the same language by the influence of dialectal pronunciation, when a dialect speaker is not sufficiently familiar with the norms of the literary language, such as the over-expressive pronunciation of the vowel sound /a/ in the language of speakers of northern Ukrainian dialects [6].

Accent is also often described as a peculiar pronunciation of sounds of a non-native language caused by the articulation base of the native language (foreign accent), or a set of pronunciation features characteristic of a particular dialect and not peculiar to the literary language, due to imperfect knowledge of its norms [14, p. 16].

The dictionary definition suggests that an accent is a type of speech that results from the interaction of the phonetic systems of two languages or a literary language and a dialect. As a result, it is extremely difficult to overcome the accent simply because of its nature. First and foremost, an accent is an unintentional distortion of sounds that occurs when a word is uttered; second, an accent eloquently demonstrates that speakers have honed stable speaking abilities under the influence of the regional dialect; and third, an accent is the result of imposing native language automatisms on the language being studied. Besides, not all deviations from the norm are accentual. For instance, lisps, stutters, stammers,

and other speech alterations brought on by the structure of the articulatory apparatus, also known as organic diction defects (incorrect jaw closure, long, thick, or short tongue, short, or small teeth), should not be regarded as an accent.

It follows that the phonetic and orthoepic level of language is the main area of accent formation, and interference is localized in the speaker, while the accent exists for the listener. Therefore, in order for the interference to manifest itself in an accent, it must first of all affect those elements of the second language that are contained in the listener's perception [2].

### 1.6.2. Role of consonants

Ukrainian is an East Slavic language sharing a lot of common features with languages like Belarusian, Serbian and Croatian for example. However, it also possess a certain number of distinct phonetic features that are absent in all other members of this linguistic group.

The consonant v is pronounced as the bilabial [w] when it is in the final position of a syllable. In other positions, it can be pronounced as either [v] or [w], with [w] or even [u̯] occurring more frequently. The following form [v']iz (m.sg.pst) 'to carry' can be mentioned, in which v, like all other labials, palatals, velars, and glottal sounds in the environment before i, appears semi-palatalized; one also finds the nonsyllabic vowel as a variant of /w/ in xody[u̯] [33].

Prior to the demise of jers, the common Slavic sound /g/ changed into the pharyngeal sound /h/ in Old Ukrainian. This change can be compared to the series of palatal stops that developed as a result of velar palatalization and dental deiotations [31]. Since the late 14th century, the phoneme /g/ has been attested, notably in borrowings from mediaeval Latin, German, and other languages through Polish. Early in the 17th century, a special letter called "ґ" emerged. It was later banned in Soviet Ukraine in 1933 and then reinstated in 1989. The phoneme /g/ is more prevalent together with the affricates /dz/ and /dž/ in

Southwest Ukrainian, which has been generating distinctive voicing among its obstruents as seen by the neutralisation of the type dužka [šk] and before a word boundary did [t] 'grandfather'. A distinctive feature of East Ukrainian and modern Ukrainian is their phonemic protensity system, which shows neutralisation of the kind prosʹba [zʹb] 'request'. This is why borrowings with the foreign /g/ are rarely seen in the East Ukrainian or current Ukrainian phonological systems, as they combine the phonemes /h/, /k/, and /x/ but not /g/ into a single sequence of phonemic localization [31].

In contrast to other Slavic languages, Ukrainian distinguishes between three levels of palatalization, or between hard, semisoft, and soft consonants. Only the hard and soft consonants have phonemic significance; the semisoft consonants, which are denoted by a single, straight apostrophe ('), are regarded as combinatory versions of the hard consonants. They are related to the placement of the vowel /y/ (/и/), which can only follow hard consonants, such as [v']iv (вів) next to vyv (вив) - "to howl.m.sg.pst." [33].

At morpheme boundaries, long consonants often occur as pairs of short consonants. Depending on the type of morpheme boundary they appear at, long consonants have a distinct status. A geminate or a sequence of two short phonemes can be posited in the latter case and one long phoneme in the former because the degree of fusion is much higher for the root/suffix boundaries (from the consonantal cluster "palatalized consonant" + j) than for the prefix/root ones, as in the case of viddiaka - 'requital' next to pidboriddia - 'chin' [86]. Many deverbative nouns, such as pytannja - "question," and the instrumental singular of feminine nouns, such as tinʹ, tinniu - "shadow," have long consonants that are palatalized [33].

### 1.6.3. Role of vowels

In certain circumstances, Ukrainian vowels are unique and lack analogies in the Slavic language family. For instance, both historically and phonologically, the phonemes /i/ and /y/ (letter 'и') are distinct phonemes. The earlier /i/ and /y/ were merged historically into the front high-middle vowel /y/, which began in West Ukrainian in the late 13th century and was finished in the east of the nation a little later [8, p. 257]. In modern Ukrainian, this sound is articulated in the /e/ zone and cannot be distinguished from /e/ in an unstressed setting. The quality of the unstressed vowel depends on the quality of the next stressed sound, for instance, e next to y as in beré, "he/she takes," next to berý, "take!".

Assimilation of the unstressed /o/ in the environment before a stressed syllable with /u/ or /i/ is another distinguishing characteristic. The /o/ takes on a /u/-like tint in this location, denoted by [oᵘ], as seen in the word k[oᵘ]hút for "cock."

In addition to the shift of ě into i shown in děti > dity 'children,' the phoneme /i/ is the consequence of a separate evolution (ikavism) in Ukrainian vocalism. Before a lost weak jer, the phoneme /i/ took the role of o and e in the environment, leading to morphologized alternations such nis (<nosъ): nosu (gen) "nose" and utik < uteklъ (m.sg.pst): utekla (f.sg.pst) "to flee" [32].

## 1.7. Phonological interference of English and Ukrainian

Phonetic interference is defined as a deformation of the language's sound system brought on by the application of phonetic knowledge obtained through studying another language or from the native tongue [24].

It is particularly apparent in non-native speakers when the primary and secondary languages are not strongly connected and have major qualitative and quantitative disparities in the vowel and consonant systems [112]. In some instances, this kind of interference can alter the meaning of the phonetic unit in

addition to the pronunciation, making interaction between communicators challenging or even impossible.

Phonetic interference happens when a distinctive element of one language's phonetic system is lacking in another. The main types of phonetic interference include incorrect emphasis, leaving out sounds that are not present in the Ukrainian language, pronouncing sounds that, by English phonetic rules, should be omitted, reading letter combinations incorrectly, and other phonetic variations that not only alter the language's proper sound but also over time add it to tokens of uncharacteristic sounds, resulting in the pronunciation of words in an incorrect way.

When it comes to the interfered phonetic elements that determine how an accent is pronounced in a bilingual person's speech, we refer to them not only as phonetic errors but also as mental errors, that is, distortions and deviations from the English pronunciation system and norm that externalise phonetic representations in the segmental and supersegmental levels of the brain's neurodynamic structures. As was already noted, they serve as models for the fundamental phonetic components of the native tongue and are reconfigured as learners develop additional phonetic units [4].

One of the most striking examples of phonological interference between English and Ukrainian may be found in Ukish, a hybrid of these two languages spoken among a Ukrainian community in Canada. There is a clear assimilation and close sound imitation to the source language at the phonetic level. For instance, the voiced sound /ɾ/ appears rarely in a few Ukrainian lexemes although it is relatively common in the majority of positions in the Ukish words. Additionally, in terms like галя (hall) and голидей (holiday), the English pharyngeal /h/ tends to lose its articulatory meaning and be replaced by the Ukrainian voiceless /ɾ/. Such a trend may be seen as evidence of the mutual impact of the languages concerned [23].

Given that the interference happens most often when the sounds of one phonetic system permeate into the phonetic system of another language, it is only logical to assume that among the complicated sounds to produce for Ukrainian speakers are voiced and voiceless dental fricatives /ð/ and /θ/. In some cases words containing the aforementioned consonants may be pronounced slightly differently, e.g. this - /ðɪs/ may be pronounced as /zɪs/, or thistle - /ˈθɪsəl/ - as /ˈsɪsəl/. Another sound that may appear challenging for Ukrainians may potentially be a labio-velar approximant /w/, for it is not present in the majority of Slavic languages. For that reason words containing this consonant may be altered in pronunciation and sound differently, for instance, win - /wɪn/ may become vin - /vɪn/.

### 1.7.1. Canadian Ukrainian

Throughout history, Canada has been ranked second in the world in terms of the number of Ukrainians residing inside its borders. The process of Ukrainian immigration to Canada started in the late nineteenth century, and since that time the Ukrainian language has undergone several stages of socialisation, changing from the mother tongue of the ethnic group of Ukrainians to the ethnic language spoken by a large diaspora of several generations. It was first introduced to the nation by peasants from Western Ukraine, and the majority of them were either uneducated or just had little to no education. The oldest heritage language in Canada may therefore legitimately be considered to be Ukrainian [60].

The "classical" form of original Ukish was just the living body of spoken Ukrainian language incorporating English words. It originated largely as a result of the immigrants' discovery that they were living in an unfamiliar nation with many aspects of everyday life that did not match or were different from what they had left behind. The most intriguing aspect of classical Ukish is how foreign influences are imposed on Ukrainian morphology. Alexander Royick recorded snippets of traditional Ukish speech in Alberta, Canada. Even though Royick took

his sample after the "second migration wave" hit, classical Ukish was still quite common in 1965, especially among the earlier immigrants. People who immigrated to Canada after the Second World War were typically better educated and more politically aware than those who came before.

As the chosen examples from Royick demonstrate, there have been foreign (English) absorptions into Ukrainian as well as their complete acclimatisation in the host language: box [baksynku; baksu], exhibition [artsybyshyn], July [dzhulaju], cookies [kukisy], pie [paja], buns [bansyl], train [tryna], and many more [90].

Even more prominent is the total lack of flection, which initially appears in the vocative case when only the nominative is employed and then appears in other situations: "Ja pyshu z pero. Daj tsedo tato." When a sentence is longer or more complicated and the speaker lacks appropriate language knowledge and proficiency, the many grammatical connections become hazy in the speaker's head, which makes the absence of inflection more noticeable.

Aspiration of consonants like in English and diphthongization of vowels are other features of modern Ukish. As a result, the Ukrainian "to" (that) sounds like [thow] [97].

The Ukrainian spoken in Canada today is not a dialect or subdialect of the Southwestern Ukrainian region, nor is it a Westernised version of the literary language. It is a Canadianized variety of Ukrainian that retains many traits from the aforementioned dialects.

The innovations in Canadian Ukrainian brought about by literary Ukrainian include the following:

- The phoneme /a/ - /e/, which in many Southwestern dialects was often realised as /e/ or /i/ or /y/ after palatal consonants, is gradually

bringing conventional literary standards into a more consistent pronunciation, like s'vjeta - svjata.

- Among new closed syllables, the phoneme /i/-/o/, which in some Volynian dialects was commonly realised as /y/ and /u/, now resembles the normal pronunciation: pushov-pishov.
- It is uncommon to hear Canadian Ukrainians pronounce the palatal phonemes /t'/ and /d'/, which in Bukovinian and Hucul dialects have been fusing with the palatalized /k'/ and /g'/. These phonemes are realised in a way that is similar to literary conventions, such as k'isto - tisto [50].

### 1.8. Accent relevant to the research

Ebonics is an American English dialect that is mostly used by African Americans. It is also known as African American Vernacular English (AAVE), originally known as Black English Vernacular (BEV). Ebonics, like other English creoles, is widely believed to have originated through interactions between colonial English and African languages. However, there is still disagreement over its precise beginnings and the proportional contributions of the involved languages. Ebonics has not undergone as much modification as other English creoles, and it still has many characteristics in common with contemporary nonstandard white American dialects, particularly American Southern English. As a result, some creolists categorise it as a semi-creole.

Ebonics is a colloquial variation of American English that is used more frequently for informal interactions than for formal situations. When individuals with low levels of education speak it, it often deviates the most from American English as a whole. It is important to distinguish it from the language variants used by specialised subgroups like urban youth, where one might find words and expressions that are not frequently found in the standard vernacular [77].

African Americans from the working class, especially those who live in metropolitan areas, speak this variant the most frequently. The great majority of middle class African Americans speak both Standard American English (StAmE) and AAVE, and they often use StAmE in appropriate social circumstances through a process that academics define as "style-shifting" [18].

### 1.8.1. Its history

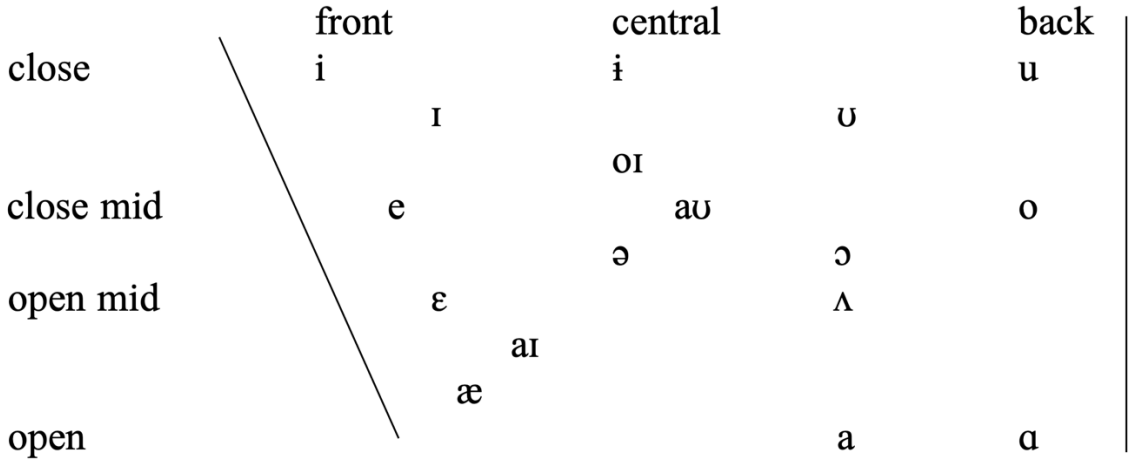
AAVE was once supposed to have originated from a mix of indigenous African languages and historic English dialects. In the literature today, there are two opposing theoretical stances on the origin of AAVE. The creolist stance, which also goes by the name "African substratum position," contends that AAVE is a direct descendent of the creole language synthesis that developed on southern plantations during the antebellum period of American history. According to this theory, a range of African languages, likely including an English-based pidgin that was popular in coastal West Africa during the slave-trading era, were spoken by the African slaves who were transported to early America, either directly or via the Caribbean. Slaves, as it is presumed, had little to no exposure to the English of their owners. As a result, they created the original creole by fusing the grammatical and phonological resources of their native African languages with the English pidgin structures, which were heavily influenced by African linguistic customs. The current AAVE has developed from this early AAVE [87].

The English-origins argument, advanced by Poplack Shana and others, argues that the slaves mostly picked up the English dialects used by their white owners as a result of this contact. According to this hypothesis, the distinctions between mainstream white AmE and AAVE are the result of traits that were maintained from earlier nonstandard English variants [92]. In recent years, there has been a lot of discussion about both the history and the current organisation of AAVE that has been sparked by these views.

### 1.8.2. Its phonology

The AAVE sound system is comparable to other American English dialects. However, compared to other American English systems, a large number of AAVE's phonemes follow distinct phonetic principles. Many of these rules are "optional" depending on the sociolinguistic environment since these differences are systematic and are a part of the linguistic continuum that exists for each individual AAVE speaker.

AAVE shares a similar fundamental phonemic range to other English varieties. The vowels of AAVE are mapped out in Picture 1.1. according to the place of articulation. The AAVE consonants are presented in Picture 1.2. according to their articulatory characteristics. Voiced consonants are formatted in italics [37].




*Picture 1.1. Vowels of AAVE* [37]

| | labial/labiodental | dental/alveolar | palatal | velar/glottal |
|---|---|---|---|---|
| stops | p b | t d | | k g |
| fricatives | f v θ ð | s z | | h |
| affricates | | tʃ dʒ | | |
| nasals | m | n | | ŋ |
| liquids | | l | r | |
| semivowels | w | | j | |

*Picture 1.2. Consonants of AAVE* [37]

An additional general observation is related to the Northern Cities Chain Shift, which is characterised by the tensing and raising of [æ] to [ɛ], the backing of [ɛ] to [ʌ], the lowering of [ɔ] to [a], and the fronting of [a] to [æ]. AAVE speakers are not taking part in this shift, claims Labov [36].

Ask, pronounced [ks], is likely the most archetypal of these AAVE variations. In the Gulf States, the Linguistic Atlas of the Gulf States [76] discovered it among 23% of African Americans but only 1% of European Americans. It has also been substantially linked to the speech of African Americans in other research [108].

There are undoubtedly further characteristic traits, such as r-lessness. It happens when a historical /r/ in a syllable coda is realised as [ə] or omitted, as when four is pronounced as [foə], [fo:], or [fou]. Due to its historical ties to the Southern plantation regions, AAE is typically characterised by some level of r-lessness. In fact, it has been proposed that AAVE endowed SWVE with r-lessness [42].

Not just the sound of /r/ is dropped; /l/ also exhibits this tendency. L-lessness might manifest in one of three ways. One is the vocalisation of a mid- to high-back, rounded vowel or semivowel in the /o/ or /w/ range, as in the word 'feel' pronounced like /fio/. Both African American and European American speech use this variety often and widely [100]. However, when Labov et al. looked into l-lessness in New York City AAVE, they found that a subsequent vowel, where a "linking l" is desirable, strongly disfavored it [68].

Furthermore, African Americans often resort to different substitutes for what was originally /θ/, as in thought, and /ð/, as in that. Today, /θ/ is commonly replaced with /t/, /t/, /tθ/, or /f/ or is completely eliminated and /ð/ is often substituted with /d/, /d/, or [v]. In addition, /ð/ can blend with a preceding consonant, as in the phrase "like that" [ɬaik:aeʔt] [98].

The idea of consonant cluster simplification, which has been widely researched in AAE, is also present in AAVE. It happens when the second consonant is a stop, as in the words pas' for past, des' for desk, hol' for hold, and ac' for act [41]; [25]. Sociolinguists are particularly intrigued by consonant cluster simplification because it intersects with both ethnicity and morphology.

There are a few vowel variations connected with African American speech that are lexically specialised. The majority may be found in SWVE. For instance, the word can't with the vowel of face is fairly prevalent in AAVE but equally common in SWVE [100].

Other variations, nevertheless, are in fact closely associated with African American speech, even in the South. Instead of using the vowel of 'trap' as is customary in the American version, the word 'aunt' is pronounced with the vowel of 'lot'. Black people took this form with them when they emigrated from the South, as Gordon points out in his investigation of northwest Indiana [54]. In the past, the 'wide a' could be heard in many other terms, including 'pasture', 'master', 'half', and 'mass', notably in Virginia. It appears to have started as a prestige pronunciation favoured by plantation owners, who subsequently propagated it to their slaves.

'Sister' with the 'foot' vowel, or [ˈsʊstə], is another lexical peculiarity that is highly associated with AAE. This variant, which was historically common in Southern speech, started as a retraction of the vowel 'kit' when the subsequent syllable had a schwa, as in 'sister', 'mister', 'ribbon', 'crystal', 'Christmas', and 'dinner' [93].

**Conclusion**

In conclusion, the theoretical basis of the thesis on the phonetic traces of American English in the Ukrainian language of L2 speakers provides a cohesive understanding of the factors and concepts that shape language acquisition,

bilingualism, second language acquisition, phonetics, phonology, accent, and phonological interference. This understanding is crucial for exploring the intricacies of language acquisition and its subsequent effects.

The focal point of this chapter is language contact and interference occurring as a result of negative transfer. Another crucial part is the language acquisition, defined as a fundamental process in which humans learn to perceive, understand, and utilize language. Chomsky's concept of universal grammar emphasizes the intrinsic language competence that underlies this process. However, recent research by Tomasello highlights the role of social interaction and practice in language acquisition, suggesting that it is not solely an innate ability.

Second language acquisition is an integral part of language acquisition and leads to bilingualism and multilingualism. Individuals proficient in multiple languages can seamlessly transition between them through code-switching, a norm-governed phenomenon. Myers-Scotton and Green's definition of the aforementioned notions provide valuable insights into multilingual communication and the dynamics of language switching.

Within second language acquisition, acquiring phonetic skills is a complex process influenced by personal characteristics, language input, and instruction. Effective acquisition of a foreign language's sound system is enhanced through a combination of explicit instruction and meaningful engagement with the target language. Exploring the realm of phonetics and phonology deepens our understanding necessary for tracing features of American English in the Ukrainian language.

Another important distinction was made between language transfer and interference that come into play when examining the impact of the first language on second language acquisition. While transfer can facilitate learning, interference may arise when significant differences exist between languages,

particularly in phonological patterns. Struk, Bondarenko, and Royick's extensive research on Canadian Ukrainian exemplifies the phonological interference between English and Ukrainian in detail.

Moreover, considering the notion of language dominance as the uneven proficiency and usage of languages among individuals or communities, the conclusion might be reached that the personal type of it is influenced by a lot of factors, including language use patterns, exposure, age of acquisition, and cultural environment.

Moving specifically into the realm of phonology, in this chapter it has been defined that Ukrainian phonology is based on the Kyiv dialect, yet variations exist in the phonemic status of both consonants and vowels. Understanding Ukrainian phonology is essential to comprehending the phonetic traces of foreign accent in Ukrainian language, as it is described in Ukrainian tradition as an involuntary distortion of the sounds of a particular language by a person who is not a native speaker.

Finally, the accent relevant to the research—Ebonics—provides the insight into the history and phonetic peculiarities of African American English. As a separate English variant, it offers a valuable lens through which it becomes easier to explore the influence of American English on Ukrainian L2 speakers.

Overall, this cohesive understanding of language acquisition, bilingualism, second language acquisition, phonetics, phonology, accent, and phonological interference provides a solid foundation for analyzing the intricate relationship between American English and the pronunciation of Ukrainian sounds for L2 speakers.

# CHAPTER 2. RESEARCH METHODS AND DATA COLLECTION IN PHONOLOGY AND PHONETICS

The study of sounds and their patterns in human language is the subject of the linguistic subfields of phonology and phonetics. Researchers use a variety of study tools and data collection strategies to examine and comprehend the intricacies of phonological and phonetic issues. Below is presented a general overview of these techniques and procedures that are frequently applied in phonology and phonetics research.

Research in phonology and phonetics heavily relies on experimental approaches. They take place in controlled lab environments where scientists work with and monitor particular phonological or phonetic factors. For example, airflow metres, electroglottographs, and spectrograms are used in instrumental study of speech sounds to examine acoustic characteristics [69]. In perception tests, participants listen to and detect phonetic contrasts, which yield useful information on how people perceive sound [57].

Massive databases of recorded speech, known as corpora, are analyzed via corpus-based methods to gain insight into phonological and phonetic phenomena. These corpora, gathered from real-life circumstances like conversations or audio recordings of speeches, offer rich data for investigation. They make it possible for scholars to examine patterns, phonetic variation, and the frequency and distribution of sounds within a language [21]. The study of corpus data is made easier by resources like the International Phonetic Alphabet (IPA) and automatic speech recognition software.

Articulatory approaches entail tracking the movements and placements in the articulatory organs in order to examine how speech sounds are produced. Insights into the physical processes involved in sound creation are provided by methods like electropalatography and ultrasound imaging, which collect data on articulatory motions [51].

Research is done using fieldwork methods in authentic situations, usually in communities where the target language is uttered. Through participant observation, interviews, and recordings of actual speech events, researchers gather data. According to Himmelmann, fieldwork improves our understanding of language use and variation by enabling the study of phonological and phonetic phenomena in their cultural and social contexts [58]. It additionally supports efforts to preserve languages by assisting in the identification and documentation of endangered or under-studied languages.

Perceptual methods investigate how listeners perceive and understand speech sounds. Listeners' capacity to distinguish between sounds and their sensitivity to phonetic signals are evaluated in psycholinguistic tests such as lexical decision and discrimination tasks. These techniques aid in comprehending phonetic and phonological patterns by offering insights into how people interpret and process the acoustic data [30].

To summarize, phonology and phonetics research employs a variety of academic methods and data collection strategies to explore the intricacies of human language sound patterns. People are learning more about phonological and phonetic phenomena owing to experimental approaches, corpus-based methodologies, articulatory investigations, fieldwork, and perceptual experiments. The nature of human speech and its underlying patterns are better understood by researchers by integrating various methodologies and combining their findings.

### 2.1. Data collection principles

Gathering necessary data is of utmost importance in any phonetic or phonological investigation. The ability to assess and comprehend the subtle aspects of speech sounds, phonetic variation, and phonological patterns depends on the collection of accurate and comprehensive data. Researchers can assure the

validity and reliability of their findings by using representative samples and appropriate data collection methods.

The initial phase of the study consisted of exploring the internet for the relevant material needed for fieldwork-based naturalistic data gathering, regarded as the best data collection strategy for phonological analysis. The greatest challenge was finding an American English speaker who has studied or is currently learning Ukrainian. Surprisingly, despite the abundance of results available, the selection process was hampered by the absence of audio or video content required for the research. Judah Kelechi, an Instagram blogger from the United States who spent six years living and studying in Ukraine, was my final choice. After watching dozens of his YouTube interviews, it was almost impossible to decide on the best one due to the poor sound quality, background noises, or for some other reasons. Finally, I came across a channel with 345 thousand subscribers named "Зе Інтерв'юер" (The Interviewer), where there is an hour-long interview with decent sound quality. This is the YouTube channel of Anatoliy Anatolich, a Ukrainian showman, radio and TV presenter, where one can find frank interviews with him on relevant topics and creative experiments in various formats without TV censorship.

The video chosen for the analysis is called "Джуда про українок, расизм і про те, чому іноземці їдуть навчатися в Україну. Зе Інтерв'юєр", which can be translated into English as "Judah on Ukrainian women, racism, and why foreigners come to study in Ukraine. The Interviewer". It was filmed in 2020 and posted on YouTube on the 26th of December 2020 and covers the topics of the life in Ukraine, racism, the Black Lives Matter movement, COVID-19 pandemic, blog and its monetization, comparison of education in medical field both in Ukraine and in the USA and many more. Some fragments were filmed in English, while the majority of video material is in Ukrainian.

The interview's star, Judah Kelechi, is from Detroit, Michigan. Judah is African American, and his English is, at least in terms of accent, somewhat distinct from General American English. He became popular in Ukraine as a result of his blog on Instagram, where he talked exclusively in Ukrainian. Judah earned the nickname "Yura from Kolomyia" (in Ukrainian Юра з Коломиї) because of his enrollment at the Ivano Frankivsk National Medical University and discussions about the specifics of living in the western part of Ukraine. He no longer resides in Ukraine due to the war, thus the details of his current whereabouts are obscure.

### 2.2. Method of direct observation

An important method in phonology and phonetics research is direct observation, which I chose for further study and analysis. It entails the methodical and meticulous observation of speech sounds and their generation in natural settings [69]. To understand phonological and phonetic processes, researchers closely monitor and examine the speech patterns of speakers. This approach offers a special opportunity to determine language use in authentic settings and to record the richness and variety present in spoken language.

Direct observation involves observing and documenting speech events happening in everyday situations, such as conversations, interviews, or public speeches. Researchers can precisely analyze the articulatory movements, auditory characteristics, and contextual elements that affect speech production by being present during these interactions. They can identify aspects like as vowel quality, consonant articulation, prosodic patterns, and coarticulatory effects, among others.

There are many benefits to direct observation in phonology and phonetics research. First and foremost, as it captures language use in its spontaneous and natural state, it enables researchers to gather real data that is ecologically valid

[69]. Researchers can learn more about how speech sounds are created and perceived in regular communication by studying speakers in natural settings. The complexity and variety of speech are better reflected by using an approach that is objective.

Secondly, direct observation allows for the analysis of individual variance and sociolinguistic factors that may influence speech production. Researchers can look at social norms, regional accents, and speech patterns to see how they affect phonological and phonetic patterns [69]. With this method, it is possible to investigate how social and cultural influences affect the creation and perception of sounds.

Furthermore, direct observation enables the identification and documentation of rare or endangered languages. According to Himmelmann, researchers can record, analyze, and document the phonetic and phonological patterns of speakers of understudied languages by actually witnessing and recording them [58]. This would aid in the attempt to preserve those languages. With this method, it is made sure that important linguistic knowledge has been recorded and preserved before it may vanish altogether.

However, it's essential to recognize the limitations of direct observation. One of the possible constraints is the prospect of observer influences or biases. Ladefoged contends that the presence of a researcher may cause speakers who are being observed to act differently, for example by using abnormal speech patterns or being self-conscious [69]. To preserve the speech's naturalness, researchers must make an effort to have as little of an impact as possible and use covert observation techniques.

Direct observation could also be limited in terms of data collecting in practice. Conducting extensive fieldwork and obtaining enough data can be time-consuming and logistically difficult [58]. To guarantee a sufficient sample size

and representativeness of the speech occurrences, researchers must carefully plan and organize their fieldwork.

Ultimately, in phonology and phonetics research, the method of direct observation provides essential insights on speech sounds and their production in naturalistic settings. It enables the gathering of ecologically reliable data, the investigation of sociolinguistic and individual aspects, and the recording of endangered languages. However, potential observer effects and logistical difficulties related to data collection must be taken into consideration by researchers.

### 2.3. Transcription and processing

The method of data transcription and processing plays a vital role in this research, as well. It encompasses the methodical transcription of speech sounds into written form, followed by analysis and manipulation of the transcribed data. With the use of transcription, researchers can examine and compare linguistic phenomena across languages and contexts by arranging the rich auditory and articulatory information that is present in speech.

With the help of phonetic symbols from the International Phonetic Alphabet (IPA), spoken language is transformed into written format during transcription. Researchers pay close attention to recorded speech samples and accurately interpret the sounds they hear based on their phonetic characteristics, such as the place and manner of articulation, voicing, and prosodic qualities [69]. This transcription process results in a representation of the speech sounds that can be analyzed and processed using computational tools and statistical methods.

Once the material is transcribed, it can be processed using a variety of methods. Johnson outlines one of the most popular approaches - quantitative analysis of phonetic data - which involves obtaining acoustic properties from transcriptions [64]. The assessment of variables including time, pitch, intensity,

and formant frequencies can be achieved as a result of acoustic analysis. Insights into phonological patterns and processes are gained by using these measurements to quantify and compare phonetic diversity within and between languages.

In addition to acoustic analysis, transcribed data can also be analyzed by computational methods including machine learning algorithms and automated speech recognition (ASR) systems. ASR systems enable extensive transcription and analysis of speech data by turning spoken language into written text [110]. To automatically classify and categorize speech sounds or to model phonological processes based on transcribed data, machine learning techniques can be employed. These computational techniques improve the effectiveness and precision of data processing, enabling the study of intricate phonological and phonetic phenomena [64].

In the study of phonology and phonetics, the method of transcription and data processing is crucial. In order to accurately and thoroughly analyze speech sounds, it offers a standardized and systematic approach to accomplish this. The comparison of linguistic data across languages, dialects, and individuals made possible by transcription makes it easier to explore both language-specific variance and general phonetic and phonological principles [69].

Moreover, the transcription and processing of data make it easier to study how languages change and evolve. Researchers can track phonetic and phonological variations through time and investigate the dynamics of language variation and change by transcribing and examining historical speech recordings or archival materials [64]. As transcribed data provides a written record of the linguistic characteristics of these languages, this method also contributes in the documentation and preservation of endangered languages [69].

## 2.4. Applications assisting in accent analysis

When the material for the study was selected, it was necessary to convert the video file into an audio format for additional processing with other tools. Given the impressive variety of internet platforms that provide this service, audio-online-converter.com was the one that appealed to me most.

After the audio file was ready, it had to be divided into 24 recordings of different words with both stressed and unstressed vowel positions. The interview is 1 hour and 15 minutes long and contains far too much extraneous information. An online audio trimmer, which can be easily accessible via the link auditrimmer.com, greatly aided in removing this surplus information.

When all the audios were ready for the final stage of the material preparation for the acoustic analysis, the program Praat was used to generate spectrograms. Praat is a free computer program for analyzing speech phonetically. Paul Boersma and David Weenink of the University of Amsterdam created it, and they are still working on developing it. The program's ability to function on a variety of operating systems, including different versions of Unix, Linux, Mac, and Microsoft Windows (2000, XP, Vista, 7, 8, 10), is remarkable, as it allows scholars from all over the globe to access the software without paying a dime [22]. Understanding how to utilize Praat to create spectrograms or how to obtain the values of formants does not take a lot of time or effort because of its simple structure. In addition, there are a ton of instructional videos on YouTube that teach beginners how to use the application. The software quickly generated the spectrograms after receiving all of the audio recordings, allowing for further research.

## Conclusion

One can move on to analysis with specific theoretical knowledge, but to be able to do successful research, one must carefully consider the processes and

requirements for data gathering. It can be problematic to select the best techniques and methods because linguistics, as a science, offers a large range of them. Collecting and analyzing precise and thorough data are necessary for the study of phonology and phonetics, therefore the chosen research approach—direct observation—involved the careful selection of an appropriate data collection method. All that was necessary to examine the speech patterns of Judah Kelechi, an African American English speaker who learned Ukrainian. This method allowed for the examination of authentic language use in natural settings and the documentation of the richness and variation present in spoken language.

To investigate the impact of American English on the speech of an L2 Ukrainian speaker, Judah Kelechi was chosen as the research subject. Despite the difficulties in finding appropriate audio or video content for research, the selected interview with Judah gave insightful details about his experiences, viewpoints, and linguistic usage. His unusual accent and usage of Ukrainian in his popular blog brought attention to the interaction between phonetic variance, identity, and language learning.

Data processing and transcription were also essential components of the research methodology. The International Phonetic Alphabet was used to appropriately describe the spoken sounds in the speech samples and prepare the data for further evaluation. The audio content was appropriately formatted and divided into smaller pieces to facilitate more in-depth analysis. In addition, the Praat program produced spectrograms, which offered visual representations of the acoustic characteristics of the recorded speech and aided in the study and comprehension of phonetic features and patterns.

# CHAPTER 3. ACOUSTIC ANALYSIS OF PHONETIC TRACES OF AMERICAN ENGLISH IN UKRAINIAN

For the research it was decided to analyze primarily vowel sounds because usually they possess greater perceptual salience, have larger variation and serve as the focal point of stress in words and sentences. Additionally, each language has a distinctive set of vowel sounds, and the vowel inventory of a language exerts an immense effect on the phonetic patterns and accent. People can tell whether someone is using vowels from their mother tongue instead of vowels from the target language by looking at how they produce them, which results in a foreign accent. The fact that vowel sounds display greater acoustic diversity than consonant sounds is another reason in favor of choosing vowels when tracing phonetic features of American English in Ukrainian. Vowels provide for a broad variety of possible configurations because they encompass the unrestricted movement of air through the vocal tract without considerable restriction. As a result, even minute variations in vowel quality are simple to detect and understand.

Given that Ukrainian words were analyzed, some difficulties were faced throughout the process, one of which was finding the most appropriate International Phonetic Alphabet (IPA) symbol for a specific Ukrainian sound. The reason for this is that there are few and relatively unknown phonetic studies that deal with the transcription of Ukrainian vowels. Researchers are driven to make unsupported assumptions or draw comparisons to other extensively researched languages when there is a dearth of trustworthy and adequate experimental data on Ukrainian phones. For the phone mapping rules required in many phonetic studies as well as for purposes of voice recognition, accurate comparisons with other languages that take into consideration the unique peculiarities of the Ukrainian phonetic system are essential [104].

As was previously mentioned, selecting the most suitable IPA symbol for a Ukrainian sound is a convoluted process because it calls for the collection of representative experimental data, a thorough comparison of the phonetic data from various languages, and a solid understanding of the IPA notations. Dudnyk, in particular, has observed that the irrationally significant gap between the stressed and unstressed [и] and [*u*], presumably because of the incorrect reading of these vowels [5], in the Bilous results challenges the typical propensity of Ukrainian vocalism to keep a vowel property with a non-stressed status, which was extensively described by Totska [13].

Therefore, all of the IPA symbols for Ukrainian vowels were taken from M. Vakulenko's "Ukrainian vowel phones in the IPA context" study. The combined use of auditory comparison analysis, auditory observation, and acoustic invariant speech sound analysis forms the foundation of this study. The auditory comparative analysis was carried out by comparing the IPA sounds on the page of the Experimental Phonetic Laboratory "Arturo Genre" (Laboratorio di Fonetica Sperimentale) with the CD-quality speech recordings of four native Ukrainian professional actors trained in accordance with the orthoepic norms described in Bilodid [1]. Three speakers represented the southeastern dialect group, which constitutes the foundation for the current standard Ukrainian, while one speaker represented the southwestern dialect group. As a result, the researcher supplied information on both the standard Ukrainian language as well as dialectal variants that hadn't been researched for decades.

### 3.1. Vowel sounds

The vowels that are discussed here are not provided in isolation, but rather in words. Strange, Verbrugge, Shankweiler, and Edman found that naive listeners incorrectly interpreted around three times as many tokens of isolated vowels as the same vowels in consonantal context. These results support their claim that formant transitions, which are typically thought of as supplying data on consonant

identity, also convey perceptually important information about vowel identity, explaining why vowels are more understandable in consonantal context [27].

The values of Formants 1 and 2 determined using the Praat program and measured in Hz are displayed in the tables below together with the Ukrainian language's standard frequencies. Formant is referred to as the wide spectral maximum that comes from an acoustic resonance of a person's vocal tract and is used predominantly in speech science and phonetics [101]. A formant in acoustics is typically described as a big peak, or local maximum, in the spectrum [61]. Only two formants are included since the first (F1) has a direct correlation with vowel height and the second (F2) exhibits an exponential correlation with degree of backness. The two initial formants, F1 and F2, are often enough to distinguish the vowel. It also should be noted that the higher the F1 frequency, the lower the vowel height and the more front the vowel, the higher the F2 figure.

### 3.1.1. Front vowels

The sounds to be analyzed are accented and unaccented variations of Ukrainian /e/. It has been categorised as a front (center-approached) mid (lowered) vowel [7, p. 118], or even as a a mid-front retracted vowel [1, p. 61]. There are two other position regarding its classification: by Totska that it is a front vowel on the border with the central row, mid but strongly lowered [13, p. 56] and by Pompino-Marschall that it could be a slightly retracted midlow front vowel [85, p. 5].

According to Vakulenko's auditory examination, this vowel sounds quite similar to the French 'même' vowel [ɛ], but is a little more relaxed. As shown by its formant frequencies of F1 = 700 Hz and F2 = 2100 Hz [103, p. 28], the position of /e/ is midlow and front but not excessive. Vakulenko therefore suggests the abbreviation [ɛ˗] [104].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɛ̝/ | 538.18 | 1604.60 | 700 | 2100±500 |
| Sample word | дешево – [ˈdɛ̝ʃɛvo̝⁺] | | | |

*Table 3.1*

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɛ̝/ | 523.82 | 1659.73 | 700 | 2100±500 |
| Sample word | кишеню – [kɨ̟⁺ˈʃɛ̝nʲʊ] | | | |

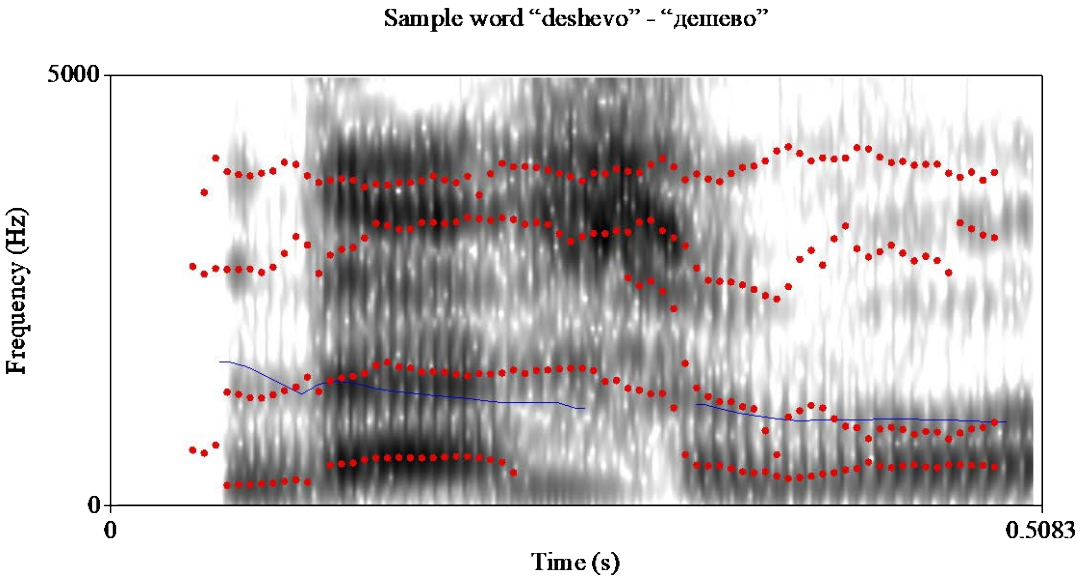
*Table 3.2*

In the case of the sound /ɛ̝/ both words illustrate consistency in pronunciation. However, the issues occur when comparing formant values with the suggested standard. Vakulenko states that its its formant frequencies are 700 Hz and 2100 Hz [103, p. 28], while Ishchenko argues that they are 520±20 Hz and 1630±60 Hz [9].

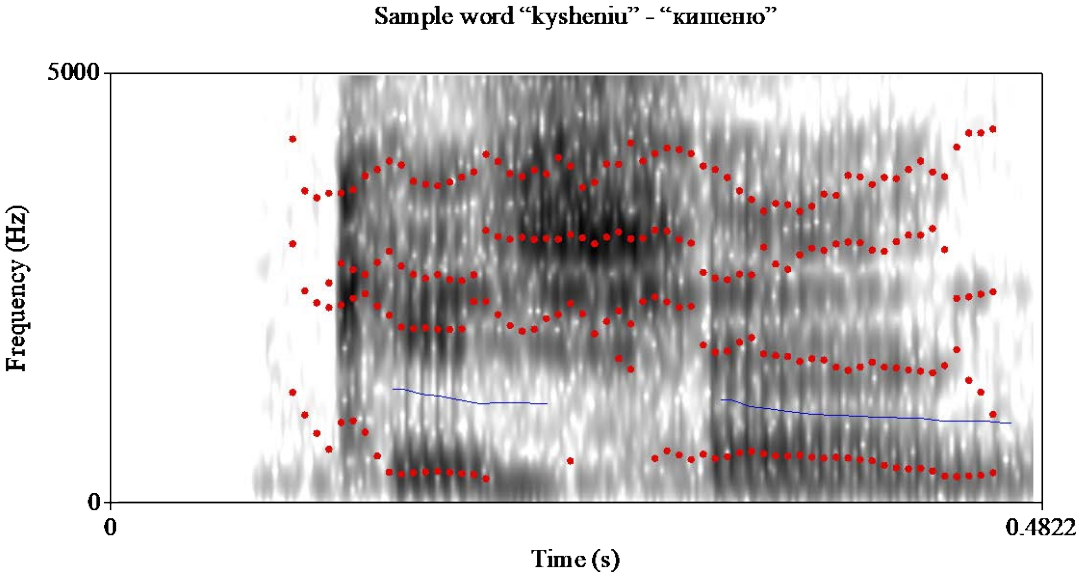
If one decides to choose the former values, the sounds produced by the speaker are higher than those considered to be standard in Ukrainian, yet when one decides to accept the latter as an established norm, then the conclusion can be drawn that the sounds are pronounced accurately without any deviations.

Judging from the illustrations that are presented below and the audios analyzed, it may be stated with a certain confidence that the sounds are identical to the Ukrainian standards. In Spectrograms 3.1 and 3.2 it may be observed that the red dotted formant lines are very even in the darkest areas, which basically

depict the analyzed vowel. This might be a sign that the speaker's pronunciation is stable and independent from the consonantal context.




*Spectrogram 3.1*




*Spectrogram 3.2*

Its unstressed equivalent has been defined as a more raised vowel than a stressed /e/, particularly before the syllable with a high vowel /i/, /и/, or /y/ because of the vowel harmony effect [7, p. 118], or a front mid vowel, yet a little more advanced than a stressed /e/ [1, p. 119-120], or, on the contrary, a more retracted and raised than /e/ vowel [5, p. 20-22]. An unaccented vowel is closer

to the Jones diagram's centre than its accented counterpart in the absence of remote assimilation or other sound interaction effects, therefore all of these descriptions should be adapted accordingly.

As stated by Brovchenko and Zilynsjkyj, palatalized consonants such as those in the words 'ллється' - 'is flown' and 'знаємо' - 'we know' can produce a more narrow and fronted allophone of the sound /e/ [1, p. 127]. This specific narrow variant does follow palatalized consonants and may be the result of vowel harmony [85, p. 6]. This mixed phone is a usual instance, with F1 = 500 Hz and F2 = 2000 Hz being the two main formants [104].

Due to vocal assimilation with subsequent high vowels, two major forms of an unstressed Ukrainian /e/ are thus possible: a'regular' central [ɜ̟⁺] that is typically pushed towards the Jones diagram's centre, and a significantly elevated sound that corresponds to the [ɘ̟⁺] that is produced by vocal assimilation with next high vowels [104]. For that reason, in Table 3.3 the sound is defined with the symbol [ɘ̟⁺] because it precedes the vowel /i/, while in Table 3.4 the position of the stressed vowel is not influenced by its context, thus it is marked by the symbol [ɜ̟⁺].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɘ̟⁺/ | 422.22 | 1643.28 | 500 | 2000 |
| Sample word | мені – [mɘ̟⁺ˈnʲi] | | | |

Table 3.3

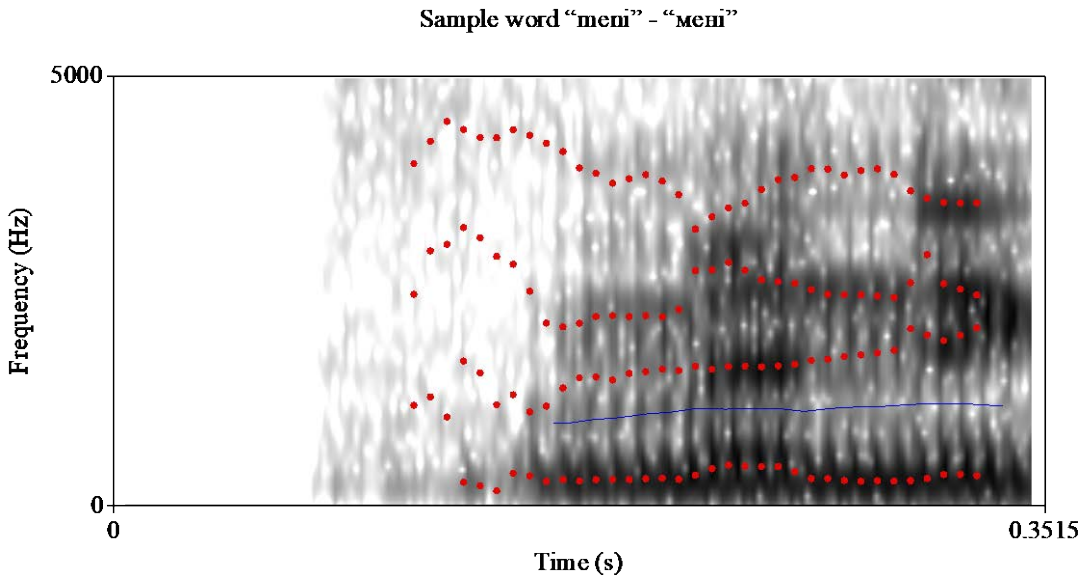
| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ʒ̩⁺/ | 601.49 | 1710.19 | 500 | 2000 |
| Sample word | телефоні – [tʒ̩⁺lʒ̩⁺ˈfǫnʲį̇̄] | | | |

Table 3.4

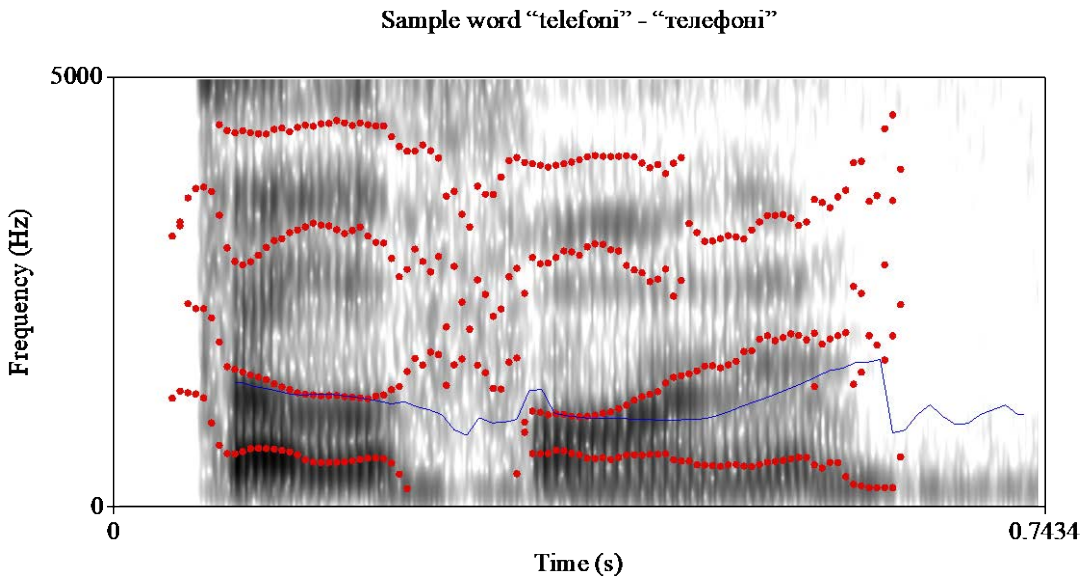
As it was previously mentioned, the two allophones are created in accordance to their position within a lexical unit. In the word ‘мені’ the discussed vowel is regressively assimilated by the sound /i/, therefore the formant values in both cases are inconsistent.

The sound /ə̩⁺/ with F1=422.22 and F2=1643.28 resembles Ukrainian /į̇⁺/, while the vowel /ʒ̩⁺/ appears to be similar with the low-mid front unrounded vowel /ɛ/ characteristic of American English, rather than the Ukrainian vowel inventory. Lindblom defined the formant values of the open-mid front unrounded vowel with the following numbers for F1 and F2: 580 Hz and 1799 Hz [73].

In general, the difference in pronunciation of these two allophones can be seen from Spectrograms 3.3 and 3.4.




*Spectrogram 3.3*




*Spectrogram 3.4*

The next sound to be analyzed is /i/. Traditionally, a stressed vowel in Ukrainian, or /i/, is characterised as a high front vowel [7, p. 118]. It has the same IPA symbol as in English 'valley', which is /i/. This vowel typically causes the preceding consonant to become palatalized in the Ukrainian language [104].

Ishchenko's and Vakulenko's views on formant 1 and 2 frequencies of the high front vowel coincide and constitute 280±20 and 2300±50 respectively [9]; [104].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /i/ | 424.92 | 1824.81 | 280±20 | 2300±50 |
| Sample word | іспити – [ˈispʲ⁺tʲ⁺] | | | |

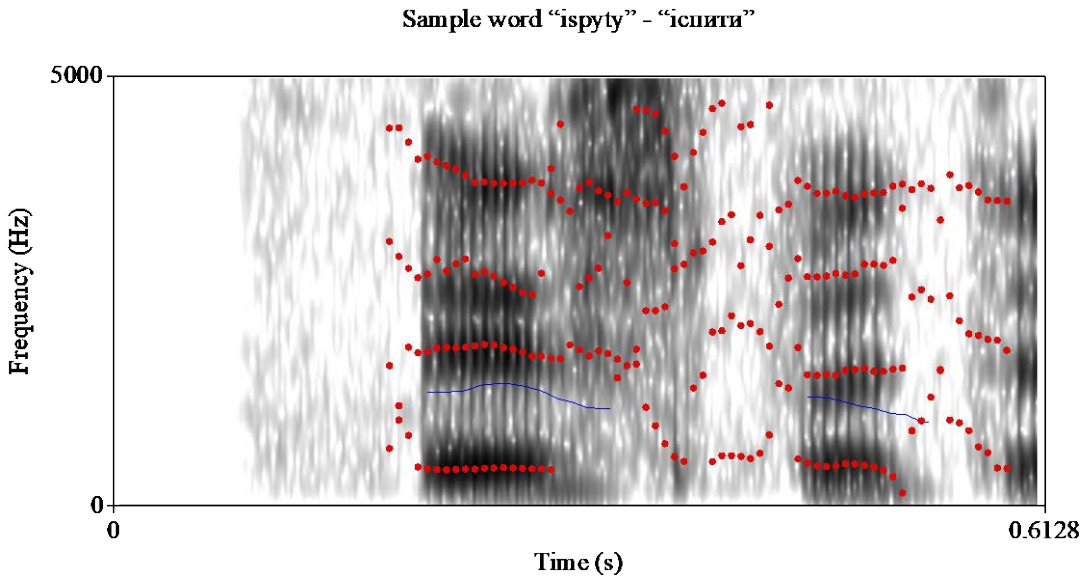
*Table 3.5*

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /i/ | 401.24 | 1839.70 | 280±20 | 2300±50 |
| Sample word | звідки – [ˈzvʲidkɨ̟⁺] | | | |

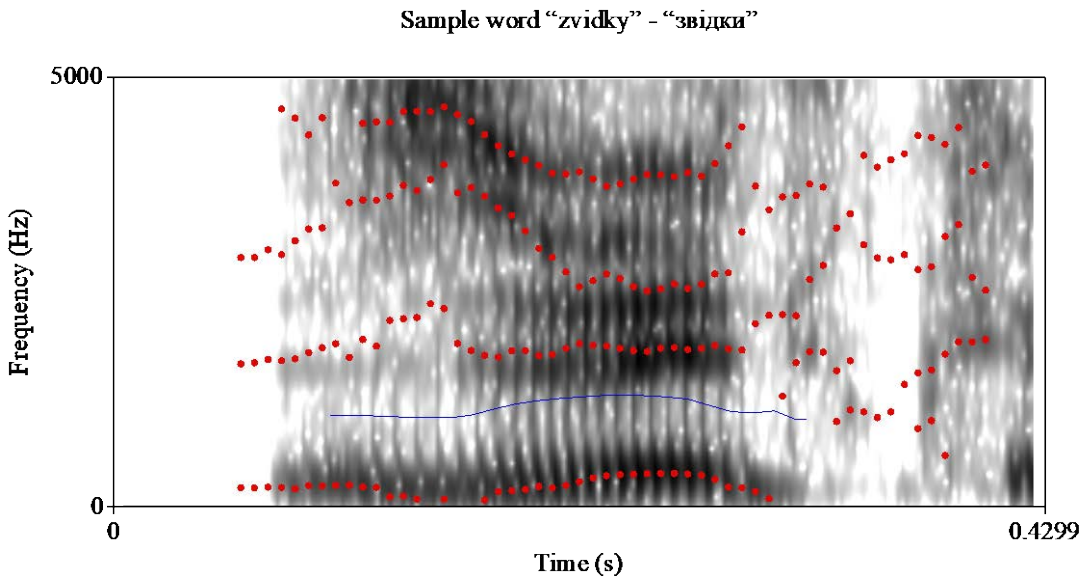
*Table 3.6*

Comparing with the high more lowered central less advanced vowel and the near-close near-front unrounded vowel, it can be assumed that the high front vowel in stressed position is neutralized because it is pronounced lower and less fronted.

Spectrograms 3.5 and 3.6 show that in both words ‘іспити’ and ‘звідки’ the vowel is pronounced almost the same. In the former case it is slightly lower than in the latter.




*Spectrogram 3.5*




*Spectrogram 3.6*

Finally, the unstressed /i/ is somewhat lowered and retracted but still a high front vowel, therefore there are no obvious differences [1, p. 122]. Vakulenko's research suggests that the modified IPA symbol /i̟-/ is appropriate in this case [104].

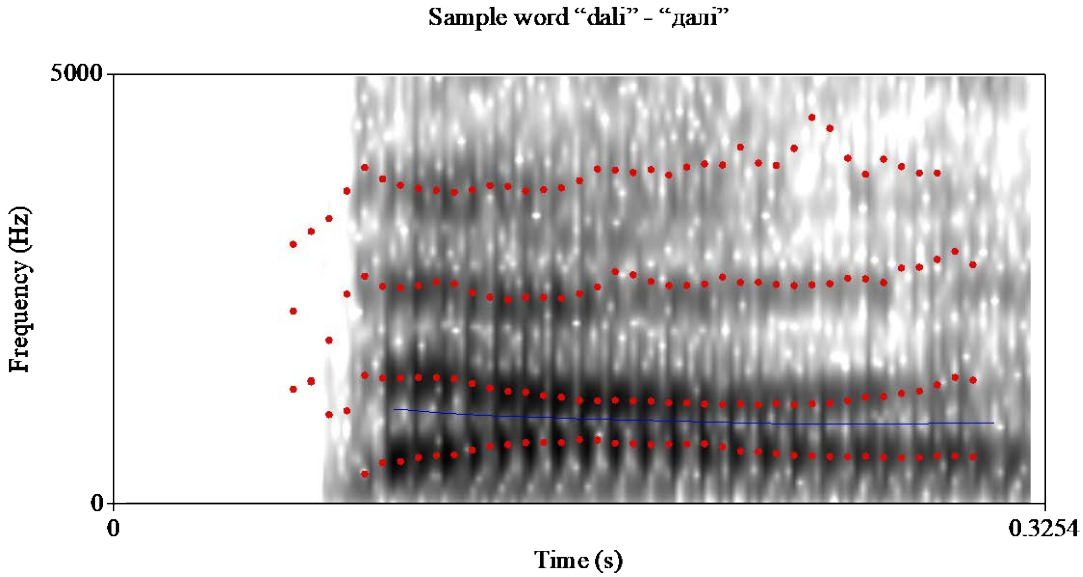
| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /i̟-/ | 550.03 | 1356.09 | 280±20 | 2300±50 |
| Sample word | далі – [ˈdɑ⁺lʲi̟-] | | | |

*Table 3.7*

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /i̟-/ | 354.19 | 2143.87 | 280±20 | 2300±50 |
| Sample word | пішов – [pʲi̟-ˈʃo̟v] | | | |

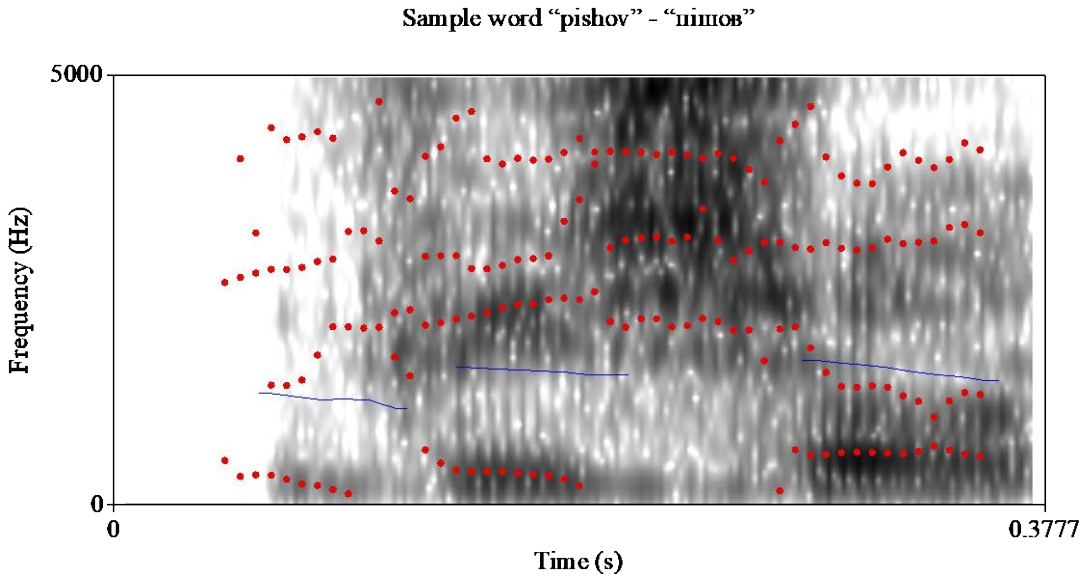
*Table 3.8*

Regarding the obvious differences in formant values in Tables 3.7 and 3.8, it may be concluded that in the end of the word the somewhat lowered and retracted high front vowel is reduced more than in a consonantal context.




*Spectrogram 3.7*

From the spectrogram one might notice that the sound is rather similar to the open-mid central unrounded vowel /ɜ/ with F1=474 Hz and F2=1379 Hz [73].




*Spectrogram 3.8*

In this instance, however, it almost falls within the standards of pronunciation of the high front vowel /i/ in a stressed position, which appears rather unconventional.

### 3.1.2. Central vowels

The sound to be discussed is a stressed Ukrainian vowel /a/. Formerly in the field of phonetics and phonology it was generally classified as a low back vowel or a low back vowel approaching a central one [1, p. 59], whilst Bilous, Press, and Pugh place it in the central category [5, p. 22]. Nevertheless, Vakulenko's evaluations show that this sound possesses the second permanent formant Fp2 in the range of 1000–1200 Hz, making it a low back advanced vowel [ɑ⁺] [3, p. 167].

Regarding formant values, Ishchenko's position is similar, since he defines the values of the first formant within the range of 720-780 Hz, while the second one lies in the diapason of 1170 and 1230 [9].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɑ⁺/ | 670.66 | 1650.24 | 750±30 | 1200±30 |
| Sample word | раз – [ˈrɑ⁺z] | | | |

*Table 3.9*

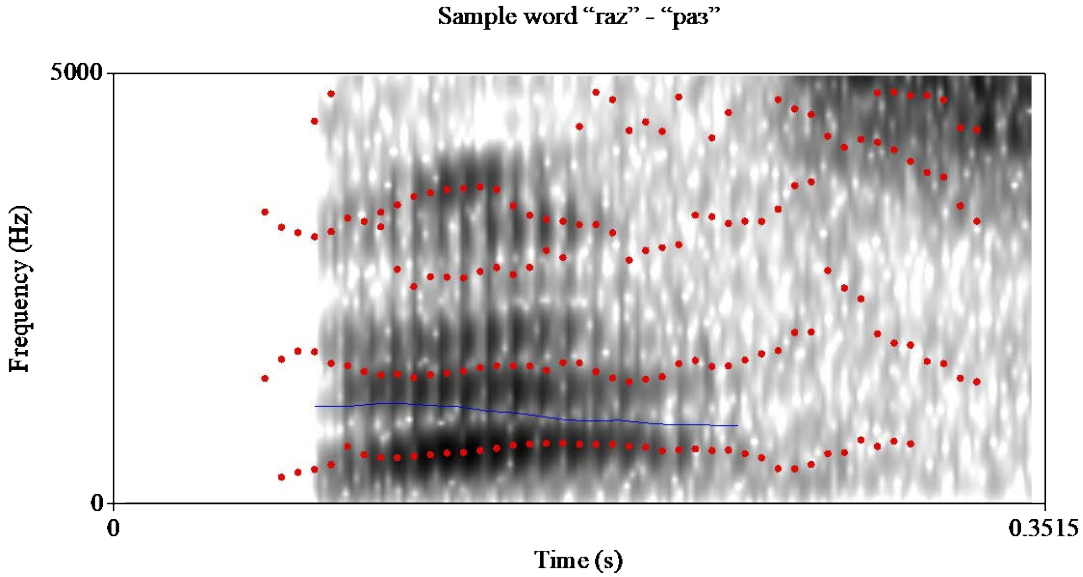
| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɑ⁺/ | 871.12 | 1730.72 | 750±30 | 1200±30 |
| Sample word | зал – [ˈzɑ⁺l] | | | |

*Table 3.10*

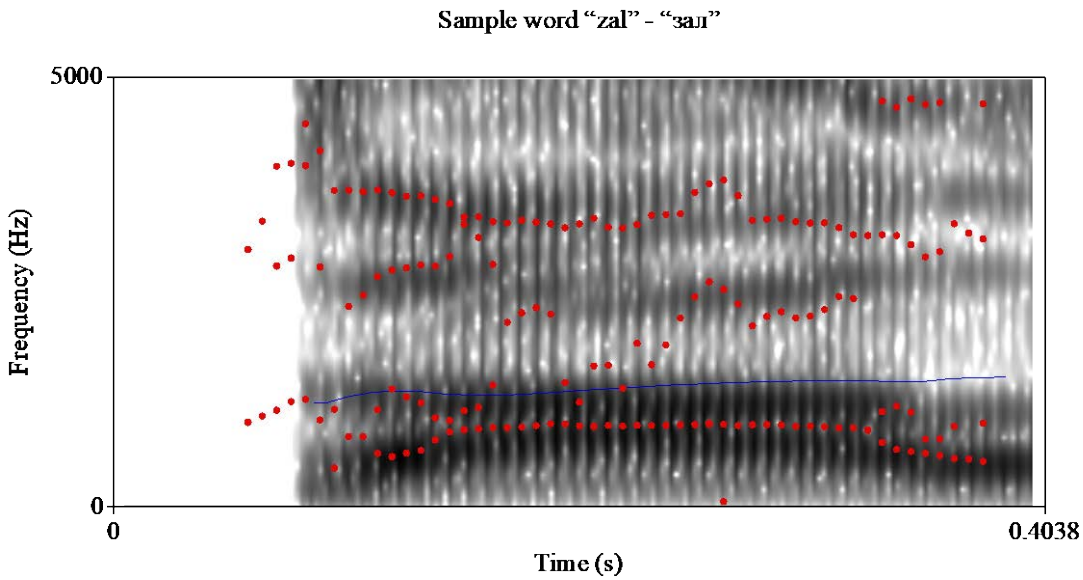
The two tables above show the lack of consistency regarding the pronunciation of this sound. As it can be observed from the F1 values, in the instance of the word ‘раз’ the low back advanced vowel is produced higher, as opposed to the same central sound in the word ‘зал’. Formant 1 frequency 670.66 resembles more that one of the open-mid back rounded vowel /ɔ/ with its F1 at 652 in American English [73].

Table 3.10 illustrates a slightly different tendency, according to the degree of vowel height, the sound /ɑ⁺/ resembles more open back unrounded vowel /ɑ/ characteristic of American English rather than Ukrainian.

When it comes to the level of backness, the two spectrograms below show minor discrepancy between the F2 values in both examples. However, as it can be seen from the data provided in the tables, the Ukrainian standard reaches its maximum at 1230 Hz, while in both words the vowel exceeds the mark of 1600 Hz meaning that both sounds are more fronted than they should be.




*Spectrogram 3.9*




*Spectrogram 3.10*

The low back advanced vowel has its unstressed counterpart, which is often described as a mid central vowel [1, p. 113] or a midlow central vowel [13]. The auditory comparison study performed by Vakulenko reveals that this is a midlow central vowel [ɐ] [3]. This phone may also be seen in the letter readout, following palatalized consonants and [j] in an iotated vowel [jɐ] [1, p. 125]. For example, the second syllable of the German word 'besser' has a similar sound [3].

Unfortunately, the data on formant values of the unstressed sound is absent, that is why the same data by Ishchenko is included in both Table 3.11 and Table 3.12 [9].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɐ/ | 562.14 | 1305.92 | 750±30 | 1200±30 |
| Sample word | важка – [vɐ ˈʒkɑ$^{+}$] | | | |

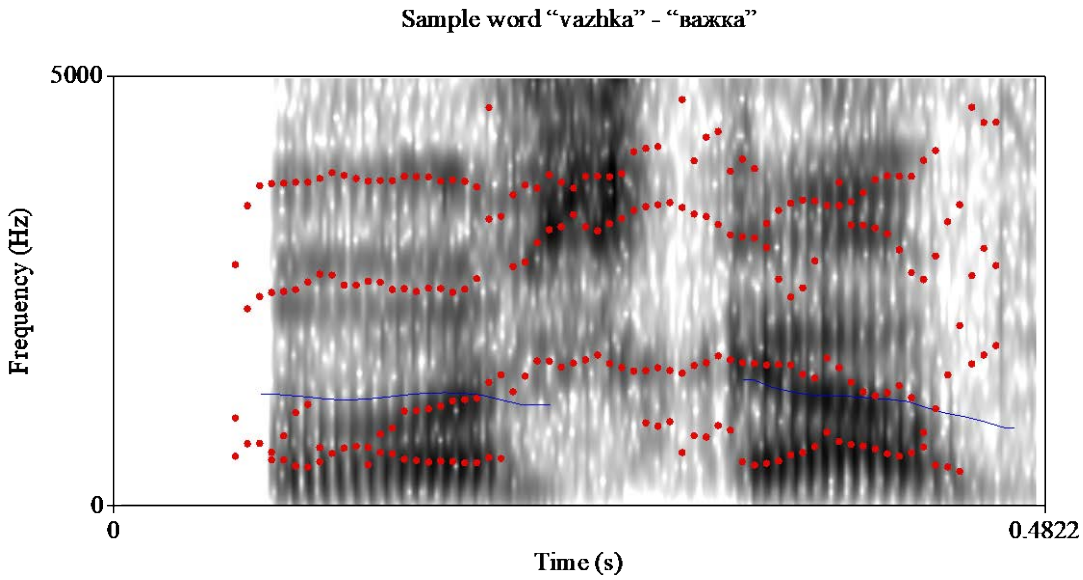
*Table 3.11*

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɐ/ | 591.37 | 1251.08 | 750±30 | 1200±30 |
| Sample word | мама – [ˈmɑ⁺mɐ] | | | |

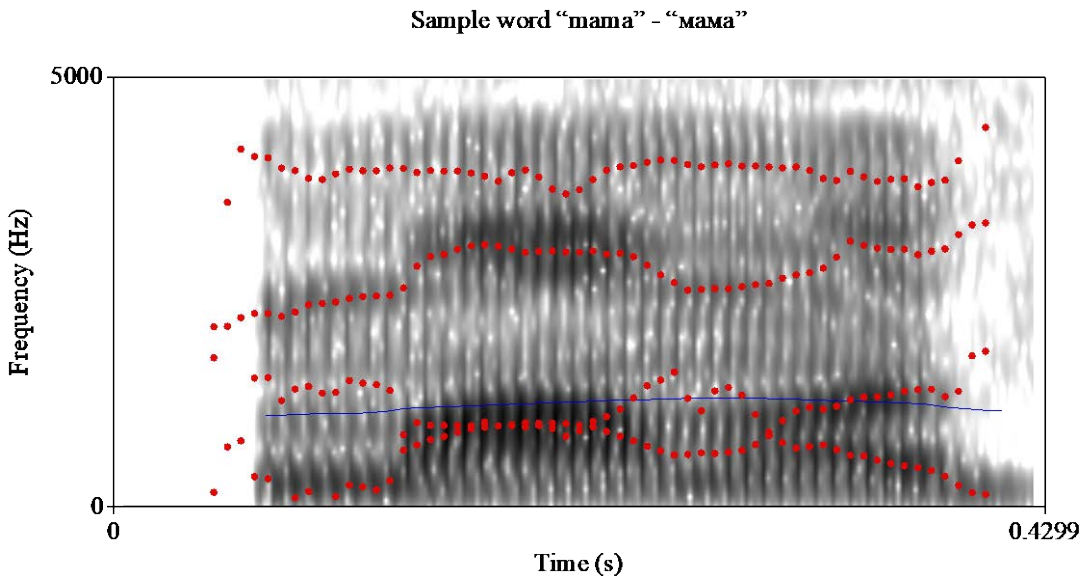
*Table 3.12*

The unstressed vowels in the two circumstances shown above in Tables 3.11 and 3.12 are nearly identical, with very little variations between the two. However, it is clear by comparing the AAVE speaker's F1 frequencies to those of the Ukrainian language that the vowels are higher owing to the influence from American English. The L2 speaker's produced sound is more like the near-open central vowel /ʌ/ in AmE which possesses F1 and F2 frequencies of roughly 620 Hz and 1200 Hz respectively [73].

It can be seen from Spectrograms 3.11 and 3.12 that Formant 2 values are almost the same, which not only proves consistency, but also similarity to the position of the sound production in Ukrainian.




*Spectrogram 3.11*




*Spectrogram 3.12*

The sound to be discussed is the most challenging to identify within the IPA. This is a Ukrainian /и/, which Steriolo categorized as a front retracted vowel close to [ɨ] on the bases of acoustic data collected from her experiments [12, p. 55]. Pompino-Marschall came to the conclusion that the Ukrainian [и] is more similar to an [ɨ] due to the fundamental difference in sound between [и] and [ɪ] similar to the German 'bitte'. According to Pompino-Marschall, Steriopolo and Żygis, the vowel [и] would be more accurately represented as [ɪ̟], since in contrast to [i] the tongue is somewhat retracted and lowered in the formation of this vowel. However, eventually a compromising notation /ɪ̟/ (lying between /ɪ/ and /ɨ/) arose. Due to its articulation with strongly parted lips, it may appear to shift to [ɪ] in the acoustical vowel space [85, p. 5-6]. As a result, the [ɨ̟⁺] symbol should be used to represent an accented Ukrainian /и/ to denote that it is a near-close near-front unrounded vowel.

The 2 formant values, according to Vakulenko, were found to lie in the range of 1300–2100 Hz, with the central value of 1700 Hz [104]. Regarding the first formant value, Ishchenko believes that it should constitute around 350 Hz [9].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /i̪⁺/ | 391.88 | 1701.26 | 350±30 | 1700±400 |
| Sample word | медицина – [mɜ̪⁺di̪⁺ˈt͡si̪⁺nɐ] | | | |

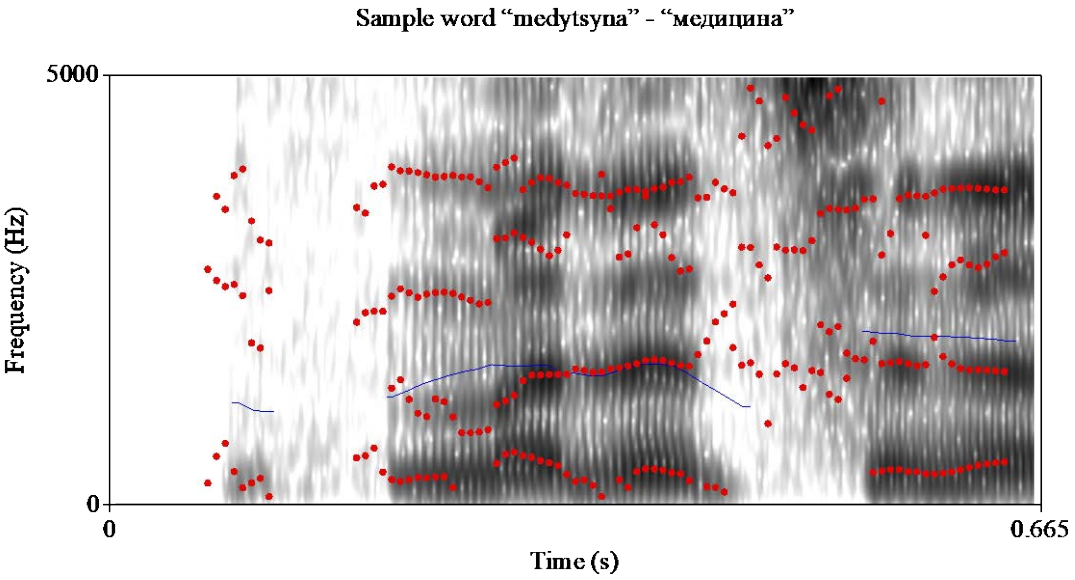
*Table 3.13*

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /i̪⁺/ | 402.06 | 1735.64 | 350±30 | 1700±400 |
| Sample word | грип – [ˈɦri̪⁺p] | | | |

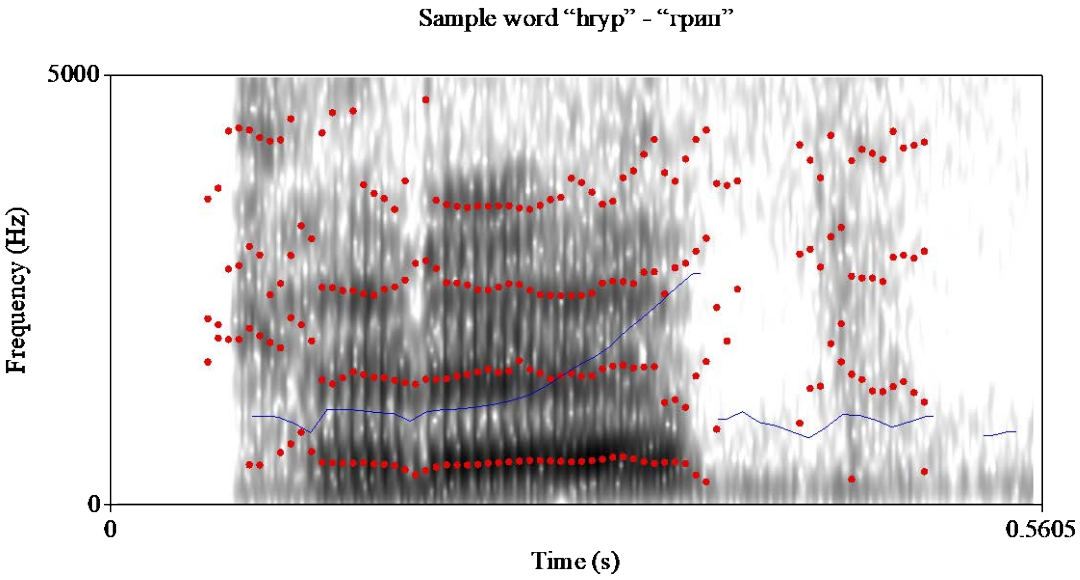
*Table 3.14*

Information about formant frequencies that almost totally comply within the parameters of the Ukrainian standard is provided in Tables 3.13 and 3.14. The vowels were pronounced with startling accuracy by the speaker, who avoided neutralising them to the nearest American vowel, /ɪ/. This can be supported by data from Lindblom's study, which shows that among male speakers of AmE, F1 is at 427 and F2 is at 2034 for the near-close front unrounded vowel.

The spectrograms below display that the sound is consistently pronounced.




*Spectrogram 3.13*




*Spectrogram 3.14*

Unstressed /*u*/ is defined as a front mid raised vowel [1, p. 121] with a lowered (wider) articulation than its stressed analogue [1, p. 381]. On the chart produced by Bilous, it is located closer to the middle [5, p. 22].

Vakulenko thus establishes "near" and "distant" unstressed allophones of the phoneme /*u*/ as a high more lowered central less advanced vowel [ɨ̟⁺] and a midheight central vowel [ɘ+] [104].

Since the unstressed allophone matches the chief allophone, the formant values remain unchanged.

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɨ̟⁺/ | 441.96 | 1662.83 | 350±30 | 1700±400 |
| Sample word | кроси – [ˈkrǫsɨ̟⁺] | | | |

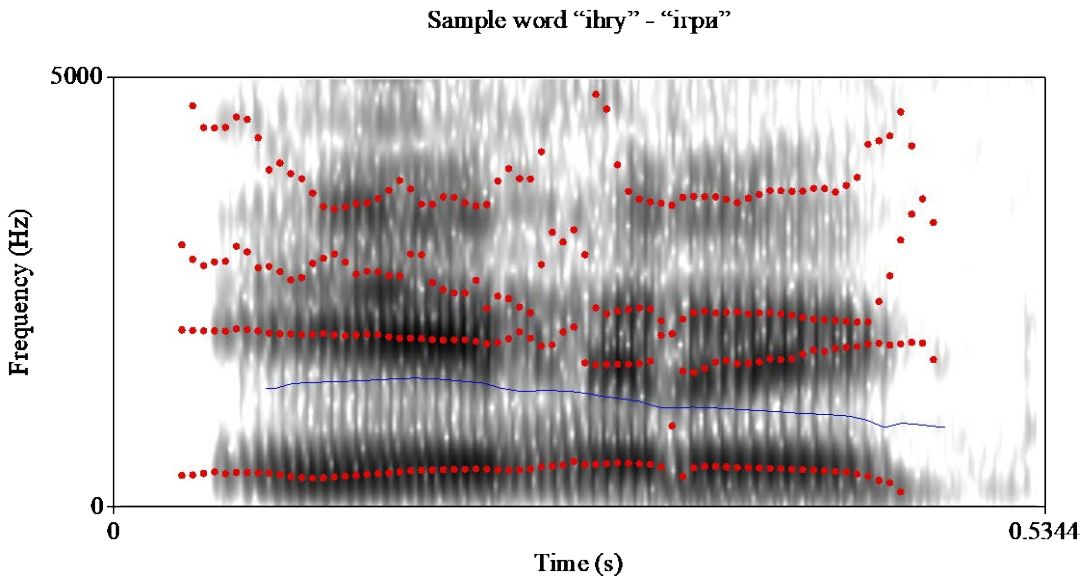
*Table 3.15*

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ɨ̟⁺/ | 434.66 | 1651.16 | 350±30 | 1700±400 |
| Sample word | ігри – [ˈiɦrɨ̟⁺] | | | |

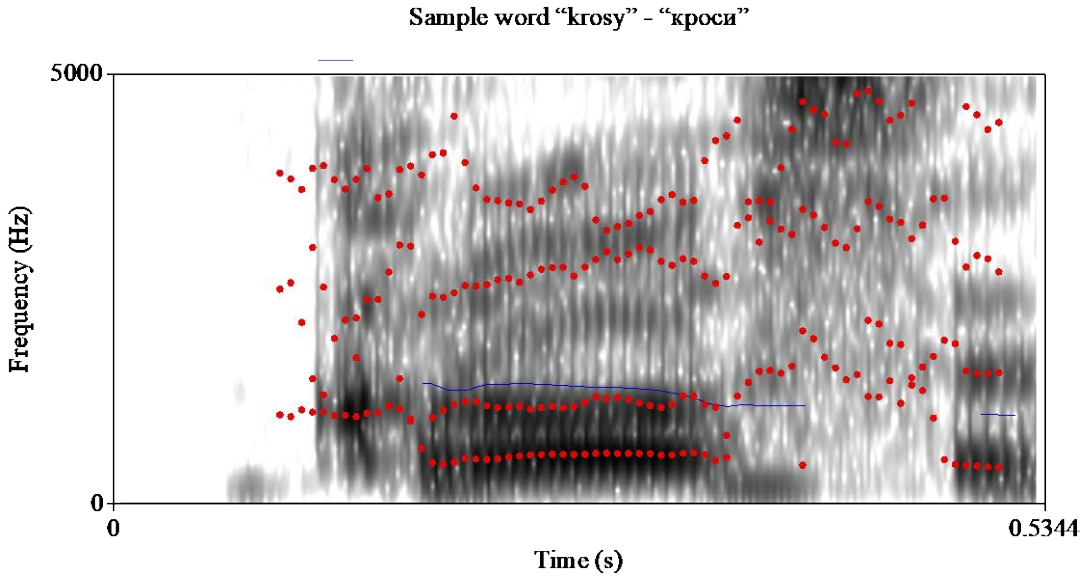
*Table 3.16*

In both instances, as shown in the tables above, the allophone is a high more lowered central less advanced vowel [ɨ̟⁺] because the F1 frequency suggests that it is produced lower than its stressed counterpart, and the F2 frequency shows that it is formed with a higher degree of backness.

By examining Spectrograms 3.15 and 3.16, it is possible to conclude that the vowel production is more typical of the Ukrainian sound because it adheres to the established standards and shares certain similarities with its stressed cognate.




*Spectrogram 3.15*




*Spectrogram 3.16*

### 3.1.3. Back vowels

The following sound is a stressed Ukrainian vowel /o/ that is defined by Bilodid and Totska as a a midback labialized vowel, yet with a higher degree of closedness than the /a/ [1, p. 59]; [13, p. 53-54]. Placing it in the categorization diagram is challenging, yet Totska manages to position this sound closer to /y/ on the acoustically determined diagram and closer to /a/ on the articulation chart [13, p. 59-60].

Without any experimental support, Press and Pugh suggest the sign [ɔ], claiming that it roughly corresponds to the low back vowels (British English [ɒ] or American English [ɑ]), and that its closest articulation is "as in English got, not as in English more." The fact that unstressed [ɔ] before stressed [u] and occasionally even [i] could be reduced to [u] or [ɔw] or, even more advanced, to [o] is acknowledged at the same time [86, p. 22]. In contrast, given that stressed and unstressed vowels in Ukrainian vocalism do not differ much from one another, such an abrupt transition in unstressed vowel articulation from low ([ɒ]/[ɑ]) to high ([u]) is quite dubious [13, p. 101]. As a result, according to Vakulenko, the Ukrainian /o/ should be categorized as a midheight lowered back rounded vowel [o̟] [3, p. 167].

By contrasting acoustic properties of a Ukrainian /o/ with those of the reference central sound [ə], one may roughly determine where the sound falls on the vowel chart. The formant frequencies range between 500 and 600 Hz and 1500 and 1800 Hz, for F1 and F2 respectively [95, p. 285-286]. One could anticipate finding a stressed Ukrainian /o/ a bit higher, perhaps even closer to the centre of the line in the vowel position graph. Regressive assimilation of an unstressed [и] before the syllable with an [e] or [a], which in this case substantially resembles an [e], provides another reason in favour of this position. The vowel [o] is most likely higher than a midlow [e] [7, p. 118].

According to the data presented below, the stressed sounds in the words ‘добре’ and ‘відносини’ have a high degree of resemblance with the former group of sounds leading to the conclusion that the speaker neutralizes the rounded vowels, which is more typical for English, for this feature is absent in Ukrainian. In the latter there is a clear distinction between the midheight lowered back rounded vowel /o̟/ and the midlow central vowel /ɐ/.

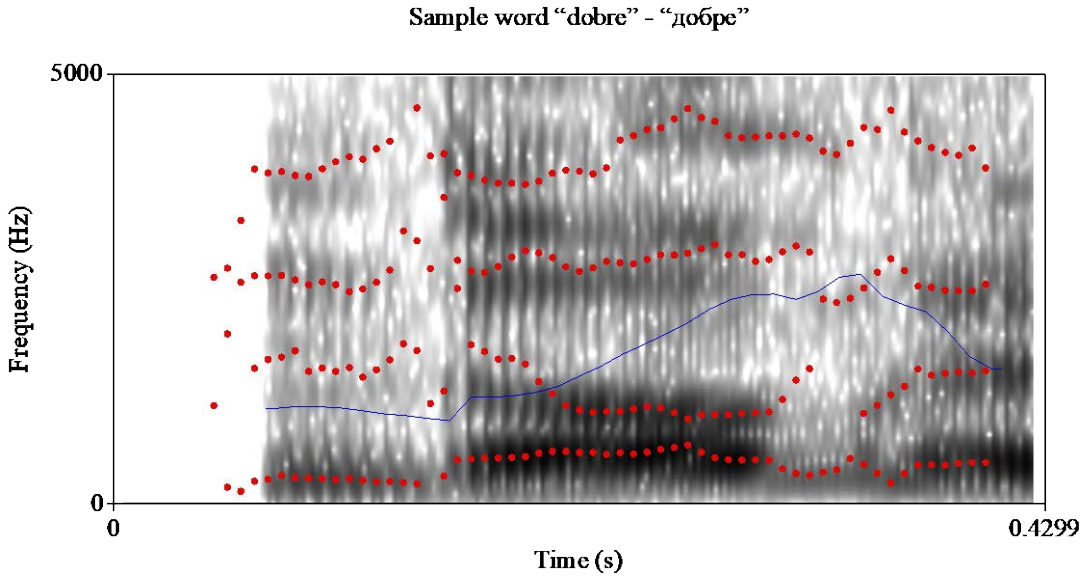
| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /o̤/ | 592.33 | 1238.46 | 550±50 | 1650±150 |
| Sample word | добре – [ˈdo̤brɜ̤⁺] | | | |

Table 3.17

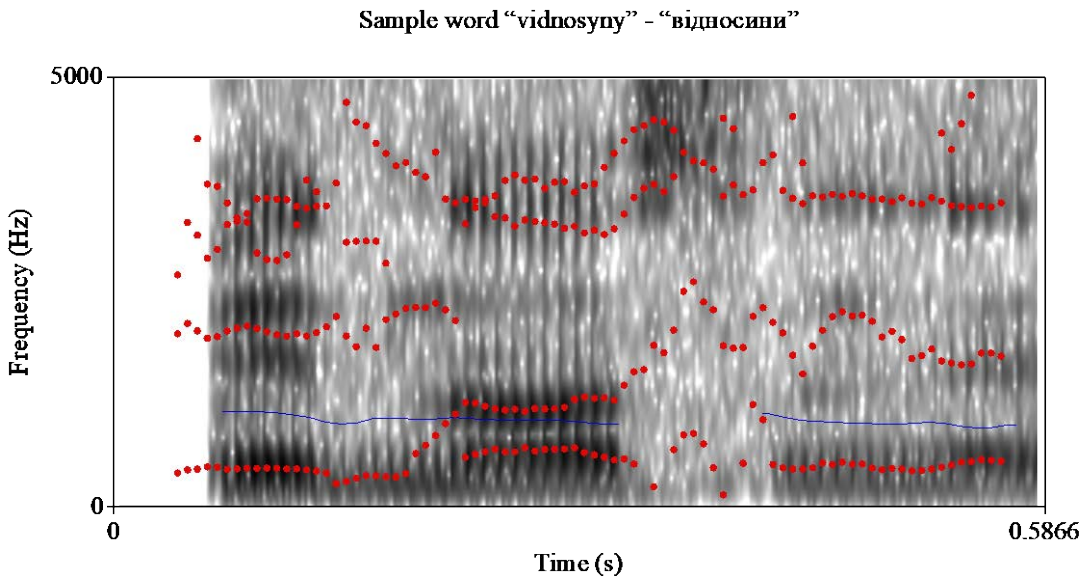
| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /o̤/ | 601.51 | 1240.14 | 550±50 | 1650±150 |
| Sample word | відносини – [vʲi̤̽dˈno̤si̤⁺ni̤⁺] | | | |

Table 3.18

The neutralisation of vowels was not accidental, as shown by spectrograms 3.5 and 3.6, but was uniform and quite pronounced in both cases.




*Spectrogram 3.17*




*Spectrogram 3.18*

There is conflicting evidence on the unstressed allophones of the phoneme "o" in Ukrainian. It is occasionally observed that the unstressed one has a somewhat lower articulation than its stressed counterpart. This downward trend was also observed in Bilous' recent research [5, p. 20-22]. Bilodid and Totska describe a contrarian inclination to its narrower (higher) articulation in compared to stressed /o/ while expressing caution regarding the real dearth of experimental data [1, p. 59]; [13, p. 101; 112]. Furthermore, Press and Pugh indicate that the unstressed Ukrainian [o] is in a more upward position [86, p. 22]. It is said that an unstressed /o/ resembles an unaccented /y/ slightly and that their tongue back positions are more similar than those of their stressed equivalents [1, p. 59]; [13, p. 115].

Meanwhile, Vakulenko argues that an unstressed vowel advances towards the middle (neutral) place on the vowel chart. The only option to go closer to centre is to move downward as long as a stressed /o/ is located above the central line. Therefore, a non-stressed /o/ must shift slightly to the centre, retaining a midheight lowered back but somewhat advanced rounded vowel [o̟⁺], and moving slightly downwards thus becoming a little broader. As a result, Bilous' designation of it as a midlow phone /ɔ/, below the central axis of the vowel

diagram, runs counter to the above findings and looks inconsistent with Vakulenko's theory [104].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /o̤⁺/ | 534.63 | 1508.22 | 600-650 | 1650±150 |
| Sample word | чоловік – [t͡ʃo̤⁺lo̤⁺ˈvʲik] | | | |

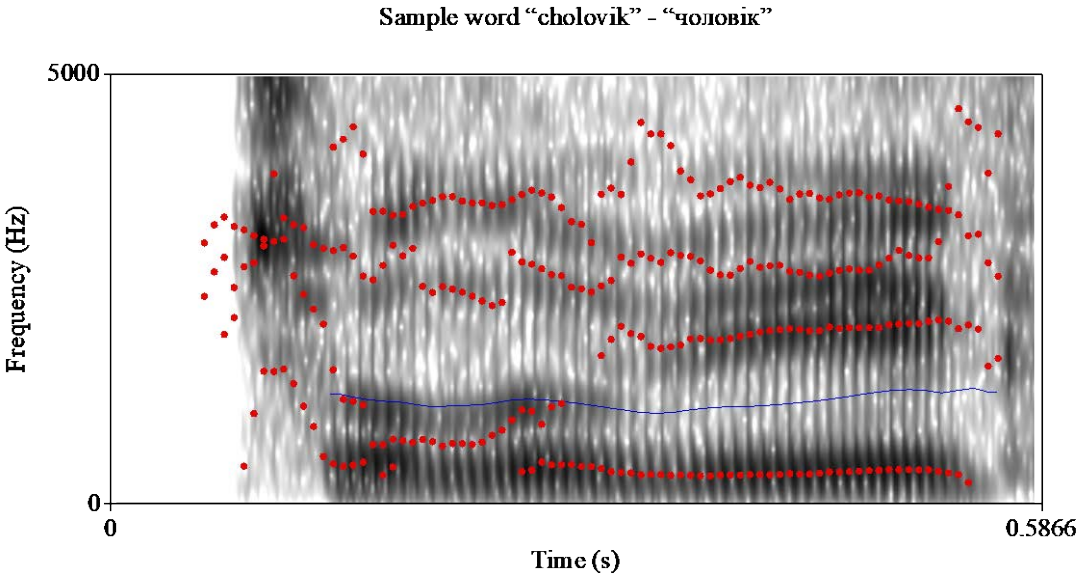
*Table 3.19*

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /o̤⁺/ | 538.39 | 1402.65 | 600-650 | 1650±150 |
| Sample word | місто – [ˈmʲisto̤⁺] | | | |

*Table 3.20*

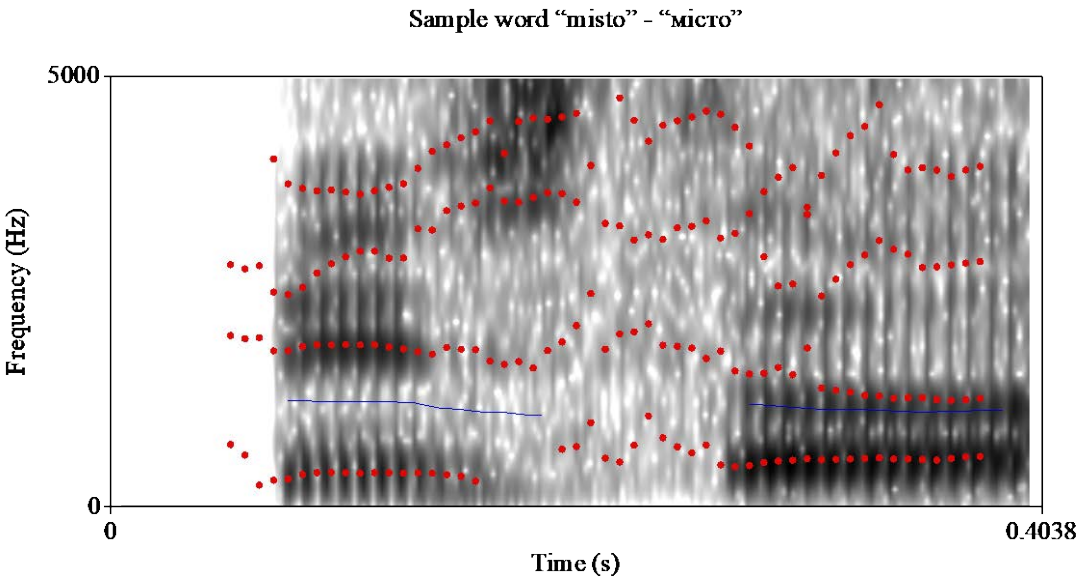
All things considered, the situation illustrated via tables 3.19 and 3.20 shows that the speaker pronounces the vowels in an unstressed position closer to what was previously described by Press and Pugh, for their formant values indicate a somewhat higher position in contrast to the stressed cognate [86, p. 22].

In the word ‘чоловік’, depicted below in the corresponding spectrogram, the formant values match the standard described by Vakulenko with a surprising exactness, even though the vowel is supposed to be unstressed, that is its F1 frequency should be more than 600 Hz [104].




*Spectrogram 3.19*

The spectrogram of 'місто' is slightly divergent, because the degree of the vowel's backness, i.e. F2 value, fails to reach the standard indicated in Table 3.20. From the illustration below, it can be seen that the second red dotted line is slightly higher than that of the previous spectrogram.




*Spectrogram 3.20*

The following sound worth paying attention is an accented Ukrainian vowel /y/, often classified as a high back strongly rounded vowel [13, p. 54]. In this case choosing a phonetic symbol was easier because, according to

Vakulenko, it coincides with /u/, similar to the main vowel in the English word ‘boost’ [104].

Since Vakulenko included no data on the formant values for the vowel, the frequencies were taken from the research conducted by Ishchenko [9].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /u/ | 390.05 | 1289.40 | 350±50 | 600±70 |
| Sample word | дуже – [ˈduʒʒ̩⁺] | | | |

*Table 3.21*

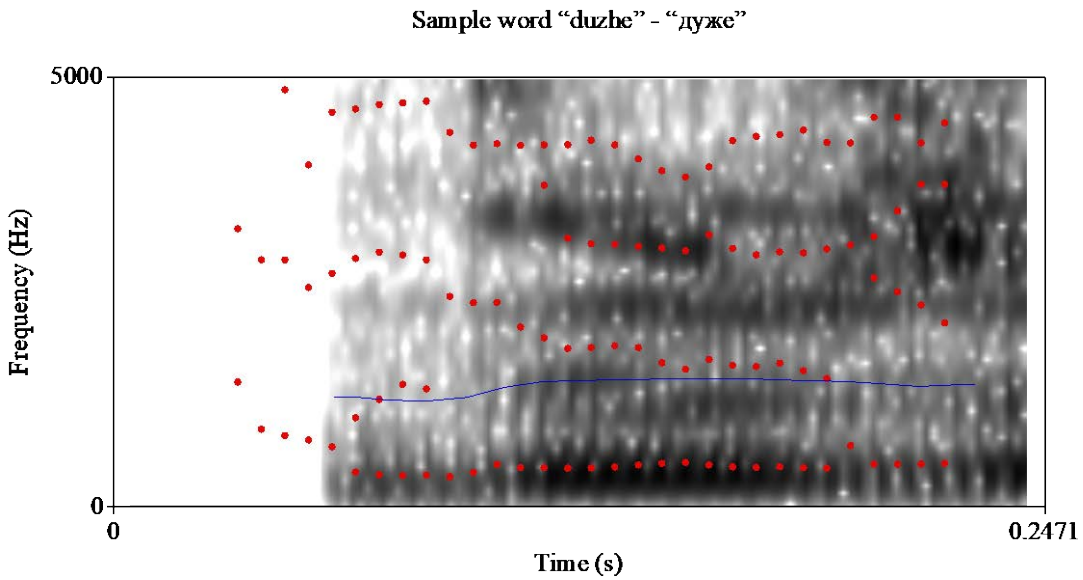
| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /u/ | 410.66 | 1163.85 | 350±50 | 600±70 |
| Sample word | грудні – [ˈɦrudnʲi̯⁻] | | | |

*Table 3.22*

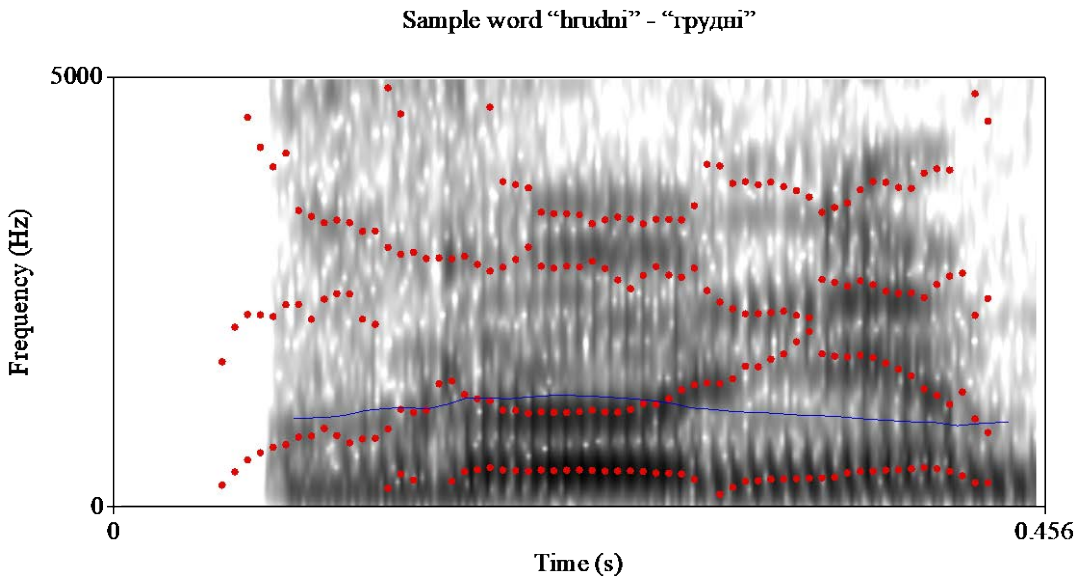
Both vowels /u/ in the words ‘грудні’ and ‘дуже’ are almost identical with small deviations in figures, as shown in Tables 3.21 and 3.22. What they have in common is that the height of the sound produced by the AAVE speaker is exactly the way it should be, according to the data. However, the degree of its backness is different in the way that the norm establidhed by Ishchenko requires the sound to be pronounced further in the vocal tract.

As illustrated in Spectrogram 3.21 and 3.22 Formant 2 frequencies in ‘дуже’ go above the blue line denoting the pitch of the speaker, while in ‘грудні’ they do not reach it, resulting in slight discrepancies within the F2 values.

Overall, the sound produced by the speaker is more characteristic of General American English accent, for the first two formant values of the corresponding vowel /u/ there constitute almost 400 Hz and 1000 Hz respectively [73]. Therefore, as can be observed from the tables, the high back rounded vowel is weaker in the speaker's interpretation than it is in the Ukrainian language, which can also mark almost unrecognizable neutralization of the sound.




*Spectrogram 3.21*




*Spectrogram 3.22*

What has been noted about the pronunciation of a stressed and unstressed /u/ is that it is identical in quality [7, p. 119], although Zilynskyi and Syniavskyi claim that the latter is somewhat broader and lower in articulation [1, p. 116]. The unaccented vowel is thought of as either a lowered high back advanced vowel [5, p. 22] or as a midheight central vowel that has been moved backwards [13, p. 100-101]. According to Vakulenko's auditory comparative study, the sound is a high (lowered) back (shifted to the centre) rounded vowel, similar to the English word ‘oops’ [104].

Considering the fact that the unstressed sound has little to no differences in the pronunciation, the same formant values suggested by Ishchenko are included in the Tables 3.23 and 3.24 [9].

| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ʊ/ | 432.61 | 1387.79 | 350±50 | 600±70 |
| Sample word | хочу – [ˈhọ⁺t͡ʃʊ] | | | |

*Table 3.23*

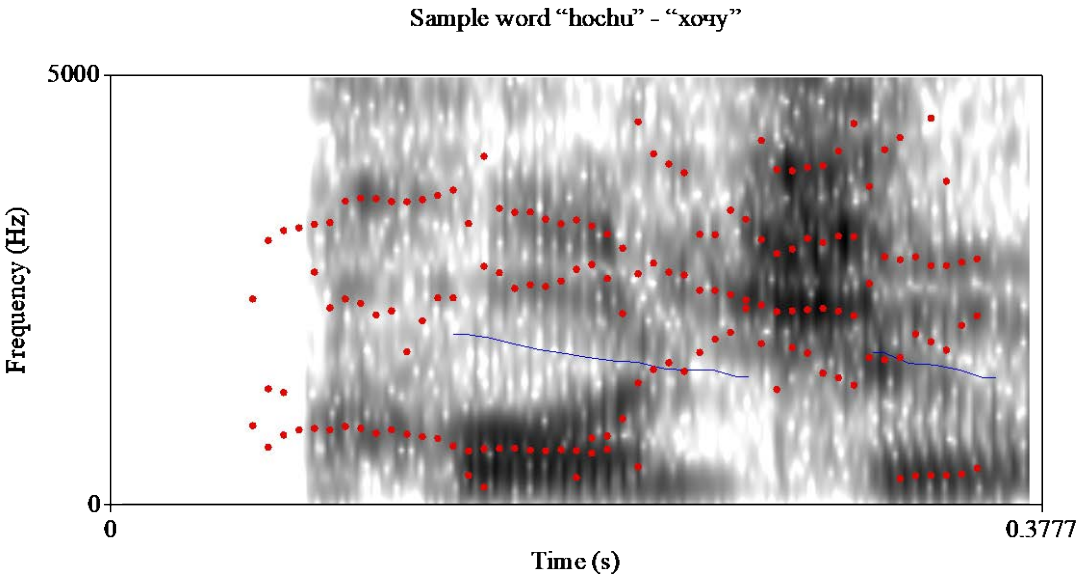
| | AAVE speaker | | Ukrainian standard | |
|---|---|---|---|---|
| | Formant 1 | Formant 2 | Formant 1 | Formant 2 |
| Sound /ʊ/ | 451.18 | 1355.05 | 350±50 | 600±70 |
| Sample word | будувати – [bʊdʊˈvɑ⁺tɨ⁺] | | | |

*Table 3.24*

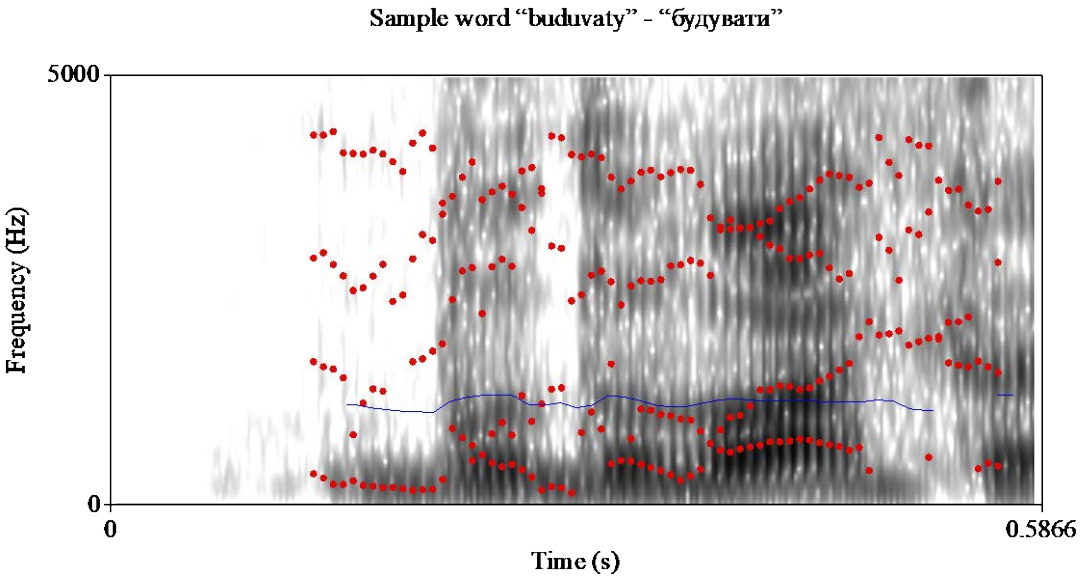
The data presented in the tables above serves as a contrastive argument to Zhovtobriukh and Kulyk’s hypothesis that the stressed and unstressed vowels are

identical in quality [7, p. 119] because the formant values indicate that it is more fronted and lowered.

The illustrations of the spectrum of frequencies show that the formants 1 and 2 almost completely correspond with near-high near-back rounded vowel /ʊ/ in American English. Lindblom defines its formant values as 470 Hz and 1200 Hz [73], yet in the instances below it may be noticed that the vowels produced in two words by the African-American male are more shifted to the center and moderately higher than in AmE.




*Spectrogram 3.23*




*Spectrogram 3.24*

## Conclusion

The chapter is based on the acoustic analysis of six Ukrainian vowels in stressed and unstressed position each. Overall, the total of all tables included here constitutes the number of 24 because for every sound four words were chosen and analyzed. Frequencies of formants 1 and 2 of all Ukrainian vowels produced by the speaker were measured in Hz and written alongside the standard defined by two prominent phoneticians Ishchenko and Vakulenko. Upon comparison of the vowels a lot of peculiar instances were described.

The initial stage of the practical part of the thesis focuses on the reasons to choose vowels for this kind of analysis that include the fact that these sounds have wider variation, possess greater perceptual salience and play a crucial role in the process of stressing words, phrases and even sentences. It was decided that the words were to be taken from context, not pronounced in isolation, as it may impede the process of sound perception.

One of the first challenges during the process of analyzing vowels was connected to the multiplicity of views on transcription of Ukrainian vowels with International Phonetic alphabet symbols. Moreover, paucity of data regarding formant values of the sounds presented the second obstacle, yet the problem was eventually avoided because of the extensive research written by Vakulenko that suggests objective evaluation of vowels in Ukrainian.

When it comes to the results, the first analyzed vowel is the stressed sound /ɑ$^{+}$/ that the speaker pronounced inconsistently in two different words. In the first instance the formant values appeared to be similar to the open-mid back rounded vowel /ɔ/ from American English. In the second context, the produced sound implied resemblance with the more open back unrounded vowel /ɑ/, also not characteristic of the Ukrainian language. The unstressed counterpart was pronounced with better consistency, yet still far from what is considered the norm

in Ukrainian, as a result the vowels in the words ‘мама’ and ‘важка’ are more like the near-open central vowel /ʌ/ in American English.

The following sound /o̟/ in the stressed positions as in words ‘добре’ and ‘відносини’ was neutralized by the speaker and according to the formant measurements appears to be closer to midlow central vowel /ɐ/ in his interpretation. The unstressed cognate of the sound produced by the African American is like Press and Pugh’s description, i.e. in a more upward position.

The next group of sounds, /u/ and /ʊ/, are less challenging for the speaker to pronounce for the reason that the produced stressed vowel has the same height as the Ukrainian standard, while regarding the degree of backness it appears to be more fronted. Interestingly, the unstressed vowel Judah pronounces just like in American English, which is more advanced in the mouth cavity than it should be in Ukrainian.

When it comes to the midlow front vowel /ɛ̝/, the stressed sounds in [ˈdɛ̝ʃɛvo̟⁺] and [kɨ̟⁺ˈʃɛ̝nʲʊ] are pronounced exactly like the standard of speaker’s L2 requires. The unstressed analogues of the sound, namely /ə̟⁺/ and /ɜ̟⁺/, resemble Ukrainian /ɨ̟⁺/ and American /ɛ/ respectively.

Similar trend can be followed in the pronunciation of the near-close near-front unrounded vowel in its accented position – the speaker manages to fit in the parameters of Ukrainian standard. The same success is observed with the unstressed sound /ɨ̟⁺/.

Finally, the sound /i/ in the stressed context underwent the process of neutralization because African American speaker produced it lower and less fronted. Just like its stressed counterpart, /ɨ̟̝/ is pronounced weaker and is closer to American vowel /ɜ/, particularly in the end of the word ‘далі’, as opposed to the pronunciation of the sound within the word ‘пішов’, which almost falls into the norms of Ukrainian.

# CONCLUSION

The theoretical framework of the thesis on the phonetic traces of American English in the Ukrainian language of L2 speakers offers a coherent explanation of the variables and notions that influence phonological interference and second language acquisition in particular. For investigating the complexities of language acquisition and its subsequent repercussions, it is essential to have this insight.

The focal point of this chapter is language contact and interference caused by a negative transfer. In addition to that, another important focus is acquisition, defined as a fundamental process in which humans learn to perceive, understand, and utilize language. Within the topic of acquiring language skills, Myers-Scotting and Green's definitions on the second language acquisition, as well as its integral elements like code-switching, were included. It was particularly stressed that individuals proficient in several languages, multilinguals and bilinguals, have advantages in executive control and mental versatility. Furthermore, it was noted that getting phonetic skills is a convoluted process influenced by personal characteristics, language input, and instruction.

It is crucial to emphasize that some languages may have a certain degree of dominance over others due to a variety of causes, which might result in phonological interference. Such an occurrence is inevitable when languages from different groups, such as English and Ukrainian, are spoken, especially when the former language exhibits the characteristic of vowel neutralization. One of the examples of how one language influences another in terms of sounds is found in Ukish, a linguistic hybrid that Royick investigated in great detail. He found that Canadian English interfered with the sound production in Ukrainian words triggering the process of negative transfer of vowels and consonants from one language to another.

The last part of theoretical basis dealt with various views perspectives on the history and phonology of African American Vernacular English, as it is the

accent of the speaker chosen for the analysis because its contact with Ukrainian has never been studied before.

The research methodology of direct observation was chosen since the study of phonology and phonetics requires precise and exhaustive data gathering and analysis. Judah Kelechi, an African American English speaker who also studied Ukrainian, was studied using this method, enabling the investigation of real language use in context and the documentation of linguistic variety and richness.

Transcribing and analyzing the data are essential aspects of the research technique. The sounds uttered in the speech samples were accurately described using the International Phonetic Alphabet, which also helped to prepare the data for future analysis. To enable more thorough examination, the audio content was correctly structured and separated into smaller segments. Additionally, the Praat program produced spectrograms that graphically displayed the acoustic properties of the recorded speech, facilitating the study and understanding of phonetic features and patterns.

Six Ukrainian vowels pronounced by Judah in accented and unaccented positions were thoroughly examined as an integral component of the analysis found in the thesis' final chapter, and they were contrasted to the Ukrainian standard primarily described by Vakulenko. Only vowels were used in this study because they display greater perceptual salience and a broader range of variation.

Regarding the results of the acoustic analysis, the vowels /ɑ$^{+}$/, /o̟/ and /i/ and their unstressed cognates are neutralized to the positions more comfortable for African American speaker. Therefore, these sounds are substituted with American /ʌ/, Ukrainian /ɐ/ and /i̟$^{-}$/ respectively.

In contrast, the only sounds that match the norms of the Ukrainian vowels are the midlow front vowel /ɛ$^{-}$/ with its unstressed counterparts /ɘ̟$^{+}$/ and /ɜ̟$^{+}$/, and

the near-close near-front unrounded vowel in its accented and unaccented positions.

When it comes to the sounds /u/ and /ʊ/, they were very close to being perfect. Although the formant values of F1 comply with the norms, F2 shows that the vowels pronounced by the speaker are not positioned in the back of the mouth cavity as required in the Ukrainian language.

Overall, the conclusion can be reached that almost all sounds were articulated according to the natural position of sound production present in American English, rather than Ukrainian. It is a similar trend that can be followed in the study of Canadian Ukrainian which is also heavily influenced by the English sounds.

## SUMMARY

The urgent necessity to look into language interaction and contact emerged as a result of the rise in interest in the Ukrainian language and the scarcity of online resources addressing the development of adequate phonetic abilities for foreigners. Such decision-making was additionally driven by the lack of publicly available information about how Ukrainian sounds are pronounced when influenced by other accents.

Such studies are important today because they could provide new insights into language transfer and the influence of English as a world language on various linguistic tendencies. The case study is crucial for comprehending intercultural communication, the phonetic effects of language contact in the context of Ukrainian, and foreign language acquisition.

The theoretical framework for the research was developed based on a careful analysis of the data present in the specialized literature in order to achieve the paper's goals, which are to examine and capture the specific phonetic modifications and influences that occur in the Ukrainian language of L2 speakers as a consequence of exposure to American English. The factors and principles that influence language learning, bilingualism, second language acquisition, phonetics, phonology, accent, and phonological interference are all coherently articulated. Exploring the complexities of language learning and its subsequent repercussions requires a grasp of these concepts.

The transcription and examination of the data came next. The International Phonetic Alphabet was then used to precisely define the sounds made in the voice samples, providing the data for further study.

After gathering the information, six Ukrainian vowels were carefully evaluated and compared to the Ukrainian standard for both the African American speaker's accented and unaccented word pronunciations. Because vowels exhibit

greater perceptual intensity and a wider range of variation, only these sounds were used in this research.

According to the findings of the acoustic analysis, the vowels /ɑ⁺/, /o̟/ and /i/ and their unstressed equivalents have been neutralized to positions that are more natural for speakers of African American descent. Therefore, some American substitutes are used in place of these sounds. However, the midlow front vowel /ɛ⁻/ and its unstressed counterparts /ɘ̟⁺/ and /ɜ̟⁺/, as well as the near-close near-front unrounded vowel in both its accented and unaccented positions, are the only sounds that adhere to the rules of the Ukrainian vowels. The sounds /u/ and /ʊ/ were extremely close to becoming impeccable. Although the formant values of F1 are within acceptable ranges, F2 demonstrates that the vowels being produced by the speaker are not placed in the back of the mouth cavity as is necessary in the Ukrainian language.

Given that no previous work has been done on a comprehensive study of the phonological characteristics of Ukrainian vowels affected by an African American pronunciation, it is reasonable to assume that the paper possesses a high degree of academic uniqueness. In the linguistic context of interaction between American English and Ukrainian, the research can be utilized to better comprehend the notions of language transfer and contact phenomena.

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