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ABSTRACT

This paper highlights the importance of phonology in second language learning, comparing phonetic mistakes made by adult native speakers of English learning Georgian and adult native speakers of Georgian learning English. It emphasizes the importance of a holistic, systemic approach to teaching second languages that involves making the first language part of the whole teaching and learning process. The paper describes a systemic approach to vowel acquisition, examining the phonological and vowel systems of English and Georgian (similarity and absence of sounds) and short vowels versus Georgian monophthongs (similarity and absence of sounds and absence of microsystems: diphthongs and triphthongs). It discusses consonantal systems of Georgian and English. It concludes that second language learners try to pronounce target sounds based on the native language's sound repertoire as well as the sound systems of other languages acquired previously. This storehouse of sounds is the learner's main resource for target sound acquisition and is a logical way to proceed from the familiar to the unfamiliar. Once the selection is made, the sounds make up a special reference sound group (RSG) to which the learner may refer as needed. The degree of similarity or dissimilarity existing between first and second language phonemes affects the nature of the RSG. Helpful tips for teachers for the application of the "Systemic Method" in foreign language teaching is appended. (Contains 24 notes, 19 tables, and 12 references.) (SM)

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ROLE OF PHONOLOGY IN FOREIGN LANGUAGE ACQUISITION

Case Study
Theoretical Generalizations
Classroom Implementation

The aim of the paper is to show the importance of phonology in foreign language acquisition. The paper utilizes a comparative analysis of phonetic mistakes made by native speakers of English learning Georgian and native speakers of Georgian learning English. The paper offers some generalized principles regarding the place of phonology in foreign language teaching and gives practical suggestions for enhancing classroom instruction.

INTRODUCTION

The 21st century, into which our civilization has just made its first steps, promises dazzling technological progress for mankind, accompanied by the redefinition of economic and cultural borders with the phenomenon of globalization. In the process, English has become the language of choice of much of the media. Indeed, with globalization, English has been speedily creeping even towards the remotest places of our planet, not only to win over people's minds[1] but also helping them to discover something new, something different from themselves, and through this discovery becoming richer in knowledge and culture than before. It has not been a one-way process, however. The unprecedented level of importance and use of English as an international language is *bringing English and the English speaking peoples into close contact with minor nations, their cultures and languages*[2], resulting in a two-way process in which the awareness of all groups concerned of each other's language and culture has been intensified.

[1] Cf. "The demand for English-language broadcasts, texts and other materials has created rich markets. Yet the United States seems barely aware of them, and Britain has captured a firm lead in many areas. Warns one book publisher, Chairman Leo Albert of Prentice-Hall International: 'This is a battle for people's minds. And we're lagging far behind the British' " (U.S. News &World Report. Feb. 18, 1985, p. 49).

[2] Especially telling in this respect are the international conferences held by American and British

This give-and-take process has slowly but surely put the spotlight on the significance of minor cultures and languages for the future of our planet and increased concern over their fate, as well as interest in historicity and the preservation of cultural identity and fertility. With the linguistic and cultural contacts fostered because of globalization, minor nations are able to contribute not only to the cultures of individually contacting peoples, but to the linguo-cultural legacy of the world. This will eventually trigger a demand for minority languages and necessitate a larger scope in their instruction.

The mentioned processes of language and cultural acquisition, loss, and change, are not always dramatic. Often, these occur unnoticeably in our daily lives. One place where they make themselves visible and/or tangible is the classroom, which is a crossroads where the mentioned counter currents intersect.

As a teacher of English to Georgian students in my native country, Georgia, I have had the unique opportunity to teach my native language to a foreign audience, a multi-national adult group working at McConnell Dowell Middle East LLC, a company engaged in the construction of the Baku-Tbilisi-Supsa pipe-line in 1998[3]. English was the native language or second language to this group. Teaching both English and Georgian as foreign languages was a unique experience that allowed me to view the FL teaching process as a unity of two complementary facets, the "heads and tails" of the **same coin**. I observed the process of learning the two languages to be like replaceable spring-boards. My students' mistakes helped me identify not only the difficulties in acquiring Georgian and English as foreign language but, like cursors, they outlined the most important problem areas in foreign language acquisition in general. Errors were corrected, analyzed, explained; questions were raised and solutions sought. From these, gradually, the importance of a holistic or **systemic approach** in teaching a foreign language took shape. *It became obvious that when students were exposed not only to single language items but whole micro-systems, understanding, learning and retention as well as conscious production became a lot easier*. Being acquainted with the system of a language made the study of its separate segments effortless. Language acquisition was further enhanced when the material to be introduced was presented on the basis of FL vs L1.

The results were encouraging; teaching based on increased awareness of identical micro-systems of FL and L1 eased the learning process considerably. Experimentation, observation and analysis were followed by generalizations and methodological

organizations, e.g. annual conferences organized by NCOLTCL (National Council of Organizations for Less Commonly Taught Languages. USA) and Foundation for Endangered Languages (UK).

[3] I worked as a Georgian language instructor with McConnell Dowell from April 1 through July 1. 1998.

conclusions offered in the coming pages of the work. However, there is one reservation to be made: the systemic method discussed herein can be applied only with adult learners, those who have developed analytical thinking and are capable of retaining more or less sophisticated information as part of their long memory.

Before entering upon the subject proper it is important to have a fact picture of the differences in the social and linguistic characteristics of the two languages under discussion: English and Georgian.

Socio-Linguistic Background for English and Georgian

Taking a comparative view of English and Georgian, it is impossible to overlook a huge social and linguistic distance separating the two languages today. From the point of view of their social significance, English and Georgian occupy opposite extremes of the socio-linguistic ranking axis - English being an international language and Georgian devoid of such significance (Meskhi 2001, Fig.1, p. 2; *in print*). Some contrasting features stand out as most prominent and thus, worthy of mention:

One. English is the native language of 12 countries while Georgian is the native language of one;

Two. English is an official or semi-official language of other 33 countries while Georgian is an official language only of the country of Georgia;

Three. English is either a required subject or a widely studied one in schools in at least 56 additional countries, while Georgian is a required subject only within the country of Georgia; the demand for it in the international language market is near a zero[4];

Four. English is spoken by over 745 million people as their first or second language while Georgian is spoken only by about 5 million people as their first language. As a second language it is spoken by pockets of Georgian populations in Persia (Feraidan), Turkey (various parts, especially the southern Black Sea coast) and Azerbaijan (Saingilo);

Five. Today English virtually encompasses the whole world while Georgian is politically and economically insignificant.

[4] There are only four American universities where Georgian is taught as an independent study, in summer school or in regular programs (University of Philadelphia, University of Chicago, Indiana University and the Foreign Service Institute).

In linguistic characteristics, English and Georgian are as widely apart:

One. English began as a primitive language (cf. Primitive Germanic, Primitive Teutonic) spoken by Germanic tribes who invaded England in the 5th century AD, while the origins of the three Kartvelian languages goes very deep into prehistory;

Two. English belongs to the Germanic Group of the Indo-European family of languages and is genetically connected with other Indo-European languages. Georgian is a member of the Kartvelian language family forming a distinct group within the Ibero-Caucasian family, through which it is a part of a larger language division embracing the now dead languages of the Middle East and Asia Minor[5];

Three. English has changed drastically over the last 1,000 years, shifting from a synthetic to an analytical type of language. In contrast, Georgian has undergone such inconsiderable alterations since the 5th c. AD (date of the first known manuscript) that even high school students in the country can read and understand almost 70% - 80% of most ancient texts[6];

Four. The first inscriptions executed in the Runic alphabet date back to approximately the 3th -8th centuries AD, while some of the earliest Georgian inscriptions date to the 1st c. AD (Ingorokva, p. 411);

Five. The present alphabet of the English language is the product of several centuries' long (6th c. - 1066) development, while according to Prof. R.Pataridze, the Georgian alphabet was created in 412 BC and introduced into secular use by King Pharnavaz in 284 BC (Pataridze, p. 523).

It is these two sociologically and linguistically vastly dissimilar languages that we are about to compare in terms of the teaching of their respective sound systems. We shall discuss how the teaching of their phonology eases and enhances the process of language acquisition for the student.

[5] Some scholars see linguistic ties with the Indo-European languages as well (F. Bopp, G. Machavariani, G. Klimov, V. Ivanov, T. Gamkrelidze, A. Meskhi).

[6] In this context it is apposite to stress the stability factor characteristic of the Kartvelian phenomenon as such: language (T.Gamkrelidze, p. 125), architecture (T.Chikovani, 1989), ethnology (V.Bardavelidze, 1957), folklore (E.Virsaladze, 1964). On the clan-based social order still living in the mountainous regions of Georgia, see S.Makalatia, 1935, pp. 53; 71; T.Ochiauri, 1967, 5.

SYSTEMIC APPROACH TO VOWEL ACQUISITION

Phonological Systems of English and Georgian

Phonology is a branch of linguistics that studies phonemes or the sounds of a language in abstraction, i.e. sounds differentiated from their concrete realizations in speech. The major characteristic or function of phonemes is their differentiating or sense distinctive function, most obvious with such oppositions as *pit - pet, bag - beg, hot - pot,* etc.

The phonemic systems of English and Georgian differ greatly not only in terms of the actual number of the phonemes (quantitative distinction) but with regard to the internal features of sounds (qualitative distinction). These two features, as it will be demonstrated below, are an important source of the mistake production mechanism for Georgian and English learners. Putting it differently, the quantitative and qualitative distinctions causing pronunciation difficulties are readily given in FL and L1 phonemics. Hidden from the observant eye, their subversive "activities" are manifested in actual speech or the phonetic level.

The heterogeneity of mistakes embraces both vowel and consonant mispronunciation, although as my teaching experience shows, *problem areas for Georgian and English learners tend to be of the opposite nature. For Georgian students it is English vowels that make up the bulk of serious pronunciation mistakes, those that can easily hamper the process of communication. Conversely, for English learners of Georgian the basic stumbling block is the consonants.*

The number of pronunciation mistakes is so great and diverse, that in the overwhelming majority of cases teachers resort to either "on-the-spot" correction or ignore them altogether. Such an approach, unavoidable as it might seem, in the long run fails to serve the ultimate goal of teaching - building up students' sound knowledge of the target language.

It is not difficult to notice that pronunciation mistakes brought about by phonemic causes are often **corrected on the articulatory or the production level without addressing any of the primary causes lying dormant in the systems of the** target and native languages.

In order to throw light on the phonemic causes and not to sound like "a voice in the wilderness" let us compare English and Georgian phonemics with a few aims in mind: (a) how the phonemic systems of the two languages differ, (b) how the discovered

differences affect the acquisition of the target sound systems, and (c) how correction on the phonological level can aid both teachers and learners in attaining their goals.

The vowel systems of English and Georgian will be the first point of our concern.

Vowel Systems of English and Georgian

It is common knowledge that the dominant principle in introducing the English vowel system almost entirely ignores the vowel system of L1. The reason is subconscious reference to similar (not identical) native sounds, which are supposed to help learners acquire target phonemics. At first glance, the mentioned method of instruction seems correct; however, in the majority of cases, learners' native sound systems are very different, and instead of aiding the process of acquisition they not infrequently hinder it. This is precisely what happens in the case of Georgian learners of English.

Even a quick comparison of the two vowel systems (English and Georgian) reveals serious differences setting these languages apart. The Georgian language possesses five vowel phonemes: ა/**a,** ე/**e,** ი/**i,** ო/**o,** უ/**u** corresponding to five letters respectively: ა/**a,** ე/**e,** ი/**i,** ო/**o,** უ/**u** (please note that English and Georgian sounds do not exactly correspond). In other words, the number of sounds and letters in Georgian coincide: *perfect quantitative letter-sound correspondence is complemented by a perfect qualitative relationship*: *one letter - one sound.* Schematically, the vowel system of the Georgian language can be presented as a diagram in **Fig. 1**:

Vowel System of the Georgian Language

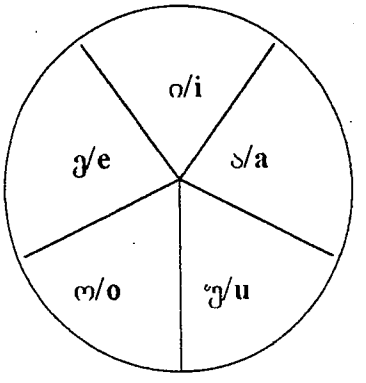


Fig. 1

In contrast, the English vowel system is considerably more complex. Unlike that of Georgian, the vowel system of standard or literary English consists of 25 (12+8+5) phonemes[7]. The edifice of this vowel system rests on the foundation of five vowel letters: **a, e, i, o, u**[8]. The 25 vowels are further subdivided into three subsections: monophthongs (12), diphthongs (8) and triphthongs (5)[9] (p. 7, **Fig. 2;** allophones are excluded):

The Vowel System of the English Language

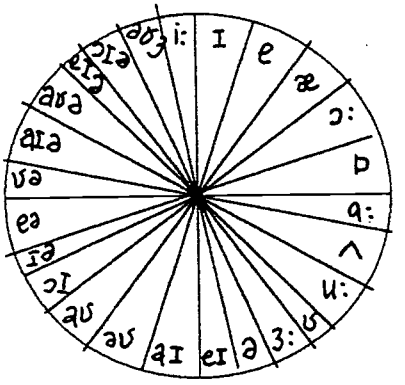
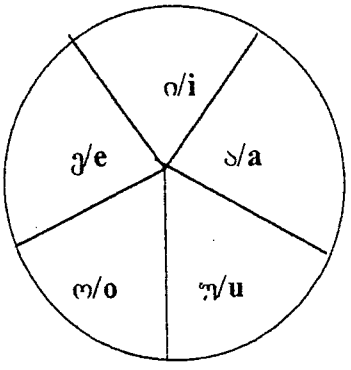
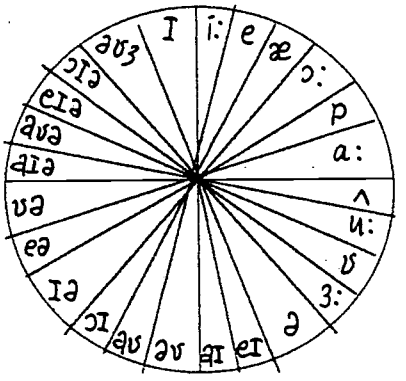


Fig. 2

Juxtaposing the vowel system diagrams of English and Georgian produces a very impressive picture (**Fig. 3**):

Phonological Systems of English and Georgian Compared





[7] Y is excluded from the analysis for two reasons: a) it is a semi-vowel, and b) as a vowel it has the same phonetic value as i. It will be dealt with consonats (see p. 25).

[8] Cf. "Many people think of English as having only five vowels, but this is a reflection of the orthography rather than the spoken language" (Finegan, p. 39).

[9] There has been some controversy regarding the phonemic status of the latter but this being a rather theoretical issue has no implications for teaching purposes. Triphthongs, having their own characteristic features should be introduced and taught like any other vowel sound.

Fig. 3

The diagrams vividly illustrate that the numerical similarity of graphic expression (five vowel letters in both languages) can easily produce a **false expectation of phonemic similarity** for Georgian students of English. What happens in fact is that five English and five Georgian vowel letters have to furnish the pronunciation of twenty-five English sounds. The numerical difference of vowel phonemes on the inter-lingual level (English - Georgian) is further complicated by additional orthographic obstacles existing within the English system i.e. the intra-lingual level. The point at issue is the above-mentioned alphabetic or one-to-one letter-sound correlation in Georgian and the historical principle of the English alphabet ***retaining old orthography of words and combining it with their modern pronunciation***. Hence, a multiple letter-sound correspondence found predominantly in vowels.

The mentioned factor further complicates the process of vowel mastery, leading learners astray not only with regard to pronunciation but orthography as well. Students have to constantly bear in mind the English *letter-sound and/or letter-combination-sound relationship,* which is so alien to their mother tongue.

From this we can draw the importance of **sensitizing students to the numerical distinction between English and Georgian vowel sounds from the very start. Students need to be told that the identical number of letters in the target and L1 languages accommodates diverse phonemic systems: five sounds in Georgian and 25 sounds in English**. This will raise learners' awareness and expectancy of forthcoming difficulties - warning them, as it were, against possible future mistakes.

The differences between the English and Georgian phonological systems is a primary source of mistake production. The analysis of mistakes brought to light two major causes of mispronunciation (Meskhi 1997; 2002): (a) **similarity** (not identity) of the target and the native sounds, and (b) **absence** of the target sound in the learner's mother tongue. Hence, the need to introduce a very general comparative picture of the two phonemic systems outlining the most significant **similarities** and **differences** (**TABLE I a** and **b**):

TABLE I a

Similarities between English and Georgian Vowels

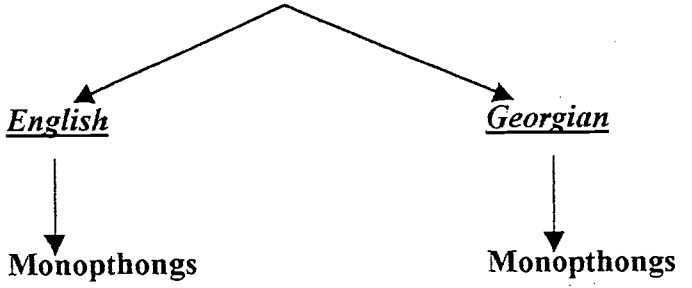
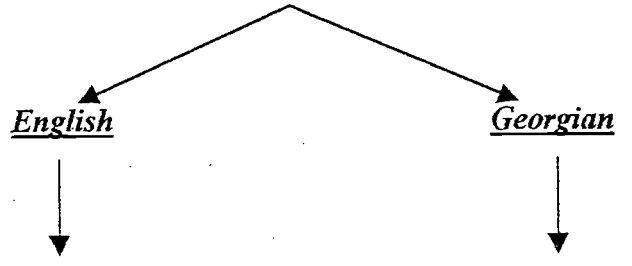


TABLE I b

Differencies between English and Georgian Vowels



Diphthongs	**vs**	**X**
Tripthngs	**vs**	**X**

Out of the two causes, sound similarity has always been subconsciously considered to be a friendly tool in target sound acquisition. It is therefore logical to address the monophthong issue first.

Similarity of Sounds

English has 12 monophthongs: **I, iː, ʌ, aː, u, uː, o, ɔː, e, æ, ɜ, ɜː** arranged into smaller groups according to three major principles: (a) place of articulation, (b) lip position, and (c) different degrees of vowel tenseness (**TABLE II a, b, c**):

TABLE II a

Place of Articulation

Front - Central - Back

I / iː - e / æ---------- ɜ / ɜː - ʌ / aː o / oː - u / uː

TABLE II b

Lip Position

Rounded - Unrounded

u - u: ------- I - i:

TABLE II c

Degrees of Tenseness

Tense (long) - Lax (short)

I - i: ʌ - a: u - u: o - ɔ: ɜ - ɜ:

Contrary to English, the Georgian monophthong system distinguishes only between five qualitatively different vowels structured as given in (**TABLE III**):

TABLE III

Front - Back

ი/i - ე/e ------- ა/a - ო/o - უ/u

Open - Close

ა/a - ე/e - ო/o ------ ი/i - უ/u

Rounded - Unrounded

ო/o - უ/u ------ ა/a - ე/e - ი/i

The comparison of the two monophthong systems allows us to group Georgian and English phonemes into two subgroups on the basis of common classificatory features (**place of articulation, lip position**) on which **similarity of their vowel sounding** rests. However, it should be borne in mind that due to similar sound perception the *caret* - ʌ and long **a:** sounds are perceived by Georgians as back and not central vowels[10]. Accordingly, the chart of similarly sounding vowels will be modified as in **TABLE IV**:

[10] It should be recalled that the central long **a:** is pronounced with the tongue raised between centre and back (CEEL, p. 240). This intermediary tongue position causes similarity in sound perception with Georgian back vowels.

TABLE IV

Similarly Sounding Vowels

	English	Georgian
Front	I -/i: - e / æ	ი/i - ე/e
Back	o / ɔ: - u / u: - ʌ / a:	ო/o - უ/u - ა/a
Central	ɜ - ɜ:	ი
Rounded	u - u:	უ/u
Unrounded	I - i:	ი/i

It is not difficult to notice that English and Georgian monophthongs differ in the **presence or absence of tenseness (tense vs lax).** Being a significant characteristic of English monophthongs, varied vowel length has no relevance for Georgian (at this point the qualitative differences between Georgian and English long vowels is neglected for reasons of simplicity). The distinction becomes even more prominent if we construct *combined oppositional pairs* of Georgian (G) and English (E) monophthongs **(TABLE V)**:

TABLE V

Oppositional Pairs of English and Georgian Monophthongs

E		G
i:	vs	**ი/i**
a:	vs	**ა/a,**
ɔ:	vs	**ო/o**
u:	vs	**უ/u**

This *phonemic* feature (tenseness) is responsible for an abundance of mistakes made by Georgian students in actual speech (*phonetic* level). English long vowels are repeatedly replaced by Georgian monophthongs, which are considerably shorter: e.g. */lʌp/ - lup, /hu:k/ - huk, /blid/ -blid, /dɔ:r/ - dor,* etc. Similar mispronunciations viewed as correct by Georgian learners for reasons of similar sound perception[11], distort the outer form of words and hamper the process of communication. Other phonetic mistakes,

[11] The term *similar* used in relation to some vowels indicates sounds identified by the criterion of *similar sound perception* (Hocket. 1955. 144). In terms of articulation, these sounds possess *similar articulatory or phonetic features* such as place of articulation, position of the lips and the tongue. etc.

however, tend to be even more serious. These are the instances when substitution of English tense vowels by native monophthongs results in *semantic change*, and thus causes communication failure. E.g. */hi:l/ - hil, /pi:l/ - pil, /ca:t/ - cat* (sounds like *cut*), */pu:l/ - pul* (sounds like *pull*), etc.

The ongoing discussion makes it obvious that Georgian learners of English use their native shorter monophthongs as the bases or criteria for pronouncing target sounds. Tenseness, being irrelevant in Georgian, is discarded in English speech as well, resulting in the distortion of both the form and meaning of words.

In contrast, vowel length in Georgian is devoid of phonological relevance and carries a *stylistic function*; e.g. pronouncing the word *deda* (*mother*) either as *dedaa or deeda* would only indicate various aspects of emotional coloring leaving the lexical meaning of the word intact.

The given examples vividly illustrate *how obscure phonemic causes bring about significant phonetic faults*. Hence, the necessity of *exposing students to this vital distinction between English and Georgian monophthongs from the beginning*. Students of English need to be told that *vowel length in English is phonologically relevant, i.e. it has a sense distinctive function and that therefore, substituting short monophthongs for long monophthongs will inevitably result either in misunderstanding or a change of message, and thus failure in communication. However, vowel length in Georgian only has a stylistic load, i.e.* ***vowel lengthening in Georgian does not result in any semantic change.***

It is clear, therefore, that the effective teaching of English monophthongs to Georgian learners should start with the elimination of the biggest systemic or phonological barrier - ***vowel length****. Georgian students* ***should be exposed to this major difference at the very start and should be shown its phonological relevance in English and its phonological irrelevance or stylistic significance in Georgian****. Learners should be supplied with many examples on the comparative basis and should be encouraged and led into active participation and discussion.* On the other hand, *English speakers of Georgian should be advised to restrain from lengthening Georgian vowels in actual speech and resort to this only in cases of stylistically colored speech.*

Such an exposure to the vowel systems of the native and target languages ensures a stable *distinction between the identically perceptible long and short English and Georgian vowels*. English learners of Georgian do not have to worry about the length of monophthongs and the miscommunication which may result, as similarly sounding tense vowels are still correctly identified by Georgian native speakers. This averts both misunderstanding and communication failure.

The preceding discussion of English tense vowels vs Georgian monophthongs allows us to formulate a generalization relevant for teaching purposes: the production of the correct vowel sounds of the target language is more crucial for effective communication for Georgian learners of English, whereas it is less so for English students of Georgian.

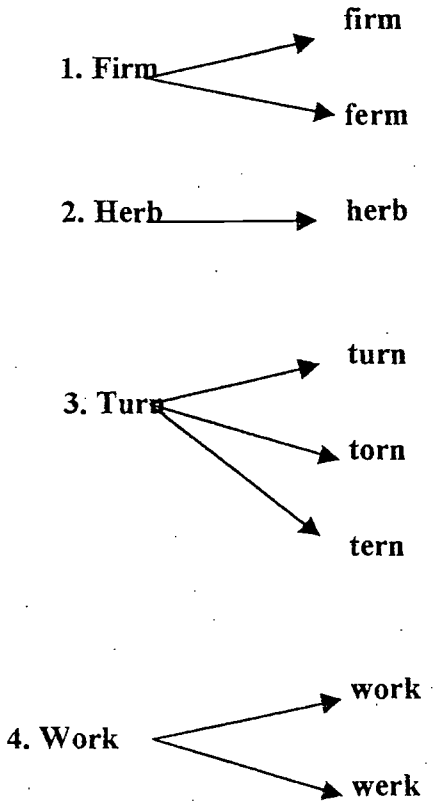
Absence of Sounds

The preceding discussion focused on phonemically-conditioned pronunciation errors caused by similarity of sounds in English and Georgian. But as stated above (p. 8) pronunciation mistakes may also be caused by absence of target sounds in L1. The English central long vowel /ɜ:/ is the case in point. Georgian phonemics lacks central vowels and naturally, cannot provide learners with an "adequate" supportive or reference sound as in the instances analyzed above. Despite this fact, learners insistently try to find the "best match" for the target sound in the native vowel repertoire as L1 is the only readily and easily available resource reference. Not infrequently, the search results in *the selection of more than one native phoneme*. The analysis of an innumerable number of mistakes made by Georgian students reveals the use of four different Georgian vowels in order to render the central long vowel /ɜ:/ in English (Meskhi 1997). They are: ი/**i**, ე/**e**, ო/**o**, უ/**u**. The study demonstrated that the selection of this variety of vowels is *conditioned not so much by their **pronunciation** but by **spelling***. The phonetic alphabet of the Georgian language is the main "culprit". Ideal one-to-one letter-sound correspondence in Georgian creates *orthography-bound* disposition in the learner of English and therefore his/her first attempt to pronounce the target vowel relies on spelling. This linguistically-conditioned psychological attitude makes Georgian learners constantly violate English as they are "flooded" with words possessing "inconsistent" letter-sound correlation.

This statement which is true of the whole sound system, is especially justified for vowels found in the combination with the sonorant **r** as in *bird, sir, fur, fir, word, curb, stir* and the like. In instances like these - clusters **i+r**, **e+r**, **u+r**, **o+r** - four different vowels produce one and the same central long vowel /ɜ:/. Being bound to spelling, in an overwhelming majority of cases, Georgian learners' first choice for the target vowel /ɜ:/ is *prompted by the spelt letter*. The result is a cascade of mistakes produced by native monophthongs selected as the most suitable ones in every concrete case. **TABLE VI** demonstrates the said above:

TABLE VI

Georgian Reference Sounds for the English Central Long Vowel /ɜ:/



1 of **TABLE VI** indicates that the first version of mispronunciation includes the native vowel ი/**i** prompted by English orthography. After the teacher's attempt to correct the mistake, the vowel is immediately "replaced" by ე/**e**, the sound selected now on the basis of similar sounding. The guess is correct. The student realizes a more retracted articulatory position for the target vowel and tries to change the place of articulation (of **i**) respectively. However, the ultimate aim is not attained because the second choice is the learner's native ე/**e**, which is front and not central.

In # 2 of **TABLE VI** the central long /ɜ:/ is "invariably" replaced by L1 ე/**e** by Georgian students. The point at issue is interesting because orthographic presentation is strengthened by a slightly similar sounding of the front Georgian ე/**e** as well. In fact, these two factors create such strong pronunciation grounds that students' mistakes continue to occur irrespective of numerous corrections.

The vowel **u** in combination with **r** (#3 of **TABLE VI**) has a variety of supporting sounds in the native Georgian vowel system. We find three different vowels უ/**u**, ე/**e** and

ო/o revealing students' desire to match native and target sounds. At the same time, the selected monophthongs disclose the phonetic "distance" within which the search for the most appropriate reference sound is conducted: from front ე/e (based on sound perception) to the most back უ/u (orthographic prompt) via another back vowel ა/a.

Another interesting case is the vowel ო/o combined with r (# 4 of **TABLE VI**). We find two reference vowels ო/o and ე/e in the mistakes of Georgian students. Here again, the use of ო/o instead of /ɜ:/ is prompted by the spelling of the word *work*, while in the second case the choice of the qualitatively different ე/e to render English /ɜ:/ is conditioned by the same factors as discussed above. Interestingly enough, Georgian learners (i.e. those who speak Russian) often select a more central Russian vowel ë as their reference sound for English /ɜ:/.

Hence, we can conclude that the absence of the English central tense vowel /ɜ:/ in Georgian makes learners look for its correct pronunciation *not within English phonemics when trying to find out the exact pronunciation features of the sound, but within the framework of the native vowel system*.

The mental processes involved in all the four cases of mispronunciation are identical: (a) selecting a reference sound based on the orthographic prompt, and (b) trying to find another match guided by the auditory criterion (similar sound perception).

The foregoing analysis of phonetic mistakes produced by Georgian learners while acquiring English tense monophthongs reinforces the advanced idea advanced herein that *students resort to selecting certain native sounds as most suitable referents* for target monophthong acquisition.

The study of mispronunciations caused by the absence of the target monophthong in L1 has a number of implications for teaching purposes. Teachers should be ready to expect:

- more than one reference sound;
- the selection of reference sounds being based either on the orthographic or auditory principle;
- selected reference sounds, though entirely speech-conditioned, belonging to the phonological level of L1 and made use of in every concrete case.

The central vowel which is present in English and which creates so many obstacles for Georgian learners poses no difficulties to English students of Georgian. In fact, English speakers have no need for the vowel at all in the acquisition of Georgian, and should exclude it from their reference sound group (hereinafter referred to as RSG) completely. In other words, one of the greatest pronunciation obstacles for Georgian

learners has no role to play for native speakers of English in their attempt to master Georgian monophthongs.

The analysis we have presented enables us to identify possible reference sounds for both languages: (a) reference sounds for English long monophthongs, and (b) reference sounds for Georgian phonemes (**TABLE VII a, b, c**):

TABLE VII a

Georgian Reference Phonemes for English Tense Vowels

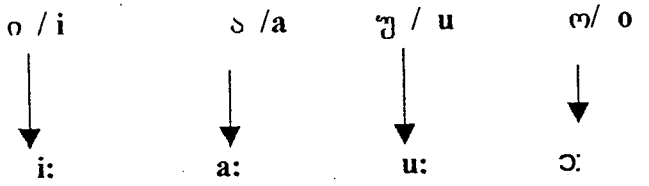


TABLE VII b

Georgian Reference Phonemes for English Central ɜ:

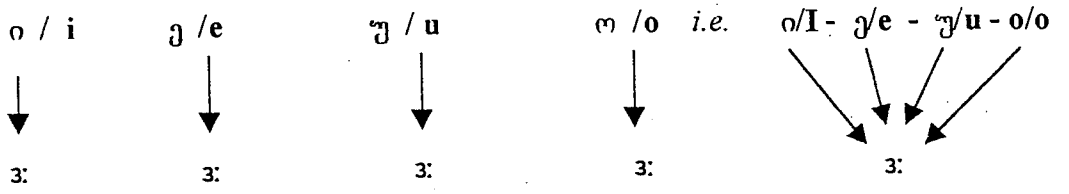


TABLE VII c

English Reference Phonemes for Georgian Monophthongs[12]

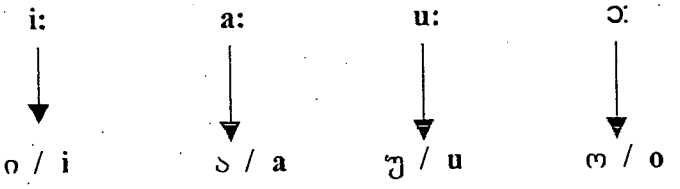


TABLE VII arouses much interest as it uncovers a very peculiar feature of the Georgian RSG for tense English monophthongs and English RSG for Georgian vowels. The first RSG contains two types of reference sounds: (a) those existing "ready made" at the phonemic level (**უ/u, ე/e, ი/i, ო/o, ა/a**), and (b) those produced on the phonetic level (**უ/u, ე/e, ი/i, ო/o**), the latter indicating that not all sounds of the native language can

[12] For reasons of simplicity allophones are excluded.

actually become RSG constituents. *A priori* it can be argued that in case of any FL-L1 pair the RSGs will be characterized by one or all the features presented below:

Number of reference sounds.

(a) the native RSG may utilize all the phonemes of L1, or

(b) the native RSG may utilize only a certain number of its phonemes.

Causes of choosing reference sounds.

The choice of reference sounds may be conditioned by two factors:

(a) similarity or identity of sounds, and/or

(b) absence of target sounds in L1.

In the first case (a) reference sounds will be chosen from the phonemic system of the learners' language while in the second event (b), they will be selected from the production or the phonetic level.

It follows that *for efficient foreign language instruction the teacher has to identify the native RSG for the target language in terms of both the number of reference sounds and the causes for their selection. The task is not easy and can be done only through a sound linguistic knowledge and scrupulous analysis of a large number of students' errors. However, the determination of the RSG for the target language will aid the teacher in raising students' awareness of and vigilance against possible future mistakes and enhance the quality of his/her classroom performance.*

Short Vowels vs Georgian Monophthongs

Similarity of Sounds

Short vowels pose fewer difficulties to Georgian learners because their native phonemic system comes closer to this group of sounds. All the five Georgian monophthongs (ი/**i**, ა/**a**, ო/**o**, უ/**u**, ე/**e**; **TABLE VII**) are readily selected as references for the corresponding English short vowels (**I**, **ʌ**, **o**, **u**, **e**, **æ**; **TABLE VII**). However, **due to lack of vowel length in Georgian, Georgian vowels tend to be longer than** English short monophthongs. Hence, mistakes like *bid* for /*bɪd*/ with a longer ი/**i**, *cat* for /*cʌt*/ with longer ა/**a**, *buk* for /*buk*/ with a longer უ/**u**, etc.

Particular mention should be made of Georgian ე/**e** replacing two English vowels: narrow and broad **e** / **æ**. The former is much closer to the native Georgian ე/**e**, which is invariably used to substitute the broad æ version as well. Examples are numerous: *bed* for /*bæd*/, *beg* for /*bæg*/, *led* for /*læd*/, etc. It is clear that mispronunciations like these distort

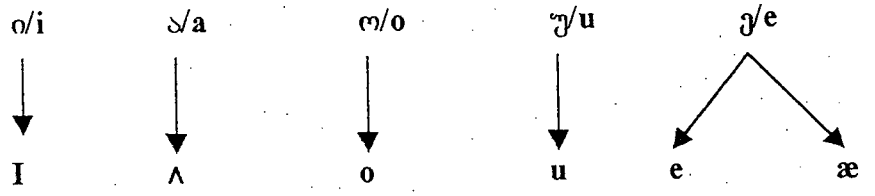
not only the sound form of words, but actually change their meaning and therefore, greatly hamper the process of communication. Communication failure is caused by the phonemic status of English vowels consisting in their sense distinctive function. Contrary to English, Georgian ე/e being a single vowel replacing two English phonemes (e and æ) erases the sense distinctive function characteristic of e and æ; hence, confusion between *beg* and *bag*, *set* and *sat*, etc. when pronounced with the same Georgian sound ე/e.

The mentioned acoustic similarity between the Georgian ე/e and the English e - æ is so strong that Georgian students find it very hard to correctly pronounce them even when they are fully aware of the distinction between the two. This is also conditioned, I believe, by certain physiological characteristics of the broad æ. The latter requires more muscular tension and energy for its pronunciation than Georgian ე/e. This physiological feature of broad æ (tension, more muscular energy) is typical for the whole English vowel system which is tenser and requires more effort than Georgian vowels.

Hence, all the Georgian vowels, as in the case with tense monophthongs, are selected as references for target English short monophthongs, with the exception of the Georgian ე/e supporting two English phonemes: e - æ (**TABLE VIII**):

TABLE VIII

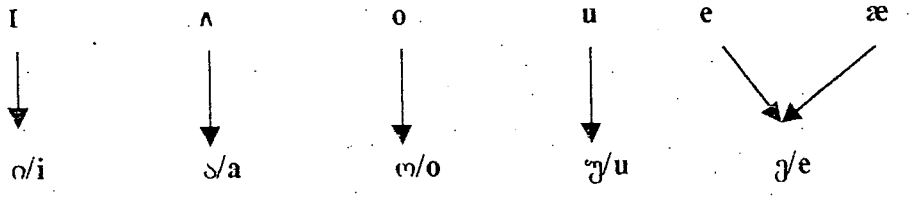
Georgian RSG for English Short Monophthongs



It goes without saying that the English RSG for Georgian monophthongs will be its opposite.

TABLE IX

English RSG for Georgian Monophthongs



Absence of Sounds

Special mention should be made of the schwa /ɜ/ sound whose large share in "mistake production" is primarily due to its high frequency of occurrence in structural words like prepositions, conjunctions, articles, modal verbs, auxiliaries, and in unstressed syllables in general. The absence of the sound in a learner's native tongue makes the learner seek a suitable approximation, a sound in the repertoire of L1 that will help the learner pronounce the target vowel correctly. It was mentioned in previous pages (p. 12-14) that the absence of target sounds can result in the selection of more than one reference. The central schwa is another case to illustrate this. Among the reference sounds for schwa we find three vowels: **ე/e,** **ა/a** and **ი/i**.

The Georgian **ე/e** is the most frequently chosen vowel to replace English schwa and is based on similar sound perception caused by the closest place of articulation with the English /ɜ/. E.g. *them* is pronounced as /d/zem/[13], *interesting* /interesting/, *villa* as *vila*, *father* as *fad/za*, etc.

The Georgian **ა/a** is found replacing schwa basically in the word final position: e.g. *father*, *theatre*, *customer*, *lawyer*, etc. pronounced with the final **ა/a** and not /ɜ/. The mispronunciation is the result of two factors: (a) because of the absence of central English short vowel ɜ in Georgian it is replaced either by **ე/e** or **ა/a** (similar sound perception), and b) the final position of Georgian **ა/a**, like the English neutral sound, seems to give a finalizing touch to the pronunciation of the word. Additionally, there are many words in Georgian ending in the final **ა/a,** further enhancing the use of **ა/a** instead of the central short sound.

The third reference sound for schwa is **ი/i**. The substitution basically occurs in the pronunciation of the definite article ***the***, where schwa is constantly replaced either by **ი/i** or **ა/a**. If the occurrence of **ა/a** is an expected version (see the previous case), the choice **ი/i** cannot be accounted for, either orthographically or acoustically. A long term observation and analysis of students' errors revealed that the use of **ი/i** is caused by the preceding voiced inter-dental fricative **ð,** which, like schwa, does not exist in the Georgian sound system and is among one of the hardest consonants to master. Therefore, the definite article consists of two sounds not found in the learners' native tongue. Georgian learners have to go to the articulation of a central vowel right after the pronunciation of an inter-dental consonant which itself poses articulation difficulties for learners. The pressure of rapid speech coupled with the above-mentioned difficulties

[13] On the pronunciation of interdental voiced and voiceless **th** see the section on consonants, p. 30.

results in the pronunciation of the first vowel, which is the front ი/**i**. Georgian learners find the pronunciation of the complex /**ði**/ much easier with ი/**i** than /**ðɜ**/, for which the tongue has to travel further. When corrected, students replace ი/**i** with ა/**a** on the analogy of the previous case.

As for native English speakers of Georgian, learners should be warned to avoid using the central short monophthong in Georgian and exclude it from their RSG. Following the discussion, we can build up the Georgian and English RSG-s for lax monopthongs including schwa (**TABLES X** and **XI a, b;** p. 19):

TABLE X

Georgian *Reference Sound Group* for English Schwa

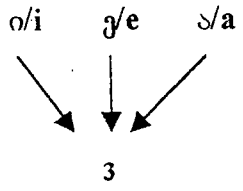


TABLE XI a

Georgian *Reference Sound Groups* for English Monophthongs

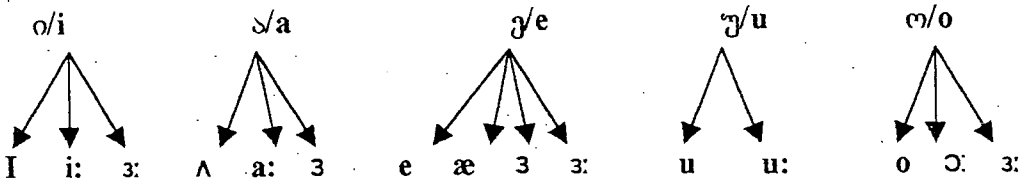
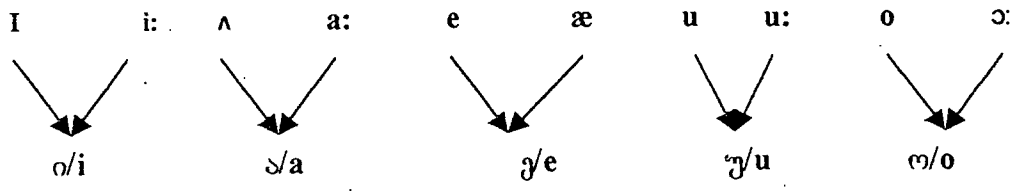


TABLE XI b

English *Reference Sound Groups* for Georgian Monophthongs[14]

[14] For reasons of simplicity allophones are excluded.



Although the basic problems connected with English and Georgian monophthong systems have been addressed, there are other issues that need to be dealt with as they further aggravate the obstacles facing Georgian students. The point at issue is the allophones characterizing both English vowels: tense and lax.

It is common knowledge that English monophthongs display a variety of allophones conditioned by different linguistic environments. Long phonemes possess three allophones and short phonemes have two. The longest allophone of tense vowels is typical of the phoneme in a word-final position, the so-called "strong position" (DLL. p. 553); a relatively shorter variant is found before voiced consonants, and the shortest one before voiceless consonants. Similarly, the longest allophone of short vowels is found before voiced consonants, and the shortest - before voiceless ones (**TABLE XII**).

TABLE XII

Allophonic Chart of English Monophthongs

Tense vowels	**Lax vowels**
Allophone 1 - */bi:/, /hu:/, /sɔ:/, /ba:/...*	Allophone 1 - */bɪd/, /hɪd/, /bul/, kʌb/...*
Allophone 2 - */bi:m/, /ku:l/, /hɜ:b/ ...*	Allophone 2 - */bɪt/, /buk/, /kʌt/, /sɪt/...*
Allophone 3 - */bi:t/, /su:t/, /li:k/, /fu:t/, /ka:t/ ...*	

From the chart presented above we can infer that the presence of allophones in English can only further complicate vowel acquisition for Georgian learners. My experience shows that the third positional variant of long monophthongs is more difficult to master than the other two. Students rarely master the true distinction between them even when they are fully aware of their phonological significance. This is the result of a conflicting process when in certain linguistic environments, tense monophthongs retaining their systemic feature of length are contracted to such an extent that on the auditory level their articulation approximates that of short vowels. For instance, */bi:t -bɪt/, /li:k -/lɪk/, /i:t - ɪt/, /ka:t -kʌt/, /ha:t -hʌ t/...* Correcting errors like these, unfortunately, is a long process requiring much effort, so it is no surprise that many language learners fail to attain perfection. The causes are manifold: (a) a lack of distinction between tense and lax

vowels; (b) lack of mastery of correct pronunciation of the two types of vowels, and (c) lack of mastery of the correct pronunciation of allophones, which is a kind of reversed process of the first stage.

Reference sounds selected for the allophones are the same monophthongs chosen for respective phonemes. It follows that each Georgian monophthong functions as a reference sound not only for both types of English monophthongs (tense and lax) but for their allophones as well (**TABLE XIII**):

TABLE XIII

Combined Phonological/Phonetic Correlation of Georgian and English Vowels

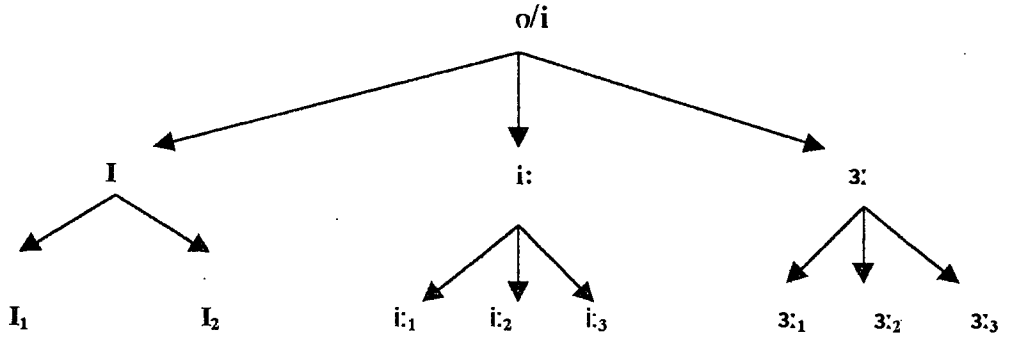


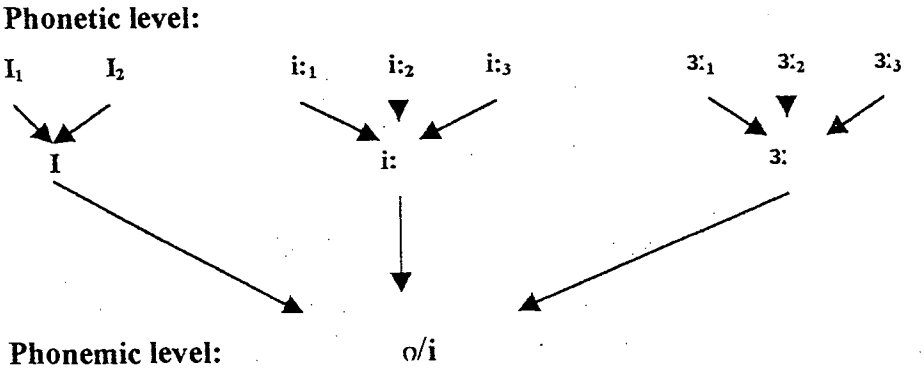
TABLE XIII is not just a chart, it is a schematic representation of the whole mechanism of mistake production revealing complex psycho-linguistic processes going on in the minds of Georgian learners during the acquisition of English monophthongs. English monophthongs (**I, i:, ɜ:**) together with their positional variants (I_1, I_2; $i:_1, i:_2, i:_3$; $ɜ:_1, ɜ:_2, ɜ:_3$) segment the Georgian reference vowel phoneme into a number (8) of small sections. This segmentation is a serious obstacle to the correct mastery of the English vowel system. Georgian phonemes are "torn" not only between qualitatively different sounds (**o/i** vs **I / i: /** vs **ɜ:**) but between quantitatively dissimilar ones (**o/i** vs $i:_1 / i:_2 / i:_3$ vs I_1 / I_2 as well. Therefore, the Georgian phonological space is a lot simpler than that of English (See **Fig. 1**) and when Georgian learners project the phonological net of their native language onto the elaborately segmented phonological space of the target language, errors occur. The mechanical transmission of the phonological characteristics of the vowels of L1 on to the phonological features of the monophthongs of English creates obstacles to the correct pronunciation of target vowels, resulting in the errors that we witness in the classroom.

The difficulties Georgian learners encounter in mastering the phonemic system of English have reverse implications for English speakers of Georgian. In fact, what English

speakers have to do, is ***to fold in***, ***to converge*** the variety of native allophones into their respective phonemes, and then the two major phonemes into one. Schematically this can be represented by an up-side version of **TABLE XIII**:

TABLE XIV

Phonological/Phonetic Convergence Scheme of English Vowels into Georgian Phonemes



According to the **Table** eight English allophones of three phonemes can be easily used to express one Georgian vowel **o/i** *without any damage to the communicative purport* (nor the accuracy of pronunciation). Nevertheless, speakers of English tend to lengthen Georgian monophthongs (inter-lingual interference). This is especially true of cases containing the so-called specifically Georgian consonants not found in English phonemics. A few examples from a phonetic survey conducted at Isik University, Istanbul[15] will suffice here: *water* - **tzkalee** (#14), **tzhaalee** (# 18), *bull* - **boorah (# 4), bura /bura:/** (# 5) etc. (for details see further).

From the analysis of pronunciation mistakes made by Georgian and English native speakers while mastering the respective languages as foreign, some significant pedagogic conclusions of a general nature may be drawn:

- all Georgian reference sounds have a phonemic status, i.e. they exist in the system of the Georgian language and they are the only ones utilized by Georgian learners in mastering English phonemes and allophones alike;

[15] The survey aimed at collecting and analysing the data connected with pronunciation difficulties of specifically Georgian consonants. The survey forms included 35 items with varying combinations of consonants and the number of syllables. Each item was pronounced several times in order to enable maximum adequacy in sound rendition. The survey was conducted at Isik University. Istanbul. February 14, 1999.

- in contrast, English reference sounds for Georgian vowels may either be of phonemic or allophonic status. In other words, both English phonemes and their allophones can be used as reference units for Georgian monophthongs;
- English and Georgian monophthongs are characterized by **multiple vs one sound** reference and vice versa, and Georgian-English correlation as **one vs multiple sounds**. This pattern, while being the "root of all evil" in the acquisition of the English vowel system by Georgian students, represents no significant barriers for English speakers of Georgian.

The study conducted has interesting implications not only for purely pedagogic purposes but from phonological and linguistic perspectives as well. Viewing this complex relationship between Georgian and English phonemes it is interesting to observe their relation in terms of increasing length (**TABLE XV**):

TABLE XV

Scale of Phonemic/Allophonic Distribution of English and Georgian Vowels[16]

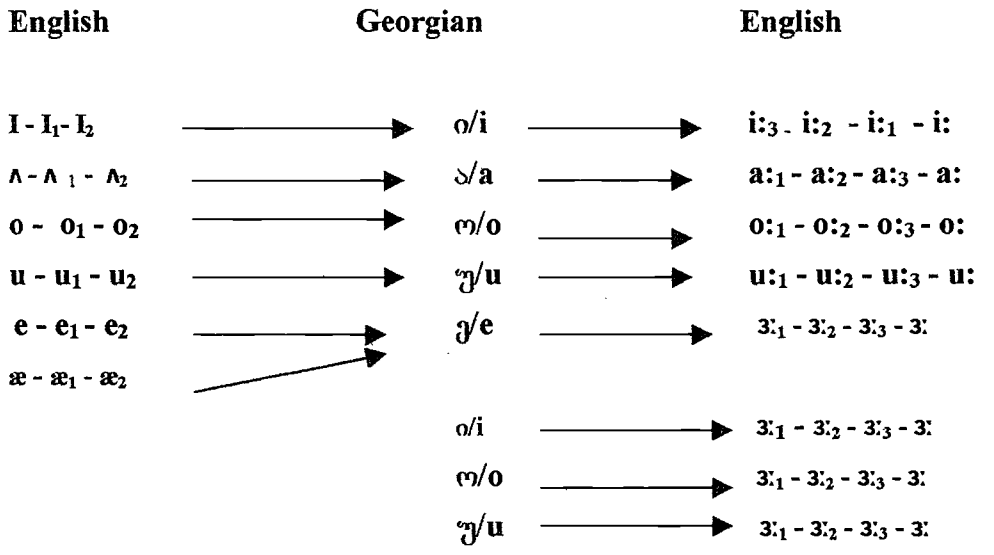


TABLE XV reveals the distribution of English and Georgian monophthongs and their allophones according to the increasing length (from left to right). Georgian phonemes occupy an intermediary position between English tense and lax vowels. The presented scale contains significant information for general phonology and linguistics. The middle position of the Georgian system reveals its unmarked status in relation to the English phonemic system, while the latter is marked. The unmarked status of Georgian phonemes points to a high rate and the likelihood of their occurrence in a great number of

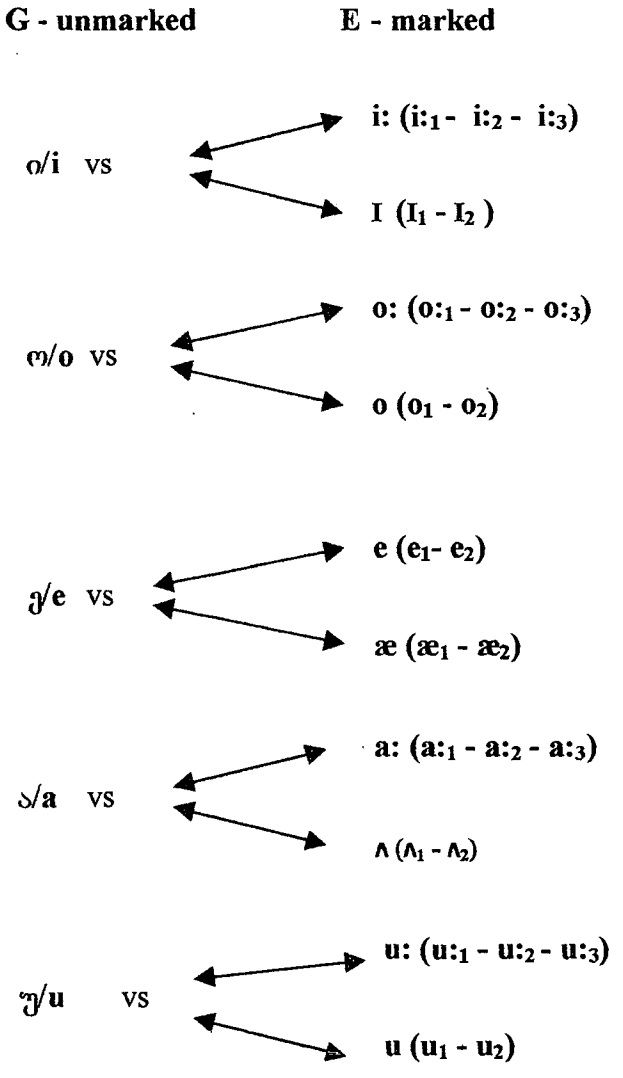
[16] For the sake of simplicity, only one example is given.

languages. Conversely, the marked status of the English phonemic system points in the opposite direction, indicating a low probability of their (or similar sounds) occurrence in other languages.

Accordingly, combined oppositional pairs of English and Georgian phonemes (including allophones) can be built as follows (**TABLE XVI**):

TABLE XVI

Combined Oppositional Pairs of Georgian and English



Absence of Microsystems: Diphthongs and Triphthongs

This section of the paper is devoted to the analysis of mistakes made by Georgian and English native speaker learners when mastering the target sounds *absent* in the phonemic repertoire of L1. Monophthong instances of this type were analyzed in previous pages: (a) the case study of the schwa, and (b) the central long vowel /ɜ:/. These two, however, are not the only sounds absent in Georgian phonemics. Two entire subgroups of diphthongs and triphthongs are also alien to the Georgian vowel system. The number of vowels in the two groups is quite impressive: 8 diphthongs - **eɪ, aɪ, əʊ, aʊ, ɔɪ, ɪɜ, eə, ʊə,** and 5 triphthongs - **aiɜ, aʊɜ, eiɜ, ɔiɜ** and **əʊɜ**[17]. Differing only in the presence of the schwa sound in the final position of triphthongs, the two types share significant structural, articulatory and auditory characteristics. Structurally, they can be viewed as combinations of various vowels. From the point of view of articulation they are characterized by the same stages of articulation: onset - nucleus - glide. In terms of actual articulation this means a strong, accented nucleus, a relatively weaker beginning and a weak glide. On the auditory level they are perceived, at least by foreign students, not as single vowels but as clusters, thus reinforcing, their structural aspect. The mentioned features of diphthongs and triphthongs function as the main causes of their mispronunciation. Georgian learners of English make two major types of mistakes in the articulation of these vowels: a) substitution of English bi- and tri-phonemic entities by combinations of **independent vowels**, and b) "curtailing" the final sounds with various degrees of shortening including dropping them altogether.

Mistakes of the first type are caused by similar sound perception prompting students to view the two types of phonemes not as whole, inseparable units but as combinations of independent vowels. Consequently, Georgian students replace diphthong-triphthong constituents with similar sounding reference Georgian monophthongs (see the section on monophthongs), leaving their basic characteristic (onset-nucleus-glide) beyond the scope of their attention. As a result we have *kau* for /kaʊ/, *dei* for /deɪ/, *bout* for /bəʊt/, *faia* for /faiɜ/, šaua for /šaʊɜ/, *loia* for /lɔiɜ/, etc. Although full monophthong replacement distorts the sound form of words, it does not hamper understanding and the communicative purpose is still achieved.

However, the same statement cannot be made for the second type of phonetic mistake - reduction of the final element. Mistakes of this type occur when full monophthong replacement is corrected and the weaker nature of the glide (final vowel) is

[17] There is no unanimity on the number of diphthongs and existence of triphthongs among scholars. The number of diphthongs varies from 3 to 8 (Finegan. p. 41; CEEL. p. 238-39).

explained. Students fall into another extreme: they reduce the final vowel to such an extent that it becomes completely inaudible and often, especially in word final position, it is dropped completely. e.g. *de*^{i}, *lo*^{ə}, *ba*^{i}, *he*^{i}, *fai*^{ə} for *day, low, buy, hay, fire,* etc.

Excessive reduction of final sounds in diphthongs and triphthongs brings about a change in their phonemic status: diphthongs become (or sound like) monophthongs and triphthongs go one step down and shift to diphthongs. This qualitative change weakens their sense distinctive function, and is followed by a semantic change negatively effecting the process of communication. Examples are numerous: *buyer /baiɜ/* pronounced as */bɑ^{i}/* (cf. *buy), player /pleiɜ/* - as */ple^{i}/ (*cf. *play*), etc., or, e, g, the verb *bite* pronounced as */ba^{i}t/*, creating grounds for confusing it with *but* (about mispronunciation of **a** vs **ʌ,** see monophthongs, also *Kite* can also be mispronounced as */ka^{i}t/* and easily confused with *cut, date* as */de^{i}t/* can be confused with *debt, shout* /šaʊt/ - / ša^{u}t/ confused with *shut*, etc.

The examples above reveal a search path Georgian learners follow in order to find an adequate length for the required sound in L1. Failing to find an adequate pattern of length, learners either *over-lengthen or curtail* the final vowel. Correction of similar mistakes on the phonetic level proved to be ineffective. This necessitated a search for other, non-phonetic variables. The solution was quite unexpected as the pronunciation of diphthongs and triphthongs turned out to be mainly governed by *prosodic features. It was found out that* **stress,** *shaping the articulation of the phonemes under discussion (on-set-nucleus-glide) was the source of mistake production.* English and Georgian are characterized by different types of stress. English has the so-called **strong dynamic stress while Georgian is characterized by weak dynamic stress. In terms of actual articulation** the strong dynamic stress, by its very nature, requires a certain weakening of the muscles towards the end of diphthong-triphthong articulation resulting in a weakening sound.

Contrary to English, Georgian **weak dynamic stress *requires the pronunciation of all the syllables of the word with almost identical strength***[18]. As a result we get the mistakes of full monophthong substitution. When we correct similar mispronunciations on the articulatory level, we may still keep intact the basic source of mistake production - stress. Small wonder then that students' efforts to correct their mistakes are short-lived and/or often futile. Correction of monophthong substitution should be done *not on the phonemic but on the prosodic level*, i.e. a step higher than the actual articulation of sounds. Students should be sensitized to the stress characteristics of the two languages. Pronouncing English and Georgian words with the stress patterns of both languages is

[18] This tendency of Georgian stress has preserved words in the same pronunciation for millennia. Cf. Sumerian: *gud* and Kartvelian *gud/guda*; Sumerian *har* and Kartvelian *har-i*. etc.

also helpful, e. g . pronouncing English words *boy* as /'bɔi/ and /'bo-'i/, *house* as /'haus/ and /'ha-'us/ and Georgian words *gogo* (*girl*) as /'go'go/ and /'gogo/, *deida* (*aunt*) as /'dei'da/ and /'deida/ makes the differences more tangible. The reduction of the final **o** and **a** to almost a schwa becomes very clear. Having seen a demonstration of the influence of stress on the pronunciation of diphthongs and triphthongs, students should be encouraged to provide their own examples followed by some practice.

English speakers of Georgian, however, do not have to worry about mispronunciation at all - note the case of schwa and central long vowels. They just have to exclude diphthongs and triphthongs from their RSG for Georgian. Although this seems quite easy, in practice, however, it turns out to be somewhat difficult. Interestingly enough, the reasons are not vowels but consonants, which will be our concern in the following pages.

CONSONANTAL SYSTEMS OF GEORGIAN AND ENGLISH

The English and Georgian consonantal systems, like their vowel systems, differ considerably. The first difference concerns the number of the consonant letters in each language: 21 (including **y** and **w**) in English and 28 in Georgian. The difference in seven sounds does not in any way imply that the rest of the 21 consonants have ideal correspondence. As in the vowel system, we find both similarities and differences, which influence the acquisition of consonants in varying degrees.

The Table that follows looks at the correlation of letters and sounds in the English consonant system (**TABLE XVII**):

TABLE XVII

Letter-Sound Correlation of English Consonants

- Single sound - single letter (12 sounds - 12 letters)

1. /**b**/ - b	2. /**d**/ - d	3. /**h**/ - h	4. /**l**/ - l	5. /**m**/ - m	6. /**n**/ - n
7. /**p**/ - p	8. /**r**/ - r	9. /**t**/ - t	10. /**v**/ - v	11. /**z**/ - z	

- Single sound - several letters and/or letter combination/s (3 sounds - 6 letters and 3 combinations)

  /**k**/ c, k, q, ck, ch /**s**/ s, c /**f**/ f, ph

- Single sound - letter combinations only (5 sounds - 5 combinations)

š - sh č - ch ð - th θ - th ŋ - ng

- Single sound - no special graphic expression (1 sound)
  ʒ (cf. *measure*, *beige*, etc.)
- Cluster sound - one letter (1 sound - 1 letter)
  /k+s/ - x
- Cluster sound - several letters or letter combinations (1 sound - 2 letters)
  /dʒ/ j, g
- Half-vowel and half-consonant sounds - (2 sounds - 2 letters)
  /j/ - y **/w/** - w (24 consonant sounds altogether).

It is very telling that within consonants we find four letters rendering the same phonetic values. Thus, the phonetic values of **/k/** and **/s/** are rendered by three (**k, c, q**) and two (**s, c**) different graphs respectively. The same sound **/k/** is additionally expressed by letter combinations **ch** and **ck**. Conversely, a cluster consonant sound **/k + s/** is expressed by one letter **x; /f/** is also expressed by the combination **ph**. A similar tendency is found with **/dʒ/** which is expressed by 2 letters - **g** and **j** without effecting the numerical indices for letter-sound correlation[19].

Hence, we will not err by stating that *in general terms* the English vowel and consonant systems are characterized by opposite tendencies: the vowel system is modeled on the pattern one-many, the consonant system has the formula of many-one. Consequently, only 14 letters out of 21 have an ideal one sound correlation; the rest of the 7 letters render various consonant sounds complemented by extra means of expression.

In other words, from the phonemic point of view, the English consonant system is both deficient and complicated. From the synchronic point of view it contains three extra letters (c, q and x) and three combinations of consonants (ck, ch, ph)[20] that have orthography-based distinctive function only. On the other hand, the language possesses some sounds that have no separate means of expression and are rendered by letter clusters. These sounds are six in number: **š, č, ʒ, ŋ, ð** and **θ**. The ultimate result is an excessive number of consonant sounds as compared to their graphic expression (21 letters - 24 sounds). Hence, the English consonant system is characterized by a very peculiar feature: on the one hand, the system lacks graphic signs to express some sounds (**ʒ, dʒ, š, č**, etc.), and on the other, it has an excessive number of letters (**c, k, q; g, j**) to express identical phonemes.

[19] Interestingly enough, in the runic script, each rune indicated a single sound (Rastorgueva, p. 63).
[20] Historical aspects not relevant for classroom teaching of the sound system are excluded from the study.

The classification obviates a general tendency of English phonemics, which seems to be towards **fewer means of expression for a large number of sounds** - 26 letters of the English alphabet have to suffice for an entire phonemics of 49 sounds (24+25, excluding allophones). This general tendency of unequal correspondence between letter and sound causes not only pronunciation but orthographic difficulties as well.

In contrast to such a diverse letter-sound correlation in English, Georgian is characterized by an ideal letter-sound relationship: 28 letters - 28 consonants (total of 33 letters - 33 sounds). The Georgian consonant sounds are as follows (the alphabet is presented with international phonetic symbols):

ბ	გ	დ	ვ	ზ	თ	ჯ	ლ	მ	ნ	პ	ჟ	რ	ს
b	**g**	**d**	**v**	**z**	**t^h**	**k'**	**l**	**m**	**n**	**p'**	**ž**	**r**	**s**

ტ	უ	ფ	ქ	ღ	ყ	შ	ჩ	ც	ძ	წ	ჭ	ხ	ჰ
t'	**p^h**	**k^h**	**γ**	**q'**	**š**	**č**	**c**	**ʒ**	**c'**	**č'**	**x**	**ǯ**	**h**

A comparison of the consonant phonemes of the two systems shows that Georgian phonemics lacks 6 English consonant sounds (**/f/, /w/, /j/, /ŋ/, /ð/** and **/θ/**) while the rest of the consonant sounds (18) can be considered to correspond to each other with but a few exceptions. Out of the mentioned six consonants three **/f/ /j/** and **/w/** have their own letters of expression while the other three **/ŋ/, /ð/** and **/θ/** do not, and are expressed by letter combinations. My teaching experience shows that on the whole, unlike the vowel system, the acquisition of the English consonantal system for Georgian learners presents no difficulty, although a few minor obstacles caused by absence of the above-mentioned consonants are worth mentioning.

Absence of Consonants

Although not present in the consonant system of Georgian the sound **/j/** poses no barriers to Georgian learners. This, I think, can be accounted for by a very flexible articulatory apparatus able to pronounce a variety of different and difficult sounds.

The sound /**w**/, being easy to pronounce, is sometimes replaced by /**v**/ especially when it is in close conjunction with /**v**/ as in *very well,* often sounding as *very vell.* This type of replacement can cause some ambiguity in such pairs as **when - van** but cases like these are not numerous (for the substitution of **e-a**, see monophthongs).

The next sound is /**f**/. Like the previous consonants the sound is easily mastered by students, especially by those who know Russian and can readily supply Russian /**f**/ as its reference.

Next comes /**ŋ**/**.** This sound is invariably rendered by Georgian students as a combination of two sounds, **n+g**, especially at the beginner level. The substitution is encouraged by English spelling and the alphabetic reading of the Georgian alphabet (see the section on diphthongs and triphthongs above).

The sounds acquired with greatest difficulty are the inter-dental voiced and voiceless fricatives **ð** and **θ.** The absence of these sounds makes Georgian students resort to the native phonemic system and find the best suit. The chosen reference sounds are the voiced alveolar stop **d** or a voiced sibilant **z** for the voiced fricative **ð**, and a voiceless aspirated stop $\mathbf{t^h}$ or a voiceless sibilant **s** for the voiceless counterpart **θ**. As a result, we get the mispronunciation pairs **ð - d** and/or **ð - z** for the voiced fricative **ð** and **θ** - $\mathbf{t^h}$ and/or **θ - s** for the voiceless counterpart. Examples are plenty: */dei - zei/*[21] for *they, /bat^h/* for *bath /ba:* **θ**/, *t^{h}eata* for *theatre* and the like. Here belongs the pronunciation of the definite article as well: */di/ - /da/* or */zi/ - /za/* substituting both the voiced fricative and the neutral sound (see also the case with schwa, p. 18).

An interesting peculiarity should be noted in this context: the pronunciation of **ð**, **θ** sounds do not seem to present any difficulty in isolation. The problem occurs in rapid connected speech when students, without accomplishing the pronunciation of a fricative, change the articulatory regime for another sound. This results in a distorted and/or blurred pronunciation of fricatives together with the following sound. Mistakes like these can only be corrected through practice and/or various drilling exercises which help students to practice a quick transition from one articulatory regime to another without impairing the articulation of any of the sounds involved.

It is important to note that in neither of the enumerated mispronunciations is the message distorted or changed, as is usually observed in the case with vowels. The picture changes entirely, however, when we deal with the acquisition of Georgian consonants by English speakers.

[21] Also cf. "...some French speakers tend to perceive (and pronounce) English words like *thin* and *this* as though they were *sin* and *zis*" (Finegan, p. 36).

The Georgian consonantal system consists of 28 sounds. The discrepancy in number - 28 vs 24 - does not reflect the actual difficulties English speakers have to surmount in order to master Georgian sounds. The table below (**TABLE XVIII**) represents the correspondence between consonant phonemes of English and Georgian:

TABLE XVIII

Consonant Phoneme Correspondence of English and Georgian

English Georgian

b - ბ	**d** - დ	**g** - გ	**k** - კ	**n** - ნ	**dʒ**- ჯ
h - ჰ	**l** - ლ	**m** - მ	**p** - პ	**r** - რ	**s** - ს
t - ტ	**z** - ზ	**v** - ვ	**č** - ჩ	**š** - შ	ʒ - ჟ

(18 sounds).

The rest of the 10 sounds (თ, ფ, ქ, ღ, ყ, ც, ძ, წ, ჭ, ხ) are not found in English phonemics. This, being true as a general statement, has some exceptions on the allophonic level.

The English velar stop **k** in its basic aspirated allophonic form as in *cat, cut, cough, kite, kin, quit, quince*, etc. (opposed to **k** in *sky, ski, skill*, etc.) is a very close variant of the Georgian კ - **k**^{h} (ejective).

The English bilabial stop **p** in its basic aspirated allophonic form as in *pot, pill, pound*, etc. (opposed to non-aspirated **p** in *spy, spill, speak, etc.)* best corresponds to the Georgian ფ - **p**^{h} (bilabial aspirated voiceless stop).

The English alveolar aspirated stop **t** as in *tie, tick, teach*, etc. (opposed to non-aspirated **t** as in *still, stone, stay*, etc.) best resembles the Georgian თ - **t**^{h} (dental-alveolar aspirated stop)[22]. In other words, English learners of Georgian will get the desired effect when they pronounce Georgian ფ, თ, კ with a relatively weaker aspiration than English **p, t, k**; e, g, ფაფა, ქაფი, თათარა, etc. The mentioned characteristics of the above-discussed consonants were also noted by some of my respondents who marked aspiration either in transcription or by super-scribing the letter **h** next to **p, t, k**: e.g. *p^{h}ap^{h}a, phapha* (cf. *pahpah*), *t(h)ati - thathi* (cf. *tahtee*), *khatami* (cf. *kahkahme*).

Unfortunately, the mentioned obstacles make up a very insignificant part of the problems that Georgian phonemics pose. There are other sounds ღ, ყ, ცʒ, ძ, წ, ჭ, ხ not found in English (nor in a number of other languages). The analysis of the phonetic survey shows that lack or absence of these sounds in English is just one aspect of the

[22] G. Hewitt also notes the mentioned correspondences but does not provide a complete picture of correspondences as a specific micro-system reflecting Georgian sounds (Hewitt, p. 5).

difficulty. Phonetic values of these sounds pose much more serious articulatory "requirements". Characterized by various places of articulation and being **single phonemes,** they are **perceived as sound complexes.** This tendency roughly approximates the diphthong and triphthong perception by Georgian learners and clearly indicates problem areas Georgian and English learners face. Small wonder, then, that the pronunciation of the mentioned sounds often turns out to be the "Rock of Sisyphus" for English speakers as well as for students of other languages (**TABLE XIV**)[23].

TABLE XIV

Phonetic Values of Specifically Georgian Consonants

პ - **p^h**	თ - **t^h**	კ - **k^h**	ჭ - **tch**
ც - **ts**	ძ - **dz**	წ - **tz**	ყ - **ghk**
ღ - **gh**	ხ - **kh**		

Classification of the mistakes made by English learners of Georgian are so numerous and diverse in their character that they require a separate sizable work. Such a classification may then be used as the basis for a detailed analysis in order to find answers to difficult issues connected with the pronunciation of Georgian consonants. However, some of the most obvious tendencies, readily observed in Georgian consonant acquisition, are presented below (For details see: **Addenda TABLES I** and **II**). Illustrative material is basically taken from the phonetic survey conducted by the author at Isik University and is supplemented by other examples from previous experience with a group of adult students working for McConnell Dowell Company. The survey was conducted with 30 respondents, all of them my colleagues at the EFL Department at the mentioned university. There was a total of 35 items tested, with one repeated word. The number of syllables in the words used varied from one (4 items) to three (5 items) with 25 two-syllable words. All of them contained certain difficult sounds for articulation.

The tested sounds presented in the paper are a velar fricative ხ best rendered by the sound combination **kh**, and the combination of two specifically Georgian sounds: pre-alveolar affricate წ (**tz**) + pharyngal ყ (best rendered as **ghk**)[24].

[23] One of the most interesting features observed in connection with specifically Georgian consonants is the presence of some of them (usually one or two) in other languages, e.g. French "r" as in *Paris*; Ukrainian and Turkish similar soft **ğ**, Greek, Russian and Spanish "x" as in *Jose*, Italian **dz** as in *zona*, also Italian **ts** as in *zucchero*, etc.

[24] The results of the phonetic survey, as I presume, are extremely interesting for general phonology, phonetics and historical linguistics.

The survey revealed that difficulties in pronouncing specifically Georgian consonants exist irrespective of their linguistic surrounding. The sounds were given in one, two and three syllable words varying from the simplest C + V roots to complex consonant combinations containing three sounds. Specific Georgian consonants seem to be unpronounceable even in the simplest one-syllable combinations as they were unrecognizably distorted, e.g. the word *tree,* best rendered as **khe** and consisting of only two sounds (ხე) and two letters respectively (**Table I**), is rendered not only by different numbers of sounds but by qualitatively different consonants and sound combinations. The following were observed in connection with the velar fricative ხ/**kh**:

a) the ***kh*** combination was simplified to **h** - *he, heh,* etc.;

b) the **kh** combination was given in a reversed sequence of **hk** - *hke*;

c) non-relevant sound/s were inserted - **hr**, **khr** - *hre*, *khray*;

d) the voiceless consonant **k** was substituted by a voiced one **gh** - *ghe, gheh*;

e) two procedures (**c** and **d**) were applied simultaneously ***gkr*** - *gkreh*;

f) entirely inadequate sounds **z** and **dz** were used: - *zeh, dzeh*, etc.;

One of the interesting and curious features the study disclosed is that consonants, depending on their combination, may be differently perceived by different individuals. This feature, being much weaker with vowel combinations (see examples above), became more clear-cut with simple two consonant combinations, to say nothing of three consonant clusters as well as four or five consonant combinations that abound in the Georgian vocabulary. The best illustrative example, I believe, is the Georgian word for *water,* with an excessive number of versions. The group of 30 respondents produced 37 variants of the same word. The consonant cluster tested წღ/**tzghk** (*tzghkali* best but inexact approximation) was basically **simplified**. The simplification goes along two lines: (a) simplification of the cluster retaining the cluster structure, e.g. **ts, tz, th, tzh, tzk,** or (b) simplification through discontinuation and insertion of a vowel/s, e.g. **ts-gh, z-x** (like Greek **x**), **z-rk, zsc - ch, dzk**, etc. (see **TABLE II** of the **Addenda** for more details) and is caused by the attempt to ease the difficulties of articulation. Examples are numerous: tz*e*k*a*ly (#8), tz*i*g*a*ti (10), th*i*g*a*gri (16), etc. (see **TABLE II** of the **Addenda** for more details).

The next characteristic is compensatory - that is, the attempt to make up for a deficiency in consonant pronunciation by vowel lengthening: e. g. hr***ey*** (I, #9), khr***ay*** (I, 15), kak***ey*** (I, 16), h***ei*** (I, 4), ts***ea***hli (II, #12), tr***ua***ri (II, #5), tzik***au***l (II, #7), th***e***gh***aie*** (II, # 20), etc. (see **TABLE II** of the **Addenda** for more details).

It is clear that the tables present more questions than solutions both to teachers and linguists alike. It is almost impossible to draw any principal suggestion for English

students of Georgian for correct pronunciation. The problem of how to find ways to teach specifically Georgian consonants efficiently has yet to be solved. What seems helpful though is making students of Georgian **aware of the above-mentioned difficulties as they entail not only simple articulatory distortions but are phonemically relevant, and the fact that every distortion is likely to cause misunderstanding of the message**. The systemic approach is helpful here as it equips students with a comparative picture of Georgian and English consonant systems, shows them the basic pitfalls, and aids them in guarding against future problems.

INSTEAD OF CONCLUSION

The analysis presented above clearly shows that learners of a foreign language try to pronounce target sounds based on the sound repertoire of the native as well as the sound systems of other languages acquired previously. This "storehouse" of sounds is the learner's main resource for target sound acquisition, especially at the starting point. It is a logical way to proceed from familiar to unfamiliar, from the known to the unknown, involving numerous attempts to find the best suited sound for the target phoneme. Once the selection is made the sounds make up a special **Reference Sound Group** (RSG) to which the learner refers in case of need. As it is created out of need its existence can neither be denied nor avoided. It is a tool for mastering the sound system of a foreign language and is an invisible and objectively existing phenomenon.

Based on the learner's native phonological system, the RSG functions as phonetic "crutches" during the whole process of sound mastery. It has its own structure and features, greatly conditioned by the L1-FL combination, and therefore, subject to change with every modification of FL and/or L1.

Structurally the RSG has a nucleus and a periphery. The more active sounds create the **central or nucleic** part of the RSG and the less active ones make up its **marginal sections** (Meskhi 2002, p. 7). The RSG may consist of the whole vowel system of L1 (Georgian) or may have a nucleus made up of the most frequently chosen reference sounds as well as marginal elements like English and Turkish (Meskhi, 2002).

The degree of similarity/dissimilarity existing between the FL and L1 phonemes is another feature affecting the nature of the RSG. Being a phonetic support system in the mind of the learner, the RSG is a source of constant mispronunciation determining the "quality" of mistakes. The RSG is a phonemic or systemic phenomenon, a source of an innumerable number of mistakes witnessed on the phonetic level. The traditional way of correcting *physiological or acoustic distortions* of sounds leaves the learner's L1, and

therefore, the RSG, neglected and "unattended". Left in the shadow, the RSG is an "effective" mechanism for mistake production.

Contrary to the dominant method of FL instruction (*correction of articulatory distortions)* this paper proposes a holistic approach to the acquisition of any segment of the target sound system. The method suggests involving the learner's L1 and making it **part and parcel** of the whole teaching and learning process. The method should be used with adult learners only, i.e. those who could and should be exposed to more conscious methods of learning (explanation, comparison, illustration, etc.) in order to gain a clear understanding of a target language.

The integration of the native language should serve to achieve a number of objectives, some of which are listed below:

(a) it can guide the formation of the best suited RSG;

(b) it can throw light on possible future inter-lingual and intra-lingual obstacles;

(c) it can prevent learners from violating the permissive pronunciation boarders of target phonemes, and

(d) it can help learners acquire FL sounds with less effort by exposing students to many examples in both languages and involving them in active participation and discussion.

Teachers should not forget that mistakes belong to the sphere of speech, and they are made in the actual articulation of sounds, but their correction must start from the system of the language. In other words, mistakes are phonetic, but their correction should start from phonology.

EPILOGUE

I hope that this work which I have undertaken helps to put the spotlight on one of the lesser-known languages of the world, Georgian, and its relationship to the dominant language of the world today, English. The Georgian language, neglected and insignificant today, may turn out to be one of the most fascinating languages to learn for the very reasons that make its acquisition so difficult. Due to its long-standing history, its contacts with the ancient world and its stunning stability, Georgian is a helpful resource for scholars working on the problems of prehistory. As a teacher and linguist I feel it my duty and a great honor to help those who one day will need the ideas I have put on paper. I am sure the time will come, and then, when needed, they are available for all.

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ADDENDA I

TABLE I

TRANSLITERATION CHART OF GEORGIAN *ხე/khe TREE*

#	Transliterations	Letters	# of versions	Sound combinations	Total	Respondents
1 H	he	2	3	h		
2	-e	2 (?)	1	-		
3	heh	3	2	h		

4		hei	"	1	h		
5		hke	"	1	hk		
6		hre	"	2	hr		
7		hay	"	1	h/*ay*		
8		hrg	"	1	hrg		
9		hrey	4	1	hr		
10		hɛch	4	1	h/ch		
11		hekhe	5	1	h/kh		
12	K	khe	3	7	kh		
13		khey	4	1	kh/ey		
14		khey	"	1	kh/ey		
15		khray	5	1	khr		
16		kahey	"	1	K/a/h/ey		
17	G	ghe	3	2	gh		
18		gheh	4	1	gh/h		
19		gkreh	5	1	gkr/h		
20	Z	zeh	3	1	Z/h		
21	D	dzeh	4	1	dz/h		
						32	30

TABLE II

TRANSLITERATION CHART OF GEORGIAN *წყაღო/tzghkali WATER*

#	Transliterations	Letters	# of versions	Sound combinations	Total	Respondents
1 T	tsari	5	1	Ts/-		
2	tskali	6	"	Ts/k		
3	tzikau	"	"	Tz/k/au		
4	thiali	"	"	Th/-/ia		
5	truari	"	"	Tr/ua/r		
6	thiagri	7	"	Th/ia/gr		
7	tzikaul	"	"	Tz/i/k/u		
8	tzekaly	"	"	Tz/e/k		
9	tzigwti	"	"	Tz/i/gw		
10	tzigati	"	"	Tz/i/g-t		
11	tzhagri	"	"	Tzh/a/gr		
12	tseahli	"	"	Ts/ea/h		
13	tseahri	"	"	Ts/ea/hr		
14	tzkalee	"	"	Tzk		
15	tzuaree	"	"	Tz/ua/r		
16	thigagri	8	"	Th/i/g-gr		
17	tsaghari	"	"	Ts/a/gh-r		

18		tzhaalee	"	"	Tzh/aa-ee		
19		tsikahli	"	"	Ts/i/k-a-h		
20		thɛghaie	"	"	Th/ɛ/gh-aia		
21		thisiale	"	"	Th/i/s-ia		
22		tsukhayee	9	"	Ts/u/kh-ayee		
23		tzekraree	"	"	Tz/e/kr-a-r		
24		tsikahley	"	"	Ts/i/k-h		
25		tzukharee	"	"	Tz/ukh		
26		tsuhkharee	10	"	Ts/u/kh-a/r		
27	Z	zkɛri	5	"	zk		
28		zɛxari	"	"	Z/e/x		
29		zihari	"	"	Z/i/h		
30		zekaree	7	"	Z/e/k/ee		
31		zekarlee	8	"	Z/e/k-ar		
32		zurkaree	"	"	Z/u/rk-ar		
33		zscichalee	10	"	Zsc/i/ch		
34	D	dzkari	6	"	Dzk/a/r		
35		dzkhari	7	"	Dzkh/a/r		
36		dzerabee	8	"	Dz/e/r/		
37		stsaharee	9	"	Sts/a/h	37	30

ADDENDA II

HELPFUL TIPS FOR TEACHERS FOR THE APPLICATION OF THE *SYSTEMIC METHOD* IN FOREIGN LANGUAGE TEACHING

Differences in the letter-sound correlation

➢Compare the ***alphabets*** of L1 and FL in terms of the number of vowel and consonant letters.

Quantitative differences will help outline the basic problem areas in learning the target language.

➢Compare vowel and consonant sounds of L1 and FL in terms of their number.

Quantitative differences will help outline the basic phonemic problem areas.

➢Determine the type of sound-letter correlation in L1 and FL (one sound-one letter, one sound different letters, etc.).
This will help determine possible future pronunciation as well as spelling mistakes.

➢Compare the ***vowel systems*** of L1 and FL with the aim of determining different types of vowels (monophthongs, diphthongs, half-vowels, etc). Find similarities and differences between the outlined types.
Differences in the types of vowels are a sure signal of their being a potential source of mispronunciation.
Similarities may also cause problems, so, observe students' mistakes and analyze them.

➢Determine the basic phonological function/s of vowel characteristics in L1 and Fl in terms of similarity/dissimilarity (vowel length, for instance).
Differences in phonological functions are sure to cause the biggest problems and therefore, they should be eliminated first.

➢Compare the consonantal systems of L1 and FL according to the same stages as vowels.

➢Compare L1 and FL in terms of stress.

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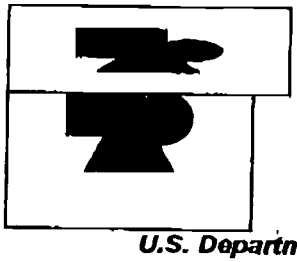

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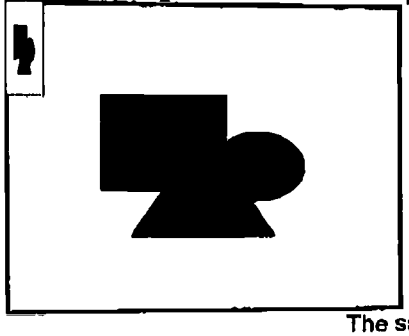

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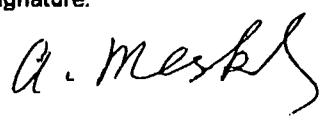

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