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Thanasis Georgakopoulos, Theodossia-Soula Pavlidou, Miltos Pechlivanos, Artemis Alexiadou, Jannis Androutsopoulos, Alexis Kalokairinos, Stavros Skopeteas, Katerina Stathi (Eds.)

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ΠΕΡΙΕΧΟΜΕΝΑ

THE VOWEL SYSTEM OF MIŠÓTIKA CAPPADOCIAN

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Abstract

Η παρούσα μελέτη έχει ως στόχο να αναδείξει τις αλλαγές που φαίνεται να έχει υποστεί με το πέρασμα των χρόνων το φωνηεντικό σύστημα των Μιστιώτικων, που αποτελεί μια γλωσσική ποικιλία της Καππαδοκικής διαλέκτου. Ουσιαστικά, εστιάζει στη σύγκριση του γλωσσικού συστήματος που χρησιμοποιούν δύο διαφορετικές γενιές φυσικών ομιλητών της διαλέκτου, σε σχέση με το αυτό που έχει περιγράψει ο Dawkins (1916) στις αρχές του 20ου αιώνα. Επιθυμούμε να προσδιορίσουμε και να ερμηνεύσουμε τη μορφή που έχει πάρει το φωνηεντικό σύστημα της Καππαδοκικής ποικιλίας στις μέρες μας, μέσα από τη μελέτη φυσικού διαλεκτικού λόγου.

Keywords: Mišótika, vowel system, linguistic change, language contact, elimination

1. Introduction

The present study examines the vowel system of Mišótika, a variety of Cappadocian Greek. The aim of this research is to compare the contemporary vowel system of Mišótika, as used by two different generations, with Dawkins' descriptions and remarks made at the beginning of the 20th century. In addition, we present the linguistic changes that the vowel system has undergone, concentrating on the speech of elderly people and younger adults in a refugee village in present-day Northern Greece. Ano-

ther goal is to determine the phonological status of the vowels and analyse their distribution in the vowel spectrum.

This paper is structured in six parts. Section 2 contains some basic information about the historical and linguistic background of Cappadocian Greek and the variety of Misti. In section 3 we present the methodology used to approach the dialectal system. In section 4 we present the results of speech analysis and in section 5 the interpretation of the vowel distribution. Finally, in section 6 we detail the primary conclusions of the present research.

2. Historical and linguistic background

The Cappadocian dialect was spoken in the centre of what is now Turkey, until 1924. Cappadocian is a linguistic variety of Greek origin which was in contact with Turkish for nine centuries after the invasion of the Seljuks in the 11th century and the conquest of Byzantine Asia Minor by the Ottoman Turks in the 14th century. The result of this contact is apparent in the Cappadocian lexicon, phonology, morphology and syntax, although the precise impact varies among the different subdialects according to the nature and duration of the contact situation.

One of the Cappadocian villages was Misti, which was considered a homogeneous town. In 1924, the Cappadocians were forced to leave their homeland as part of the population exchange between Greece and Turkey. The inhabitants of Misti, estimated at around 400 families, were scattered all over Greece and settled in over twenty different villages and towns (homogeneous and mixed).

Richard Dawkins, who conducted fieldwork in Cappadocia in the years 1909-1911, observed that the Cappadocian vowel system at the time consisted of eight vowels:

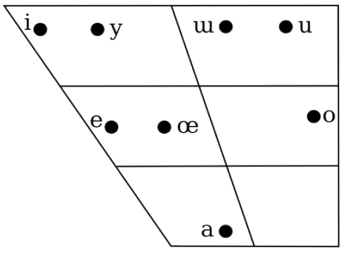

Figure 1 | *The older Cappadocian vowel system*

The vowels {i, e, a, o, u} are common Greek, but {y, œ, ɯ} are borrowed from Turkish. The latter vowels appear mainly in Turkish loans, e.g. *karı* 'woman' > {kaˈrɯ}, *tütün* 'tobacco' > {tyˈtyn}, whereas their presence in Greek words is rare, if not unattested, e.g. σκυλιού > {ʃciˈʎu} > {ʃcyˈʎy}, τουτούτ' > {tyˈtyt}, ήκουσεν > {ˈiksen} > {ˈyksen} (Janse 2009: 40f; 2017: §6.1.1).[1]

3. Methodology

The data for the present study were recorded in Neo Agioneri, a Cappadocian refugee village in the prefecture of Kilkis, using ethnographic methods of data collection. Recordings of casual conversations were made in 2007 and subsequently transcribed and annotated in 2013-14.[2] The fieldwork was conducted by trained members of the community, all bilingual native speakers of Mišótika and Modern Greek. The fieldworkers recorded informants in pairs for more than an hour and comparisons were made taking into account two parameters: a) one independent, viz. Age, and b) one dependent, viz. Stress.

The transcription of the recordings was also made by bilingual speakers of Mišótika and Standard Modern Greek (SMG). The transcription was only orthographic in Greek[3], but we asked our transcribers to use capital letters, instead of small print, whenever they heard a sound that they could not identify as an SMG vowel. We followed this method hoping that our transcribers would identify vowels that are part of the Mišótika vowel system, but do not exist in SMG. We thought that such a method was a beneficial way to approach the linguistic system of Mišótika, as best we could. Nevertheless, it is important to say that we do not take their suggestions for granted, but as a preliminary hypothesis to be evaluated.

1 The very scanty evidence does not allow any speculations about the exact conditions under which {i} or {u} could change to {y} in certain environments. The examples quoted are isolated even in the respective dialects from which they were taken.

2 The data collection was made possible by a grant from the Hans Rausing Endangered Languages Project (HRELP PPG0033: Documentation & Description of Cappadocian, directed by Mark Janse, Ghent University; see elar.soas.ac.uk/deposit/0036). The transcription of the data was financed within the framework of the research program AMiGre (Pontus, Cappadocia, Aivali: In search of Asia Minor Greek), directed by Angela Ralli, University of Patras, sponsored by the European Social Fund of the EU and the Greek Ministry of Education (Thales 380255; see amigre.cs.teiath.gr).

3 Not being trained linguists, the transcribers did not transcribe the recordings according to the International Phonetic Alphabet.

The transcribers used five small and five capital letters, theoretically identifying ten different vowels. The five vowels transcribed with small letters {i, e, a, o, u} were identified as being similar to the five vowels of the SMG, viz. /i, e, a, o, u/. The five vowels transcribed with capital letters {I, E, A, O, U} were identified as being different from the SMG vowels. Formant analysis helped us to find the realization area of these particular sounds and compare them with descriptions in the older literature. More specifically, we would like to investigate if any of these sounds coincide with the vowels mentioned by Dawkins (1916) and others, and also verify if these vowels as identified by the transcribers are indeed realized as such.

Praat (Boersma & Weenink 2013) was used for the transcription, annotation and formant analysis of the data. We examined eight male speakers of Mišótika from Neo Agioneri, four from each informant group: four elderly males (75+ years old) and four younger males (26-35 years old). 1.000 tokens were collected from each informant, totalling 8.000 tokens. The results of the formant analysis were normalized, following the Watt & Fabricius normalization method[4], with the help of NORM (The Vowel Normalization and Plotting Suite), an electronic database designed to aid phoneticians in manipulating, normalizing, and plotting vowel formant data.

4. Results

In this section, we present the results provided by the measurements of the study on the speech of elderly and younger speakers of Mišótika and discuss the distribution of the vowels in the vowel spectrum. The following charts are divided according to the two informant groups and exhibit the realization of the vowels in the speech of the eight native speakers of Mišótika.

4.1. Elderly informants

The analysis of the speech of elderly informants highlighted the distribution of the vowels according to the F1 and F2 values. In Figure 2, we can see the charts of stressed

4 The Watt & Fabricius normalization method is based on central values by speaker and is utilized to reduce the differences between the speakers, but in essence the individual differences related to the physiological articulation system of every speaker are lost, while at the same time it retains the systematic differences between the vowel systems of the informants.

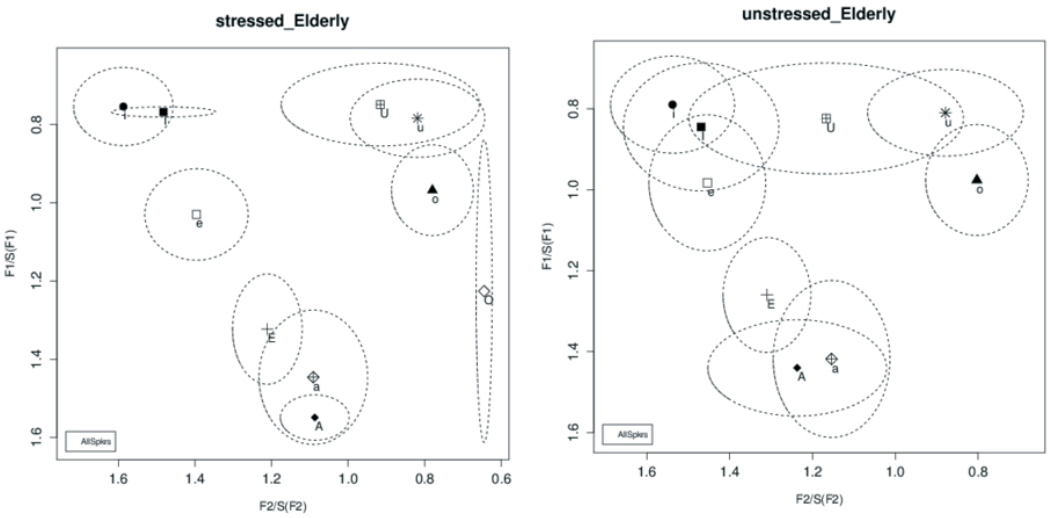

Figure 2 | *The stressed and unstressed vowels of elderly speakers*

and unstressed vowels of elderly speakers and then the table of the F1 and F2 values with the number of detected sounds.

Before we present the results of the analysis, we would like to explain very briefly, what the following charts show. In particular, the vertical axis refers to the normalized F1 value, which is a measurement that indicates the position of the tongue in relation to the high/low axis. The horizontal axis refers to the normalized F2 value, which shows the position of the tongue in the mouth in relation to the front/back axis. Each point on the chart with a letter next to it refers to the value of F1 and F2 of each particular vowel, and the ellipsis around it presents the area that the majority of realizations of each vowel occupy in the vowel spectrum. The ellipses are derived from the statistical algorithm that calculate the 1.5 standard deviation of the values in the x- and the y-axis. This refers to approximately 74% of the instances.

Figure 2 shows the distribution of the five small vowels {i, e, a, o, u}, which are similar to the vowels of SMG. The stressed vowels are clearly distinct to each other, whereas the unstressed vowels present a partial overlap between {i} and {e} as well as between {o} and {u}, as is usually the case in the vowel systems of Modern Greek and its dialects.

Apart from the five vowels that exist in SMG, our transcribers identify five more vowels using the capital letters {I, E, A, O, U}. We would like to reiterate that we do not

Stressed				Unstressed			
Vowel	**F1**	**F2**	**Records found**	**Vowel**	**F1**	**F2**	**Records found**
{i}	0.754	1.587	307	{i}	0.79	1.538	543
{I}	0.768	1.482	2	{I}	0.845	1.469	5
{e}	1.03	1.396	220	{e}	0.983	1.454	312
{E}	1.323	1.211	58	{E}	1.26	1.31	46
{a}	1.446	1.091	334	{a}	1.418	1.154	928
{A}	1.549	1.087	3	{A}	1.44	1.237	7
{o}	0.968	0.78	219	{o}	0.976	0.803	224
{O}	1.226	0.645	2	{O}	-	-	-
{u}	0.784	0.819	115	{u}	0.81	0.879	343
{U}	0.749	0.916	14	{U}	0.824	1.167	12

Table 1 | The F1 and F2 values of the vowels

take the above identifications for granted, but try to evaluate their indications. These five other vowels appear in small to very small numbers, as can be seen in Table 1. The sound that our transcribers transcribe with capital {A} appears only ten times altogether in elderly speech: three times as a stressed and seven times as an unstressed vowel. Capital {O} appears only twice as a stressed vowel, and capital {I} is identified only seven times: twice as a stressed and five times as an unstressed vowel. Conversely, capital {U} appears more frequently in fourteen stressed and twelve unstressed tokens respectively.

As for the distribution of {I, A, O, U}, we note that capital {I} is realized as a high front vowel, {A} as a low front vowel, {U} as a high vowel with a tendency for a less back realization and {O} as a really back vowel. However, what is particularly interesting is the distribution of the vowel transcribed with capital {E}. This vowel is identified much more frequently than the other vowels with capital letters. In particular, we find it in 46 tokens as a stressed and in 58 tokens as an unstressed vowel. Based on the charts (Figure 2), we observe that capital {E} is realized between [e] and [a] according to both the F1 and F2 values, which means that it is a vowel lower than [e] and more front than [a]. Finally, it seems that its distribution is quite similar in both charts.

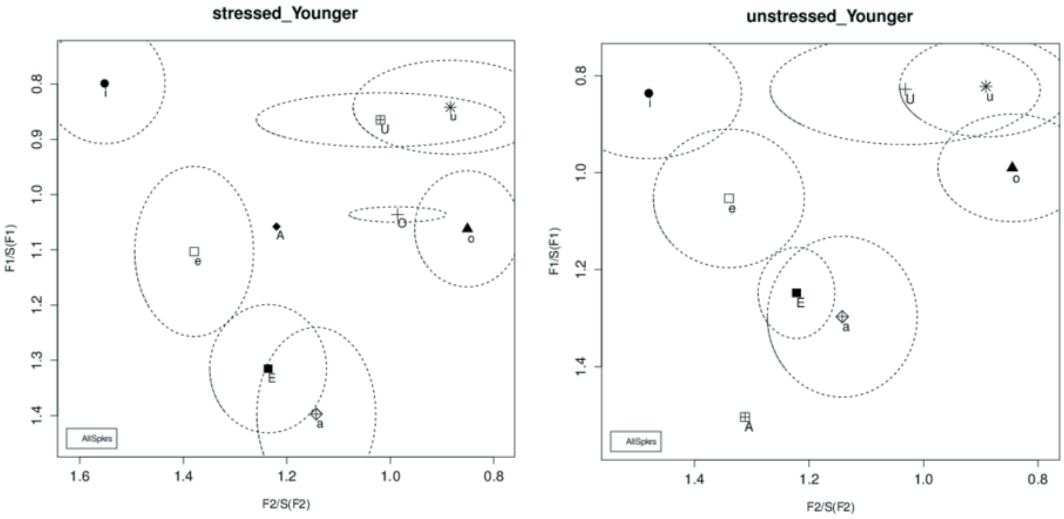

Figure 3 | *The stressed and unstressed vowels of younger males*

4.2. Younger informants

The results provided by the study of the speech of younger males indicate that there are some remarkable deviations from the vowel system of the elders. More specifically, we discovered that there are some differences in the distribution of the five small vowels {i, e, a, o, u}. It seems that these vowels create a smaller vowel spectrum than that of the elderly informants. Nevertheless, the stressed vowels are clearly distinct from each other once again, and the unstressed vowels are also closer to each other, with very small overlaps (between {i} and {e}, as well as between {o} and {u}), as can be seen in Figure 3.

Stressed				**Unstressed**			
Vowel	**F1**	**F2**	**Records found**	**Vowel**	**F1**	**F2**	**Records found**
{i}	0.799	1.552	226	{i}	0.836	1.480	465
{e}	1.103	1.379	187	{e}	1.053	1.340	258
{E}	1.315	1.236	48	{E}	1.248	1.222	48
{a}	1.397	1.143	238	{a}	1.297	1.142	622

{A}	1.058	1.220	1	{A}	1.504	1.312	1
{o}	1.062	0.851	160	{o}	0.990	0.845	172
{O}	1.036	0.986	2	{O}	-	-	-
{u}	0.842	0.884	64	{u}	0.822	0.891	238
{U}	0.865	1.019	4	{U}	0.828	1.032	2

Table 2 | The F1 and F2 values of the vowels

As to the sounds transcribed with capital letters, it seems that capital {I} is not realized by the younger generation at all. Capital {A} is found in only one stressed and one unstressed token, which means that we cannot take it into account. In addition, capital {O} appears in only two cases, again as a stressed vowel, and presents a different distribution of the previous vowel system of elderly adults, as it is not realized in a really back position, as noticed before. The vowel transcribed as capital {U} seems to have been reduced in the speech of younger males: from the 26 tokens found in the measurements of elderly speakers, we now have only 6 tokens. Moreover, it should be noted that the younger speakers realize this {U} vowel in a high back position.

Looking at the distribution of the capital vowel {E} in the vowel spectrum, it seems that it is still realized by younger people in a position similar to the elderly adults, that is lower than [e] and more front than [a], and also at a similar percentage rate: 48 tokens in stressed and 48 tokens in unstressed position. It is clear that this vowel is different from the five vowels found in SMG, and is used much more frequently than the other vowels transcribed with capital letters. Overall, the results of the present investigation demonstrate a clear numerical distinction between vowels that also exist in SMG and vowels that do not.

5. Discussion

To summarize the distribution of the vowels that the transcribers, as native speakers of the dialect, identified with capital letters, it is essential to discuss the cases one by one. Firstly, we have seen that capital {O} appears quite infrequently, as we found only two tokens in the speech of elderly males and two tokens in the speech of the younger ones. This vowel is realized as a really back [o] in the speech of the elderly, and as a not so back [o] in the speech of younger males. Nevertheless, this sound does not seem to

coincide with the rounded open-mid front vowel [œ] identified by Dawkins as a "modified" (1916: 39) and "soft" vowel (1916: 41). Therefore, the very few instances and the inconsistencies of their F1 and F2 values do not allow us to accept our transcribers' identification of {O} as a distinct sound.

As for capital {A}, we also have very few tokens and most of them (ten out of twelve) in the speech of elderly males. This vowel is realized as a really low [a], although it is produced within the realization area of the elderly's {A} in any case. In the speech of the younger males there is only one stressed and one unstressed token. Similarly, this sound does not seem to coincide with any of the older Cappadocian vowels. The fact that this vowel did not exist in the older Cappadocian system, combined with its extremely low frequency, does not allow us to accept it as a distinct sound in the Mišótika vowel system.

The high vowels described with capital {I} and {U} could easily refer to the older Cappadocian vowels [y], a high front rounded [i], and [ɯ], a high back unrounded [u] respectively, according to their F1 and F2 values. However, both of them seem to be in the process of elimination, as [ɯ] is reduced dramatically in the speech of the younger males, viz. from 26 tokens to just 6, whereas [y] does not appear at all.

On the other hand, our data show that the vowel transcribed with capital {E} presents a different pattern. First of all, it is not realized as the older Cappadocian [+round, -front] [œ], but as a [-round, +front] [æ]. Moreover, this vowel [æ] seems to appear systematically in the speech of both generations and in both stress conditions. In particular, when we studied the environments in which [æ] appears, we noticed that it appears mainly in the ultimate stressed syllable of disyllabic words, i.e. in the stressed syllable of an iambic foot. Sometimes, it is also found in the unstressed syllable of an iambic foot, but with the precondition that the same vowel [æ] appears in the stressed syllable of the same foot as well, probably as a result of regressive vowel harmony, as we can see in the examples below:[5]

1) [de'ræ] or [dæ'ræ] < Medieval Greek εδάρε "now"
2) [te'mær] or [tæ'mær] < Ancient Greek ήμέτερος "our"

5 It should be noted that this type of harmony (regressive) is different from the progressive vowel harmony found in Turkish and other Altaic languages, which applies to suffixes (see Archangeli & Pulleyblank 2007 on different types of harmony). The progressive vowel harmony of the Turkish type is found in Cappadocian as well (Janse 2009: 39f; 2017: §6.2.1.4.1). For other examples of regressive vowel harmony, traditionally called regressive vowel assimilation, in Cappadocian see Dawkins (1916: 64f.) and Janse (2017: §6.2.1.4).

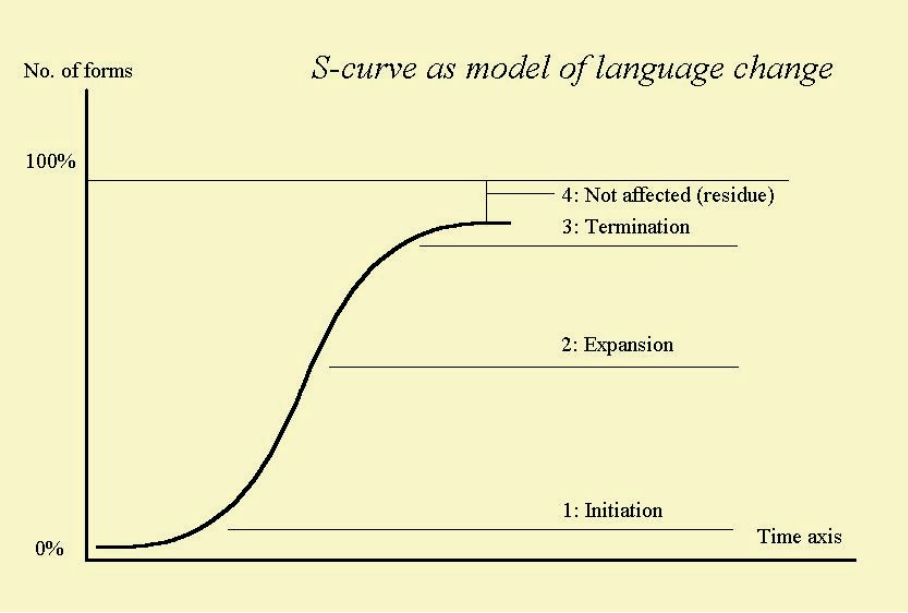

Figure 4 | *The graph of S-curve*[6]

3) [k^{h}e'lær] or [k^{h}æ'lær] < Medieval Greek κελάριν "rock-cut chamber, storehouse"
4) [se'vær] or [sæ'vær] < Turkish *sever* "time"

It seems that its realisation in the unstressed position was not obligatory, but optional, as a free variant of /e/, and only in the metrical environment previously described. Quantitavely speaking, the appearance of the [æ] variant amounts to 16% of the /e/ realization in the speech of the elderly males, and 18% of the /e/ realization in the speech of the younger males. What may be inferred from the absolute numbers and percentages, is that the vowel [æ] is either in the process of high reduction and possible loss or in the first stages of its appearance.

These processes could refer to the pattern which has been proposed to describe the process of linguistic variation and change, and it is presented by a graph (Figure 4) which is called 'S-curve'.

6 The graph was retrieved from: https://www.uni-due.de/SHE/SHE_Transmission.htm.

The vertical axis of the graph in Figure 4 shows the percentages of the new variant and the horizontal axis shows the time. It has been argued by Chambers & Trudgill (1998), among others, that when a new variant of a variable appears, its percentages are very low, and they increase very slowly – sometimes this increase can take several generations – until it reaches 20%-25% of the variable. By that time, the new variant is found first and foremost in specific lexical items, and not in every possible realization of the variable. At this point, an acceleration of the new variant's production is attested and in a very short period of time (in relation to the previous process) the new variant can reach 75%-80% of the entire variable. Consequently, when it reaches this specific point, it starts to reduce its speed, and it may take several generations again until the loss of the previous variant. Finally, the overall process takes the shape of an S-curve, which is how it got its name.

Returning now to the percentages of the vowel [æ], we note that its absolute numbers and percentages indicate that we are either at the left part of the S-curve, i.e. at the emergence of a new variant, or at the right part of the curve, that is at the reduction of an old one, but possibly just a few steps behind the other older Cappadocian vowels [y, œ, ɯ].

At this point, Dawkins' investigation is essential, as he conducted fieldwork in Cappadocia a century ago. What we want to highlight is that if this [æ] is in the first stages of reduction in the speech of younger males today, we should expect that a century ago this vowel would surely have appeared in high percentages, meaning that Dawkins should have noticed and described it. However, Dawkins does not mention it, although he acknowledges its existence in Pontic and Pharasiot (1916: 152-153).

The question that now arises is whether there is any chance that Dawkins may have noticed the existence of [æ] in older Cappadocian, but decided not to include it in his description. The answer may be positive, but only if we assume that he heard it just a few times and thought that it was incidental.[7] In this case, Dawkins may have heard the [æ] when it was at the very first stage of its appearance, in other words at the beginning of the S-curve, where the percentages are extremely low and the variant appears in a few very specific lexical items.

This hypothesis is in accordance with the first possibility mentioned above, that we are at the left part of the S-curve in present day, which means at the beginning of

7 In this respect, it is important to note that Kostakis (1977; 1990) mentions an occasional change {ε} > {ια} exemplified only by κελάρι > κιαλάρ(ι) (Kostakis 1990: 178, cf. 1977: 12, where it is interpreted as a borrowing from Turkish *kiler*). It should be noted that {ια} is the Greek transcription of [æ] traditionally used by non-linguistically trained native speakers, cf. κιαλάρια = κελάρια (Koimisoglou 2006: 210), σιαβιάρ [sæ'vær] (Kotsanidis 2006: 217).

a linguistic change. Consequently, the new variant [æ] is found in particular lexical items and assumed an additional part in the vowel system, viz. as an allophone of /e/ in very specific phonological/phonetic contexts, but it still has a small percentage of appearance, viz. less than 25%.

6. Closing remarks

Wrapping up the previous discussion, we hope to have shown that our data indicate that the vowel systems of the elderly and younger adults diverge from the older system described by Dawkins. In particular, the speech of both generations provide evidence for the existence of a new variant of the phonological unit /e/, i.e. the [-round, +front] vowel [æ], which seems to be in the first stages of increasing its frequency. Furthermore, this new variant appears in very specific metrical contexts, specifically as the stressed – and sometimes as the unstressed – vowel of an iambic foot in disyllabic words.

At the same time, the three vowels reported by Dawkins, which do not exist in SMG, are either lost (like the mid back rounded [œ] and the high front rounded [y]) or at the very last stage of elimination (like the high back unrounded [ɯ]). This loss can easily be interpreted as a levelling process towards a new koine[8], as Mišótika has been in contact with Modern Greek since the population exchange of the 1920s. We can perfectly well appreciate the pressure that the Cappadocians felt from the locals with whom they were in contact, and the severe stigma that any Turkish characteristics like the three 'Turkish' vowels carried for many decades. The result of this stigmatization was the loss of [y, œ, ɯ] through this levelling process, while the speakers of Mišótika tried to accommodate to the new linguistic environment.

To conclude, Mišótika in not a dead variety. There are young people who use it and recognize it as a distinct system, viz. Mišótika as opposed to SMG. Also, the variety that both elderly and younger speakers use is not identical with the variety that Dawkins described a century ago. Although there are small differences, at least in relation to the vowel system, between the two generations, what is really striking is the divergence between the contemporary vowel system and the older one described by Dawkins.

8 The koineization process has resulted in the creation of a new variety, which includes mixed features from the mutually comprehensive linguistic systems that have been in contact (cf., among many others, Trudgill 1986: 107; Hinskens 1992: 15).

References

Archangeli, Diana, and Pullyblank Douglas. 2007. "Harmony". In *The Cambridge Handbook of Phonology*, edited by Paul de Lacey, 353–378. Cambridge: Cambridge University Press.

Boersma, Paul, and David Weenink. 2013. *Praat: Doing Phonetics by Computer*. Version 5.3.51, retrieved June 2, 2013. www.praat.org.

Chambers, Jack K., and Peter Trudgill. 1998. *Dialectology*. 2nd ed. Cambridge: Cambridge University Press.

Dawkins, Richard M. 1916. *Modern Greek in Asia Minor: A Study of the Dialects of Silli, Cappadocia and Pharasa, with Grammar, Texts, Translations and Glossary*. Cambridge: Cambridge University Press.

Hinskens, Frans. 1992. "Dialect Levelling in Limburg: Structural and Sociolinguistic Aspects." PhD diss., University of Nijmegen.

Janse, Mark. 2009. "Greek-Turkish language contact in Asia Minor." *Études Helléniques / Hellenic Studies* 17:37–54.

Janse, Mark. 2017. "I Kappadokiki dialektos." In *Neoellinikes Dialektoi*, edited by Christos Tzitzilis. Thessaloniki: Aristotle University of Thessaloniki, Institouto Neoellinikon Spoudon (Idryma Manoli Triantafyllidi).

Koimisoglou, Symeon K. 2006. Misti Kappadokias. I Mani ton Ellinon tis Mikras Asias. Thessaloniki: ILP Productions.

Kostakis, Thanasis P. 1977. To Misti Kappadokias. Athens: Academy of Athens.

Kostakis, Thanasis P. 1991. "Paratirisis sti fonitiki tou mistiotikou Kappadokikou idiomatos." Lexikografikon Deltion 17:175–188.

Kotsanidis, Lazaros. 2006. To glossiko idioma tou Misti Kappadokias. Kilkis: Gnomi Kilkis-Peonias.

Thomas, Erik R., and Tyler Kendall. 2007. *NORM: The Vowel Normalization and Plotting Suite. ncslaap.lib.ncsu.edu/tools/norm.*

Trudgill, Peter. 1986. *Dialects in Contact*. New York: Blackwell.

Appendix

Elderly speakers			
Stressed			
Vowel	**Records found**	**Words**	**Meaning**
{I}	2	/mi'sir/ (1) /ɣil'tsi/ (1)	corn sweat
{E}	58	/de're/ (23) /te'mer/ (10) /te'ser/ (2) /ste'mer/ (1) /ke'ler/ (5) /me'sel/ (2) /te'mel/ (1) /se'ver/ (3) /de're/(4) /de'pe/ (3) /tu'ren/ (3) /ˈpendʒere/ (1)	now our yours yours rock-out chamber, storehouse fairytale the base of a house time creek hill train window
{A}	3	/fsax/ (1) /tsax/ (2)	child until
{O}	2	/'tsodi/ (1) /'skoʎja/ (1)	that time schools
{U}	14	/tu'tun/ (2) /xu'sum/ (3) /pa'bur/ (1) /gu'lus/ (1) /de'tsu/ (3) /epi'tsu/ (2) /detsu'zu/ (1) /de'tsurta/ (1)	tobacco relative ship wood there from there until there in that direction
Unstressed			

{I}	5	/mi'sir/ (1) /'ertni/ (2) /de'fteris/ (1) /ɣil'tsi/ (1)	corn to come Lefteris (name) sweat
{E}	46	/de're/ (15) /te'mer/ (4) /te'ser/ (2) /ste'mer/ (1) /ke'ler/ (3) /me'sel/ (2) /te'mel/ (1) /se'ver/ (1) /de're/ (4) /de'pe/ (3) /'pendʒere/ (1) /ture'nju/ (5) /de'tsu/ (3) /de'tsurta/ (1)	now our yours yours rock-out chamber, storehouse fairytale the base of a house time creek hill window train there in that direction
{A}	7	/da'vulja/ (4) /'sengra/ (2) /'mesa/ (1)	tabors then inside
{U}	12	/tu'tun/ (2) /xu'sum/ (3) /tu'ren/ (3) /gu'lus/ (1) /detsu'zu/ (1) /apu'ɣu/ (2)	tobacco relative train wood until there from here

Younger speakers			
Stressed			
Vowel	**Records found**	**Words**	**Meaning**
{E}	48	/de're/ (25) /te'mer/ (12) /te'ser/ (1) /ste'mer/ (5) /me'sel/ (1) /te'mel/ (2) /de'pe/ (2)	now our yours yours fairytale the base of a house hill
{A}	1	/tsax/ (1)	until

{O}	2	/ʻtsora/ (2)	then
{U}	4	/xu'sumja/ (1) /de'tsu/ (1) /epi'tsu/ (2)	relatives there from there
Unstressed			
{E}	48	/de're/ (25) /te'mer/ (12) /te'ser/ (1) /ste'mer/ (5) /me'sel/ (1) /te'mel/ (2) /de'pe/ (2)	now our yours yours fairytale the base of a house hill
{A}	1	/'sengra/ (1)	then
{U}	2	/xu'sumja/ (1) /tu'ren/ (1)	relatives train