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**Comparative Mathematical Models of Ethno Cultural Processes in
South Caucasus Societies**

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TABLE OF CONTENTS

Comparative Mathematical Models of Ethno Cultural Processes in South Caucasus Societies.	1
Abstract.....	2
Introduction: Historical background.....	2
The Problem	5
Data and Methods	5
1. Civilizational Factor in South Caucasus.....	6
Hypothesis	6
Results	6
Conclusions	9
2. South Caucasus Societies on the Scale of Traditionalism.....	10
Results	10
Conclusions	16
3. Communication Abilities in South Caucasus Societies.....	16
Civilizational areas' languages knowledge, preferences and trends	17
Computer communication skills.....	19
Conclusions:	22
References	23

Abstract

The article explored the issues of civilizational and cultural distances between the three main South Caucasian societies - Armenian, Georgian and Azerbaijanis, as well as the patterns and trends of their abilities to communicate with English language and Russian language civilizational areas. The analysis is made by multidimensional mathematical modeling of nationwide representative surveys in Armenia, Georgia and Azerbaijan. Factor analysis is used to reveal the civilizational factors conditioning the social distances perceptions. An index for measuring of behavioral traditionalism, as well as an index for measuring of societies' general communication ability with Russian language and English language areas are created and explored.

Introduction: Historical background

South Caucasus is a small but a rather complicated region. Nowadays the geographical and political notions coincide and denote the territory that occupied Armenia, Georgia and Azerbaijan. From the point of view of Historical Geography it was the North-East of the Front Asia. From civilizational point of view now it is the contact (or buffer) zone of Russian, Turkish and Iranian sub-civilizations.¹ But historically it had been the contact zone of various Eastern and Western civilizations. Here the influence of Eastern civilizations is continuous, as geographically South Caucasus is a part of Asia.² The Western civilizational influence in South Caucasus is found out from Ancient period (VIII-V centuries B.C.) with Greece colonization of Eastern shore of the Black Sea. The huge Western influence begins after Alexander conquest from IV century B.C. Afterward here consequently exist the contests of Roman and Iranian

Empires (II B.C. – IV A.D.), Byzantine and Iranian Empires (IV-VII), Byzantine Empire and Arab Caliphate (VII-X), Byzantine Empire and Turk Seljuk's (XI-XII). Direct Western influence was interrupted during XII-XVIII when Ottoman and Iranian Empires were dominating in South Caucasus. Eastern Christian influence recommenced from the just the beginning of XIX, when Russian Empire get over Caucasus. Turkish, Iranian and Russian States are competing in South Caucasus from XIX century and this competition is continuing up today. From the middle of XIX the direct and indirect Western civilizational influence recommenced and enlarged its scopes up to 1920, then direct influence is interrupted from 1921-1991 (when South Caucasus was included within the USSR) and reestablished from 1992 up today.

The three main ethnic groups of South Caucasus Armenians, Georgians and Azerbaijanis have essentially different ethno-genesis history as well as racial-linguistic and civilizational origin.

Armenian language is the unique member of separate Armenian group of Indo-European linguistic family. Within the Indo-European linguistic family the nearest to Armenian Group is considered the Iranian group. Georgian language belongs to Kartvelian Group of Caucasian linguistic family, which includes also Megrelian, Svan languages. Azerbaijani language belongs to Turkish Group of Altai linguistic family with Tatar and Bashkir languages.

Armenians and Georgians are of the first Christian nations. Christianity begins dissemination in Armenia and Georgia from the 1st century. They adopt Christianity as State Religion at the 4th century. On the other hand, Armenians belong to Armenian Apostolic Church, which is one of Eastern Monophysite Churches, but Georgian religion is one of the autocephal branches of Orthodox Church. Azerbaijanis belong to Shia' Islam. Both Armenians and Georgians have their unique alphabets from the 4th century. They translate Holy Bible on their languages at 4th century and it is significantly important that thereafter they conduct mass on their native languages.³

Georgians are autochthon ethnicity of this area having their origin entirely in South Caucasus from the II millennium B.C. Armenians are Middle East ethnos notwithstanding that in Political Sciences commonly they considered as a South Caucasian ethnos. Their ethno-genesis was take place in Armenian Plato⁴ (which North Eastern boundary is the Caucasus Minor) at XXVIII-V centuries B.C.⁵ Main ancestors of Azerbaijanis are Turkish tribes, which appear in South Caucasus from at XI – XIII centuries, with Seljuk invasions.

Armenians' and Georgians have ancient and strong national identity, at least from the V century, when their national alphabets, national languages and national literatures were created⁶. National States of Armenians and Georgians origin of from early historical phases promote the early and strong national identity formation of these nations. Georgian Kingdoms were established from the 8th century B.C. and they exist as independent or semi-independent up to 1800 when the last Georgian Kingdom was abolished by Russian Empire and Georgia was included in Russian Empire. Armenians Kingdoms are known from XXVIII century B.C.⁷ The last independent Armenian Kingdom on Armenian Plato was abolished at 11th century by Seljuk's' invasions. Several semi-independent Armenian Princedoms continue their existence. Princedoms of Artsakh (Kharabakh) in the North East Armenia exists up to 1805 when they voluntary enter the Russian Empire for liberation from Muslim Iranian domination. Long domination of Islamic States upon Armenia was an important factor for keeping consolidated the Armenians' national identity.

Ancestors of Azerbaijani nomadic and semi-nomadic Turkish language tribes live in vast areas of Northern part of Iranian Empire and bear huge Iranian influence. After inclusion of the North East part of South Caucasus in boundary of Russian Empire a definite part of these tribes were divided from the main conglomerate remained in Iran and their development in the boundaries of a civilization with relatively more developed industry begins. In Russian Empire State Documents these Turkish language tribes, which have no their own common ethnic name were called as Caucasian Muslims (compare with Bosnian Muslims) or Caucasian Tatars (derived from the name of the main Turkish language ethnic group in Russian Empire). Azerbaijani ethnic

identity formation begins from the end of XIX century with industrial development of Russia, when simultaneously Western nationalistic ideologies penetrate into Russian poly-ethnic society. The ideology of Turkish unity (Panturkizm) had its origin in Tatarstan and was extended through Turkish language areas of Russian Empire by different success. On the other hand, nationalistic ideas penetrate into urban strata of Turkish language Muslims of Eastern South Caucasus also by Turkish nationalistic movements from Ottoman Empire, especially during Young Turk Movement beginning and governance (the first decade of 20th century). Even in Azerbaijan Republic of 1919-1920 these ethnic groups were named as Muslims of Azerbaijan⁸. But effective nation building in Azerbaijan begins during Soviet period. This process was important for USSR because different Turkish language nations' existence was a factor for dissolution of Panturkism ideology in the vast Turkish language territories of the USSR. On the other hand, existence of Azerbaijanis of Soviet Azerbaijan was a huge political factor for USSR penetration into Muslim areas⁹, especially into Iran.¹⁰ Thus, ethno-genesis of Azerbaijanis is a relatively new process, which is continuing hitherto.

On the other hand, 800 years of living together in South Caucasus Armenians, Georgians and Azerbaijanis of course have different cultural interrelations. They interchange a lot of linguistic, lifestyle, habitat, music and cultural elements. In the places of mixed habitation representatives of these nations know the languages of each other. Sometimes they know several languages. Often symbiotic systems between representatives of these nations arose, such as periodical and lasting for long time exchanges of agriculture products between a settled rural society and a nomadic tribe, or close economic exchange relations between two families of various nationalities.

Evidently there were also collisions. Before Russian dominance when South Caucasus was under the rule of Muslim Empires the Muslim population had undoubted dominance upon Christian population, which is established by Islamic Regulations. Christian population was segregated and had inferior status. Periodically, the situation of Christians becomes unbearable. This deepened the estrangement of Christian and Muslim societies from each other and creates dual standards of relations. It is worthy to mention that Russian Empire regulations upon its subjects are unified irrelative to their religion.

From the end of 19th century when oil wells of Baku were revealed industrialization and urban development started. Urbanization brings to definite cultural unification of representatives of various nations.

During Soviet period there exists a huge unification pressure of communist ideology, as well as very intensive industrialization and urbanization of South Caucasus in whole. These processes were accompanied by Soviet policies of secularization, gender emancipation and all over literacy among all the nations. There were a huge propaganda of internationalism, prohibition of nationalistic ideologies and repressions of nationalists.

During post Soviet period the contradiction between the principles of Nations Self-Determination and Territorial Integrity revealed the deep civilizational, ethnic and historical layers of mutual hostility, intolerance and distrust. The group of ethnic wars started from the points where they were frost by Soviet Union.

Huge political pressure and cultural penetration of the West recommenced from 1990th. Inclusion of South Caucasian societies in the global information space, establishment of democratic governance institutions, civil society development and geographic mobility (into European countries and USA as tourists, commercial traveler and especially as students) begin creation of new generation with new values with priorities of Human Rights and liberty.

Thus, South Caucasus becomes an area where various global and local superpowers promote their values, interests and policies.

The Problem

The brief historical review prompt that complete description and comparison of South Caucasus societies should be an extremely complex and multi-layer procedure. There exist numerous factors, which influences are contradictive and/or ambivalent. On the other hand, the importance of the South Caucasian region for Middle East and global developments make crucial the understanding of modern state and the generalized trends of mutual perceptions and objective differences between these nations. So, in order to have a skeleton for orientation in these complex problems there is a need of an adequate general description and comparison of South Caucasus societies, at list in some general aspects.

In the presented article an attempt of rather generalized description and comparison of South Caucasian societies has done. The main problems of the article are: (1) how “near” or “far” from each other are the three main nations of South Caucasus? And (2) are increasing or decreasing the ethnic-cultural distances between them?

The problem is discussed in three aspects. The first aspect is the following: If it will be possible to substantiate that the mutual perceptions of the three nations are conditioned by factors of their civilizational belonging, then South Caucasus should be considered not as an entire region, but rather as a civilizational break. In this case the peacemaking and peacekeeping policies and geopolitical configurations must reflect that fact. So, the first research problem is: are civilizational factors existing, which conditioned the mutual perceptions of Armenians, Georgians and Azerbaijanis?

The second aspect is: how near or far are these societies in everyday life and traditions? If the distances are not very big and the trends of these distances’ changes are decreasing them, then time and existing realities are favorable factors for peace making and peacekeeping. If the distances are big and increasing, then the problems of peace making and peacekeeping are redoubling upon the time. Hence, appropriate policies should be developed and implemented. So, the second research problem is: to create a measure of cultural distance between the three nations (by use of available data) and use it for determination of distances between them and the trends of those distances.

The third aspect is: are there any essential factors, which draw together the distances between South Caucasian societies. If yes, then, which are them and how to manage them?

Data and Methods

As the distances between entire societies are sought, then the appropriate data for research should be a nationwide representative survey data in order to have opportunity to generalize the results on the whole societies. The only available survey data open for all scientists, which contain appropriate information for investigation of mentioned problem are the databases CRRC “Data Initiative 2004-2007”¹. In this article data of CRRC DI 2007 were used. Data are collected in Armenia, Georgia and Azerbaijan by the same methodology and are representative nationwide. The sample size in Armenia is 2,457 respondents, in Georgia – 3,306, and in Azerbaijan – 2,148.²

For seeking of civilizational factors of mutual perceptions between Armenians, Georgians and Azerbaijanis the factor analysis of social distances (measured by Boghardus scale of social

¹ The database is available at <http://www.crrc.am>. CRRC is a network of resource, research and training centers established in the capital cities of Armenia, Azerbaijan and Georgia with the goal of strengthening social science research and public policy analysis in the South Caucasus. CRRC is a partnership between the Carnegie Corporation of New York and the Eurasia Partnership Foundation (EPF).

² Sampling methodology, as well as the questionnaires are available on the www.crrc.am

distances) between these nations were used. The problem is examined in the chapter: 1. Civilizational Factor in South Caucasus

For measuring of cultural distances between these nations a summative Index of Traditionalism is created by examining of acceptability of 6 behavioral elements in everyday life and sexual behavior by the representatives of each society. The problem is examined in the chapter: 2. South Caucasus Societies on the Scale of Traditionalism.

During the complex exploratory analysis of CRRC 2007 DI database, was revealed that the communication abilities of a person are correlated with increase of tolerance and decrease of traditionalism (in the sense of the term used in this article). So a summative Index of General Ability of Communication is created and analyzed for understanding the trends of that notion. This issue is considered in chapter: 3. Communication Abilities in South Caucasus Societies.

1. Civilizational Factor in South Caucasus

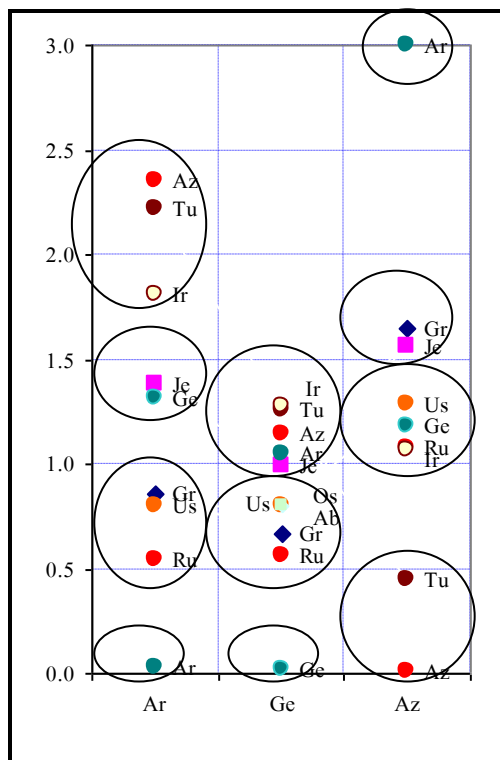
Based on the first aspect of the problems, in order to reveal the civilizational factors conditioning the mutual comprehension of the South Caucasus nations the following hypothesis is stated.

Hypothesis: The existence of a civilizational factor is identified by two criteria. If in the perceptions of the representatives of a given nation a group of nations belongs to the same civilizational area, then their social distances for the given nation:

1. Should be near, and simultaneously,
2. Should be positively correlated.

Results: The social distances scores of 9 nations (11 for Georgians) in perceptions of Armenians, Georgians and Azerbaijanis are presented in Figure 1.

Figure 1 Social distances perceptions of Armenians, Georgians and Azerbaijanis towards various nations.

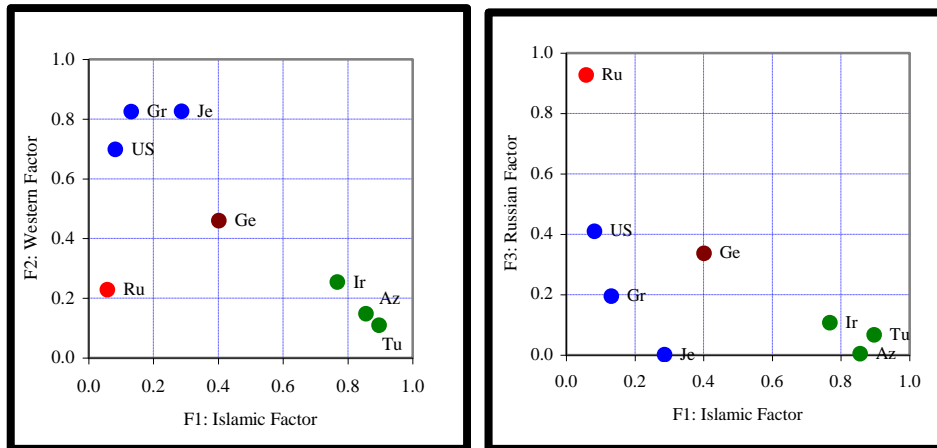


On the each column of the figure the social distances perceptions by the Armenians, Georgians and Azerbaijanis towards other nations are placed. The pattern of distances shows that the first consideration is true. Particularly, for Armenians and Georgians all the Islamic nations are positioned close to each other and on the furthest distance. On the other hand, the Turks are the

closest nation in Azerbaijani perceptions. For Armenians and Georgians groups of Christian nations are appeared. Similar group appeared also for Azerbaijanis, but Iranians are also on the same distance. This fact has a simple explanation. Social distance is a one-dimension construct; hence it is possible that nation's perceptions of which are multi-dimensional has the same projection on the sole dimension.³

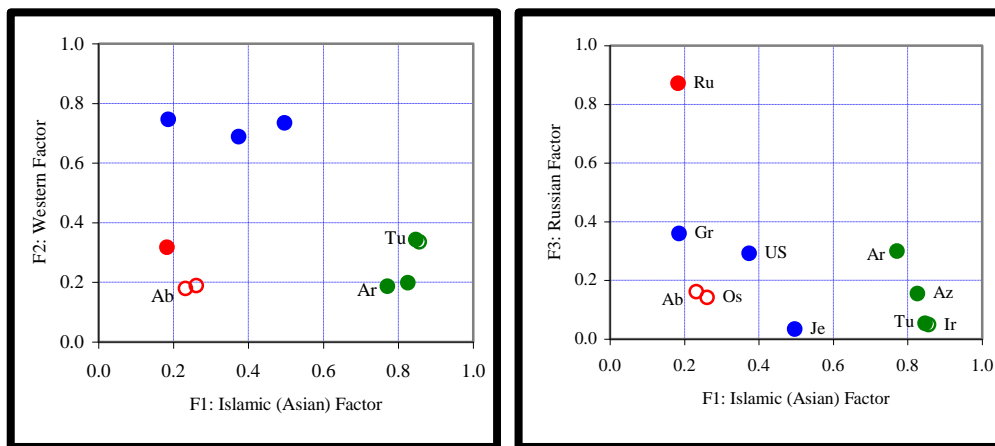
The factor spaces of Armenians, Georgians and Azerbaijanis are correspondingly on the Figures 2-4. The first two factors are the same for each of the nations: *F1: Islamic Factor* and *F2: Western Factor*. The third Factor *F3: Russian Factor* exists only for the Armenians and Georgians. The *F4: Caucasian Nations Factor* exists only for Georgians.

Figure 2 Factor spaces of Armenians perceptions of social distances.

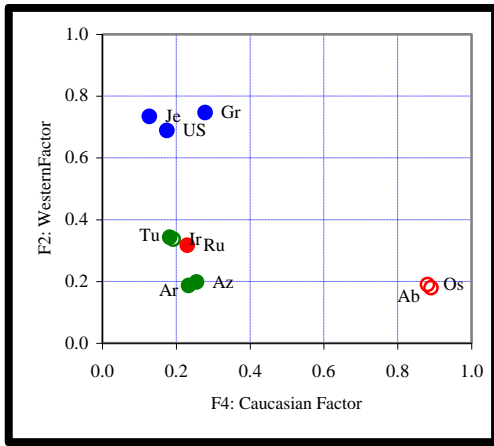


3 Factors explain the 72.5% of total variance.

Figure 3 Factor spaces of Georgians perceptions of social distances

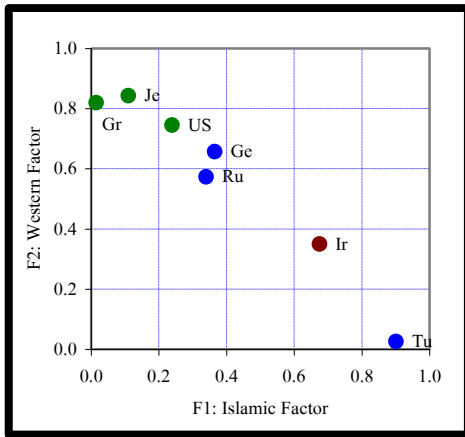


³ This is the cause that multi-dimensional methods are appropriate for adequate analysis of the problem.



4 Factors explain the 82.4% of total variance.

Figure 4 Factor spaces of Azerbaijanis perceptions of social distances



2 factors explain the 62.9% of total variance

The Factor models have their peculiarities.

Georgians are vaguely associated with each of the three factor axes in the Factor Model of Armenians. On the other hand, on *Figure 1* the Georgians' distance in Armenians' perceptions are greater than the distances of Russians, Americans and Greeks and are located in the third by remoteness from Armenians group.

In the perceptions of Georgians, Armenians are in the *F1: Islamic Factor*. This is the reason that for the Georgians this Factor is named the *F2: Asian Factor*. Simultaneously, on *Figure 1*, in the perceptions of Georgians, the Armenians are in the farthest group of Islamic nations. In perceptions of Georgians, the Abkhazians and Ossetins are "similar" nations, but they are in longer distance than the Russians and Greeks.

F1: "Islamic Factor" for the Azerbaijanis is more of "*Turkish-Islamic*" than purely "*Islamic*". On the other hand, the factor loadings of the non-Islamic nations on the axes *F1: "Islamic Factor"*, are increasing concurrently with decrease of their factor loadings on the axes *F2: "Western Factor"* and the sequence of nations on the axes *F1* is practically similar to the same sequence on the *Figure 1*. Armenians are absent in the Azerbaijanis' factor model, because the variance of Armenians' social distances perception by Azerbaijanis is practically 0. Social distances of Russians and Georgians in perceptions of Azerbaijanis and their positioning in the Azerbaijanis factor space are practically similar. There is no "obvious" prevalence of one upon the other.

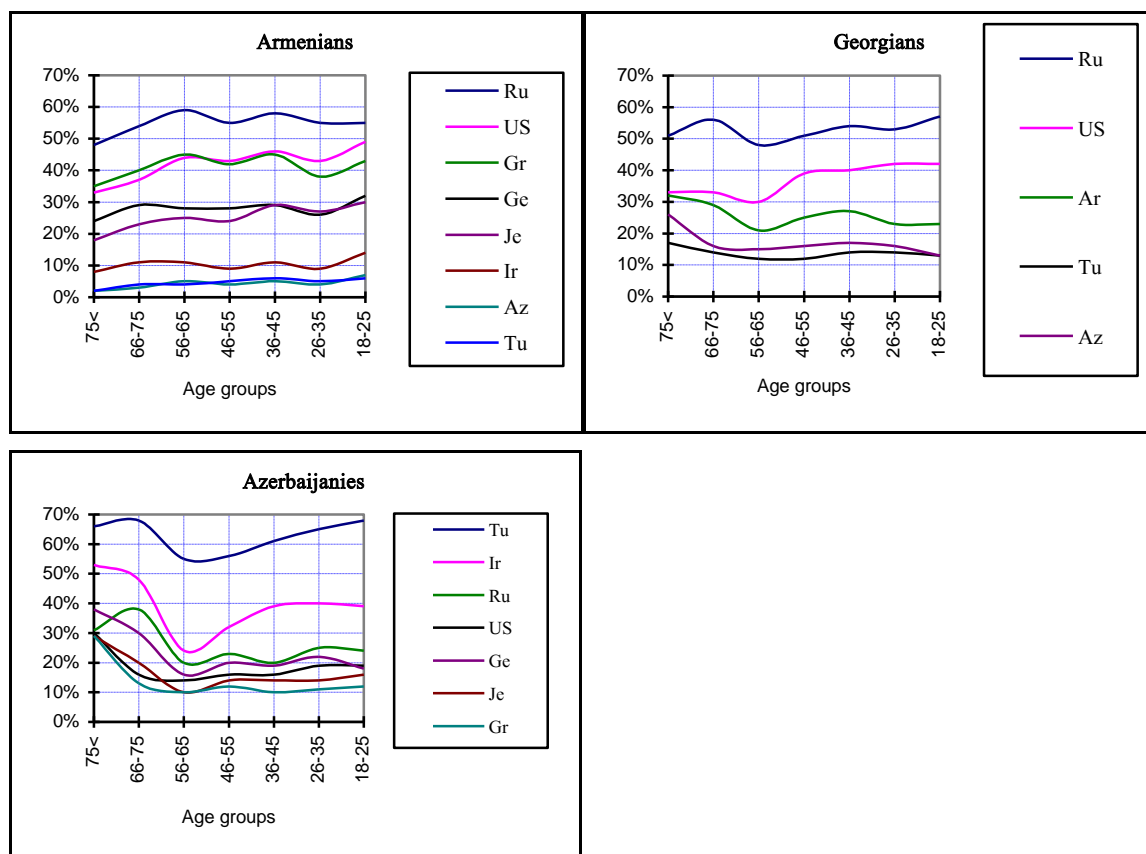
The temporal trends of various nations' social distance perceptions by Armenians, Georgians and Azerbaijanis are represented by the level of permissibility of marriage, because these trends have essential nonlinearities, which are graded in the result of factor analysis. *Figure 5* shows the

levels of marriage permissibility by Armenians, Georgians and Azerbaijanis to various nations in 10-year range age-groups.

The data demonstrate that the general trend among Armenians is the increase of tolerance. The most intensive rise of tolerance is in the youngest age group, including tolerance Turks and Azerbaijanis. In the two youngest age groups of Georgians a rise of tolerance towards Russians and Americans take place and decrease of tolerance towards Armenians, Azerbaijanis and Turks (nations of Eastern Factor) is observed. Starting from 56-65 year age group, rise of tolerance towards Turks and Iranians is observed among Azerbaijanis, but in the two youngest age groups the rise of tolerance towards Iranians stops. At the same time a trend of decrease of tolerance towards Georgians exists.

However, it must be mentioned that the observed trends do not cause structural changes in the nations' perceptions patterns (the graphs of the trends do not intersect).

Figure 5 Marriage permissibility levels with various nations for age groups of Armenians, Georgians and Azerbaijanis.



An interesting feature is observed among the 56-65 age groups, who are the young people of the “Khrushchev thaw” of early 1960th, when a general rise of nationalism is observed in many nations of the USSR. Among Armenians this period of rise of nationalism is paralleled by increase of tolerance towards other nations, but among Georgians and, especially Azerbaijanis, it is the opposite - a sharp decrease of tolerance is observed.

Conclusions:

Based on the above displayed results the following conclusions could be done:

1. From the point of civilizational membership, the modern Southern Caucasus is a “**horn area**”.

2. The three main nations of the Southern Caucasus have different civilizational paradigms. Armenians and Georgians are disposed to perceive themselves rather as **isolated ethnic-cultural commonalities** that have no intimate sense of commonality with any civilizational area. Among Azerbaijanis the sense of belonging to Turkish **sub-civilization** exists, as well as a definite sense of belonging to Islamic civilization.
3. In the exercise we presented above, “**Caucasian Identity**” is **not detected** in the mutual ethnic perceptions of the three main South Caucasian nations, and there are no trends for its formation.
4. Meanwhile, among Armenians and Georgians, a slight sense of belonging to previous Soviet and modern Russian civilizational area exists.
5. In Azerbaijanis’ perceptions all the examined non-Islamic nations are grouped in a single group, but a slight prevalence of Russians and Georgians exists.
6. Among Armenian young generation ethnic tolerance is rising. Among young generation of Georgians the tolerance toward the “East”, including Armenians and Azerbaijanis, is decreasing. The mainstream trend in the Azerbaijanis’ perception is towards the Turkish sub-civilizational area.
7. Apparently, in the context of the represented findings about Armenians, taking into consideration the cultural studies, which show the **continuous development** of Armenian culture during thousands of years as an **open cultural system**¹¹, as well as the new factors conditioned by existence of Armenian modern independent nation-state, Toynbee’s concept of “fossilized relics” with regard to Armenians¹² may be recalled and revised.

2. South Caucasus Societies on the Scale of Traditionalism

CRRC 2007 DI database contained a set of questions about everyday and sexual behavior:

“Sometimes people are considered too young to do or experience certain things... Could you please tell me, from what age do you think it is acceptable for a man/woman to:

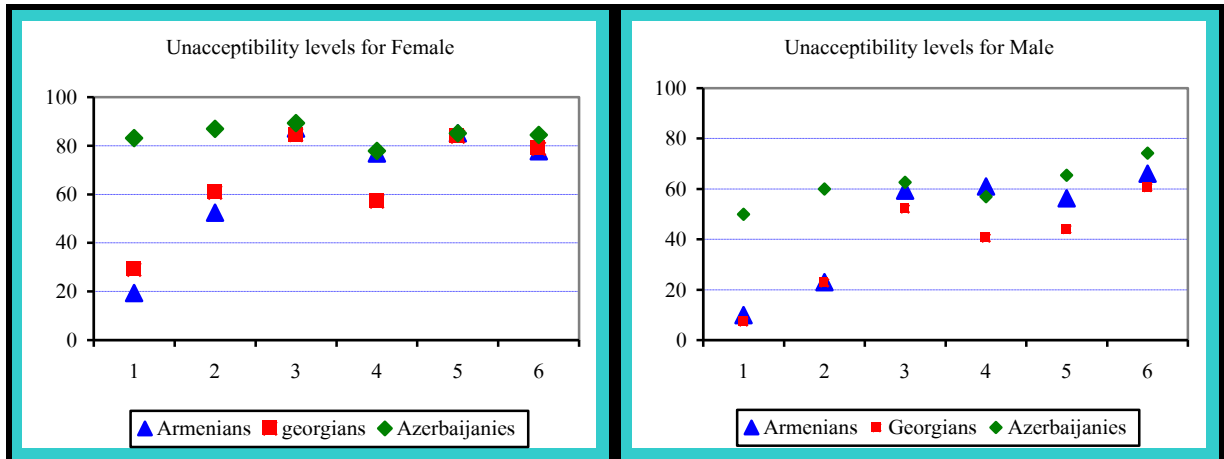
1. Drink light alcohol (wine, champagne, beer);
2. Drink strong alcohol (vodka, brandy);
3. Smoke tobacco;
4. Live separately from parents before marriage;
5. Have sexual relations before marriage;
6. Cohabit with a person of the opposite sex without marriage.

It is obvious that the first three behavioral items describe the everyday behavior and the last three items describe sexual behavior. About all the six items could say that acceptability of an item in younger age indicate rather liberal attitude towards behavior. Hence, the higher the level of unacceptability of each behavioral item in the society, the higher could be considered the level of traditionalism in the society.

Results: The exploratory analysis of these variables shows that the principal acceptability of each behavioral item is more informative than the examination of the age from which the specific behavioral item is acceptable. So the initial variables were recoded as bivariate variables, where principal unacceptability of the item (not acceptable from any age) is coded as “1” and principal acceptability (the item is acceptable from a specific age) is coded as “0”.

The levels of unacceptability of each behavioral item for man and woman are given on the figure Figure 6.

Figure 6. Unacceptability levels of behavioral items fro male and female in South Caucasus societies.



1. Drink light alcohol (wine, champagne, beer)
2. Drink strong alcohol (vodka, brandy)
3. Smoke tobacco
4. Live separately from parents before marriage
5. Have sexual relations before marriage
6. Cohabit with a person of the opposite sex without marriage

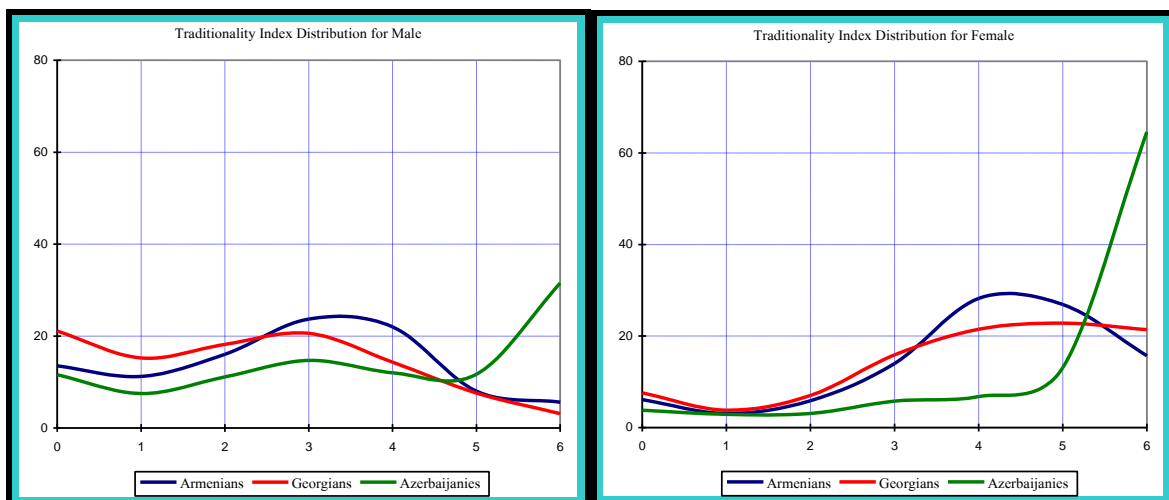
As it is evident from the patterns on the figures, the most traditionalist society is Azerbaijanis society; the most liberal is Georgian society and Armenians are amidst of them. Traditionalism refers more to woman behavior than for man behavior. The main differences in the societies are upon everyday behavior: smoking, drinking light alcohol. Attitudes towards drinking of strong alcohol are highly unacceptable for all the three societies. The most unacceptable items are the liberty of sexual behavior for woman: “to have sexual relations before marriage” and “to cohabit with a person of the opposite sex without marriage”. In Georgian society an item of sexual liberty for both man and woman: “to live separately from parents before marriage”, is the main item of difference between Georgian society and Armenian and Azerbaijanis societies on the other hand.

For a more comprehensive comparison of societies in behavioral context and for investigation of its trends an **Index of Traditionalism (IT)** is constructed as a summative index of the number of behavioral items unacceptable in all ages. The index is constructed separately for attitudes towards man and woman behavior.

$$IT = \text{SUM (amount of items unacceptable from any age)}$$

It is clear that the range of the index is from 0 – the most liberal case, when all the behavioral items are acceptable from a specific age, up to 6 – the most traditionalist case, when all the behavioral item are fundamentally un acceptable for any age. The distribution of IT for man and woman in Armenian, Georgian and Azerbaijanis societies are shown on the Figure 7.

Figure 7. Index of Traditionalism for man and woman in South Caucasus Societies.



By examination of the distributions on the figure the main and in essence the **qualitative differences** between Armenian and Georgian societies and, on the other hand, Azerbaijani society could be revealed. There are clearly visible splashes on the maximum possible value of IT (value 6) on distributions for Azerbaijani society, both for man and woman. 32% of Azerbaijani have the maximum value of IT towards man behavior, in opposite; the size of the same layer of society is only 5.6% in Armenia and 3.1% in Georgia. This difference is more obvious for IT towards woman behavior. 65% of Azerbaijani society has the maximum value of IT towards woman behavior, in Armenia the size of this social layer is 16% and in Georgia 21%. One could contend that the very high traditionalism towards woman behavior in Azerbaijan society, is the projection of Islamic civilizational belonging of Azerbaijani society on the scale of traditionalism (in the defined in this article notion).

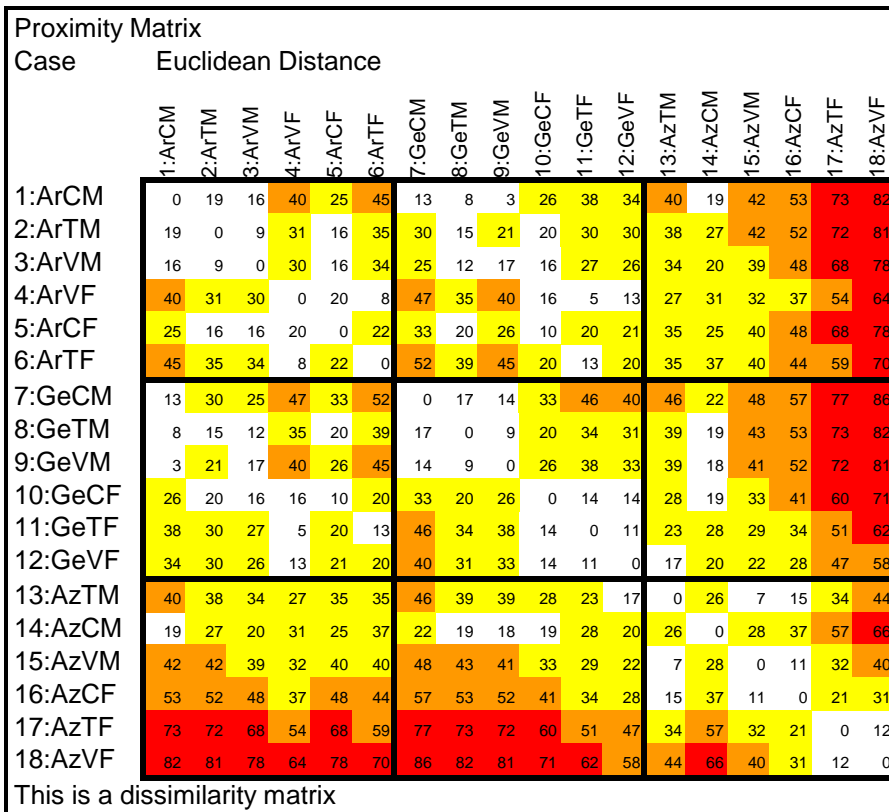
It is worthy to mention that in all three societies there are also little splashes on the list values of IT. In Azerbaijani society 11.6% of population has minimum value of IT (value 0) towards man behavior. In Armenia the size of this social layer is 13.5% and in Georgia – 21.1%. For IT towards woman behavior the sizes of the most liberal layers are accordingly 3.8%, 6.1% and 7.1% in Azerbaijan, Armenia and Georgia.

There are significant differences between IT distributions in various types of settlements. The IT distributions are examined in the three types of settlement – capitals, towns (excluded capitals) and villages. 9 distributions for IT towards man behavior and 9 distributions towards woman behavior, total 18 distributions are examined. To make easy the comprehension and comparison of differences between these distributions an 18 x 18 matrix of distances between each pair of distributions are calculated (Figure 8). The distance between two distributions is defined as:

$$D(f, g) = \frac{1}{\sqrt{2}} \sqrt{\sum_{i=0}^6 (f_i - g_i)^2}, \quad (1)$$

Where, f_i and g_i – are the proportion (in percents) of i-th discrete of distributions. $D(f, g)$ – is the distance between the distributions f and g . The maximum value of $D(f, g)$ is 100 and the minimum value is 0.

Figure 8. Matrix of distances between Indexes of Traditionalism by society, settlement type and gender.



Ethnicity:
 Ar - Armenian
 Ge - Georgian
 Az - Azerbaijani

Settlement Type:
 C - Capital
 T - Town
 V - Village

Gender:
 M - Male
 F - Female

The coding of abbreviations on the matrix: first 2 symbols mean the society, the third symbol mean settlement type and the fourth symbol mean gender.

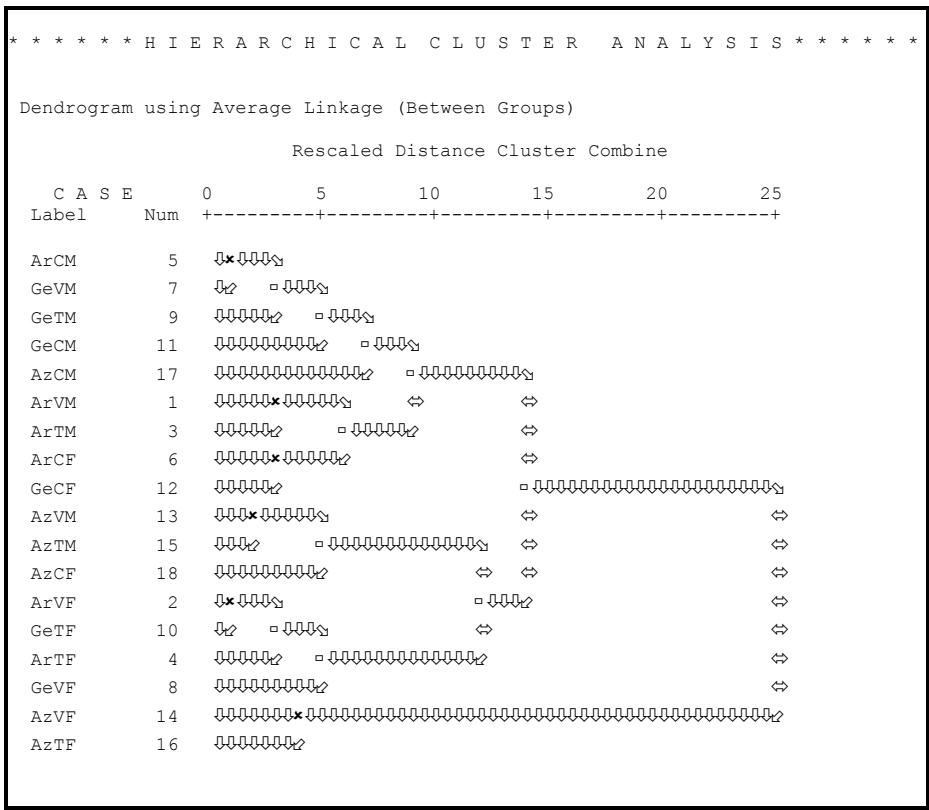
The matrix is symmetric. On the matrix darker color of cell corresponds to a larger distance between the two according distributions. The distances between two distributions are given in the cells. The main 18 x 18 matrix is divided by bold borders into 9 sub-sectors, each of which have dimension 6 x 6. The sub-matrices on the main diagonal of the main matrix represent the distances within a society. The non-diagonal 6 x 6 sub-matrices represent the distances between distributions of various societies.

Examination of the matrix and its sub-matrices bring to the following conclusions:

1. The Armenian and Georgian societies are closer to each other in the context of distances between various distributions of IT, as there are less “dark” cells in the sub-matrix on the cross of second row and first column. And Azerbaijani society is further from both Armenian and Georgian societies (the first two sum-matrices on the bottom row of the main matrix have many dark cells).
2. The IT distributions in Armenia and Georgia are closer to each other than in Azerbaijan society, which mean that Armenian and Georgian societies are more homogenous in the context of IT than the Azerbaijani society.

Cluster analysis of the 18 distributions makes easy their classification (the dendrogram of cluster analysis is shown on the Figure 9). Five clusters are defined. Further the clusters are given by the increase of IT.

Figure 9



The first group consists of TI distributions in all the three capitals towards man behavior and TI distributions towards man behavior in Georgian towns and villages. This is the most liberal group.

The second group consists of TI distributions towards woman behavior in capitals of Armenia and Georgia and the TI distributions towards man behavior in Armenian towns and villages.

The third group consists of TI distributions towards man behavior in Azerbaijani towns and villages and towards woman behavior in Azerbaijani capital.

The fourth group consists of TI distributions towards woman behavior in Armenian and Georgian villages.

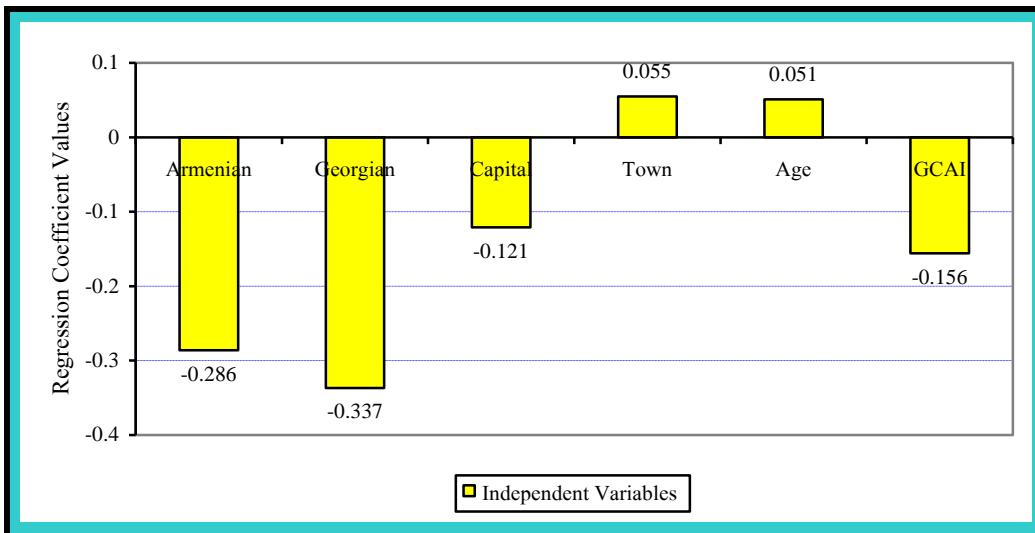
And the fifth group consists of TI distributions towards woman behavior in Azerbaijani towns and villages. This is the group with the biggest IT.

Thus, empirical grouping also shows that Armenian and Georgian societies are closer to each other in the sense of IT distributions and, simultaneously, their qualitative difference from the Azerbaijani society.

As the differences between various IT distributions are more essential towards woman behavior, the regression model of IT towards woman behavior is constructed (

Figure 10).

Figure 10. Traditionalism Index towards Female Behavior Regression Model



The model is constructed by considering the South Caucasus as an entity (that is on the whole CRRC 2007 database). Dependent variable is IT towards woman behavior.

The standardized coefficients are presented.

$R^2 = 0.18$, the model explained the 18% of dependent variable variance.

Independent variables:

Variable "Country": Nominal variable. Values: "Armenia", "Georgia", "Azerbaijan". In the model this variable is represented by three Dummies.

Variable "Armenia". Value = 1, if respondent live in Armenia, consider himself as Armenian and considered himself as belonging to Armenian Apostolic Church, else Value = 0.

Variable "Georgia". Value = 1, if respondent live in Georgia, consider himself as Georgian and considered himself as belonging to Georgian Orthodox Church, else Value = 0.

Variable "Azerbaijan". Value = 1, if respondent live in Azerbaijan, consider himself as Azerbaijani and considered himself as belonging to Islam, else Value = 0.

Variables "Armenia" and "Georgia" are included in the model. The base of the model is "Azerbaijan".

Variable "Settlement Type": Nominal Variable. Values: "Capital", "Town", "Village". In the model this variable is represented by three Dummies.

Variable "Capital". Value = 1, if respondent live in Yerevan or Tbilisi or Baku, else = 0.

Variable "Town". Value = 1, if respondent live in town, else = 0.

Variable "Village". Value = 1, if respondent live in village, else = 0.

Variables "Capital" and "Town" are included in model. The base of the model is "Village".

GCAI: General Communication Ability Index. It is a summative index and constructed by the variables "Knowledge of Russian language", "Knowledge of English language", "Knowledge of other language", "Knowledge of MS Office Package", "Knowledge of a specialized computer software", "Knowledge of Internet and E-mail". Index is equal to the number of those abilities, which knowledge by the respondent is on Medium or Advanced level.

The base of the model is "Azerbaijani" "Village".

The negative sign of regression coefficient means that increase of the corresponding variable bring to decrease of IT.

Some other socio-economic variables (education, welfare, gender⁴) also are examined for inclusion into the mode, but the most economic and, simultaneously adequate (with high R^2) model is the one showed on the figure.

The coefficients of the model show that the main part of IT variance in South Caucasus, as an entity, are included in the fact of belonging to one of the three main societies. But, on the other hand, this fact is reflecting the civilizational belonging of each of societies. Other variables are much weaker. The second factor is sub-cultural belonging, which is contained in the variable: "Type of settlement". As it is shown above, in cluster analysis, only the capital sub-culture in Azerbaijanis society come near to Armenian and Georgian societies sub-cultures, but even in that cases they are more traditionalistic.

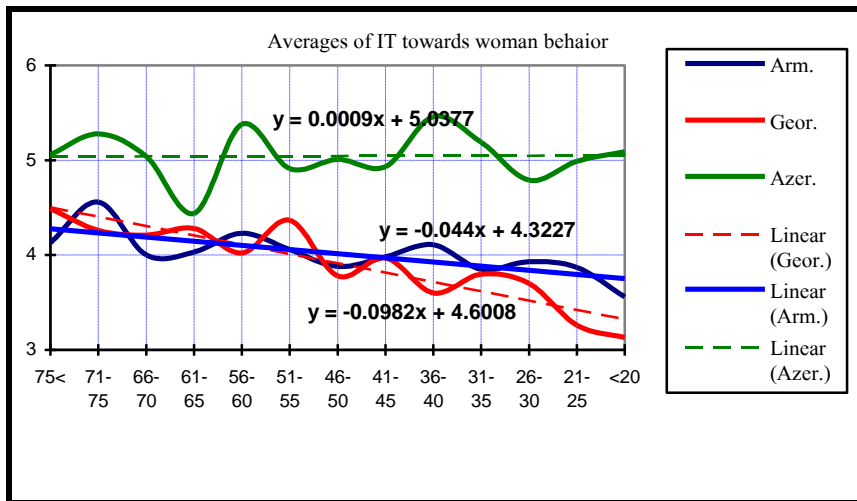
But there is a third factor, which is acting all over the South Caucasus, so called "General Communication Ability Index" (GCAI), which enforce the decrease of traditionalism. This factor will be analyzed in the next chapter. GCAI shows the abilities of a person to communicate with

⁴ These variables become meaningful when each society is analyzed separately.

areas out of the South Caucasus and consists of the language knowledge and computer communication skills.

In order to reveal the trends of traditionalism changes in each of the societies, the averages of IT towards woman behavior by age groups are examined Figure 11.

Figure 11. Averages of Index of Traditionalism by age groups in Armenia, Georgia and Azerbaijan



If the age groups are considered as a proxy of time then the figures prompt that traditionalism in Azerbaijan society in the whole, during the “decades”, is remaining constant. For example the average of IT for the youngest and oldest groups in Azerbaijanis society is the same. But in Georgia and Armenia it is decreasing. Hence, among other equal conditions, one can affirm that the differences between Azerbaijanis society on the one hand and Armenian and Georgian societies, on the other hand, in the aspect of traditionalism, will increase.

Conclusions:

The main conclusions of this chapter are:

1. The civilizational belonging of Armenian, Georgian and Azerbaijanis societies are reflected on their everyday and sexual behavior. There is a qualitative difference between Islamic-origin Azerbaijanis society and Armenian and Georgian societies, on the other hand.
2. This differences trend to become larger over the time.
3. Armenian and Georgian societies, in the sense of traditionalism, are more homogenous. The differences in traditionalism in capital and province are less than in Azerbaijanis society, where the difference between capital and province is large enough. The latest could be interpreted that in Azerbaijanis capital a “sub-civilizational break” exists, which divide the society.
4. Increase of general communication abilities with Western and Russian civilizational areas decrease traditionalism level in South Caucasus.

3. Communication Abilities in South Caucasus Societies

Beside the fact revealed in chapter 2, that communication ability promotes liberalization of behavior norms in the societies, these abilities are also important for understanding of the integrative trends in South Caucasus.

Nowadays Western and Russian civilizational areas are the two main competing subjects in South Caucasus as a whole. On the other hand, they are also the two main attractive areas competing in the people attitudes.⁵ One of the main factors, which condition the integrative power and opportunities of regions into a greater area, is language, as the main communication tool. Common civilizational area is impossible without common language. The second huge integrative factor in modern world is ability to communicate by computers, including internet and other data exchange technologies.

In CRRC 2007 DI there are some variables, which allow analyzing the communication factors state and trends in South Caucasus societies.

The questionnaire of CRRC 2007 DI includes a question: "... please tell me, which of these levels best describes your ability in the following: 1. Russian, 2. English, 3. other foreign language (except English and Russian), 4. Computer MS Office programs, *excluding* games, 5. Computer specialized professional programs, excluding Microsoft Office programs, 6. Internet and/or e-mail knowledge."

The measuring scale is: 1. "No basic knowledge", 2. "Beginner, 3. Intermediate", 4. Advanced".

The second question is: "Which foreign language, if any, do you think should be mandatory in secondary schools of /country/? If you think of more than one foreign language should be mandatory, please tell me which one should be of primary importance for schoolchildren in /country/." The choices are: 1. No foreign language should be mandatory, 2. English, 3. Russian, 4. Turkish, 5. other foreign language.

This group of questions allows investigating the following problems:

- Description of the communication abilities of Armenian, Georgian and Azerbaijanis societies?
- Attitudes existing in South Caucasus societies towards English language and Russian language and other cultural areas.
- Situation of modern communication skills in Armenian, Georgian and Azerbaijanis societies.
- Trends of communication skills in Armenian, Georgian and Azerbaijani societies?

Civilizational areas' languages knowledge, preferences and trends

The pattern of importance of various languages is given on the Figure 12. The most of the people in the South Caucasus societies (92-97%) understand that knowledge of language of a big civilizational (or geopolitical, or economical⁶) area is so necessary for them that the appropriate language knowledge should be mandatory in the schools.

The most of respondents (56-70%) think that English language should be mandatory in secondary schools, but only 17-35% thinks like this about Russian language.⁷ On the other hand,

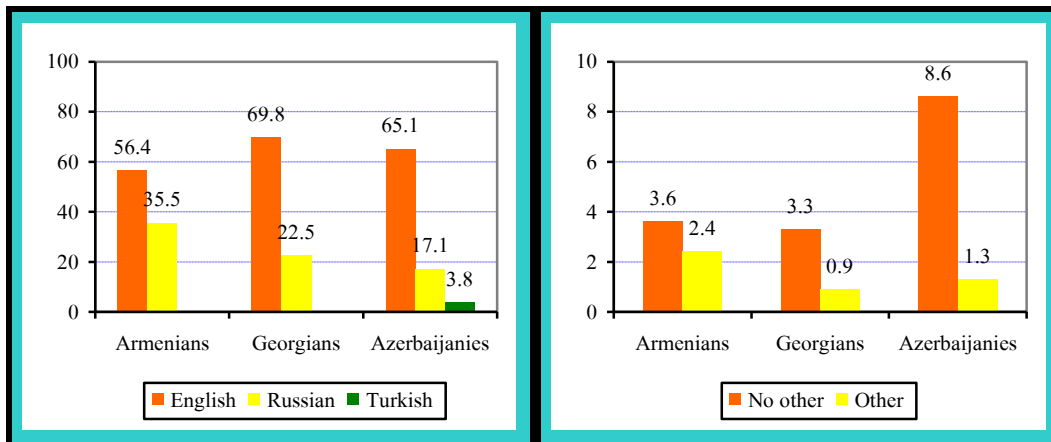
⁵ As it is showed in chapter 1, in Azerbaijanis society Turkey is considered as a congener area.

⁶ Maybe economical reasons are the most essential for societies with high poverty level and unstable economic situation of the most of population, where a significant part of households incomes are the privet money transfers of work migrants and where a significant part of population want temporarily or forever to emigrate from the country.

⁷ The results are gain when respondents were obliged to choose only one language. In the case of multiple-choice the proportion of Russian language will be higher.

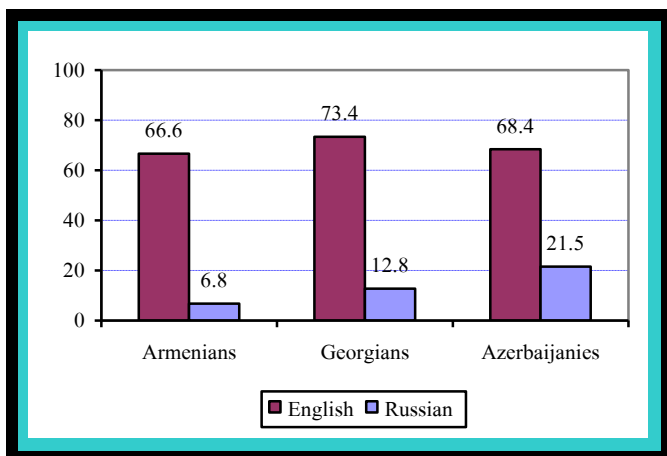
it is hard to interpret why Turkish language have so little percent? Is it because Azerbaijanis do not percept Turkish language as a foreign language, or there are other significant reasons?

Figure 12. Which foreign language, if any, do you think should be mandatory in secondary schools of /country/?



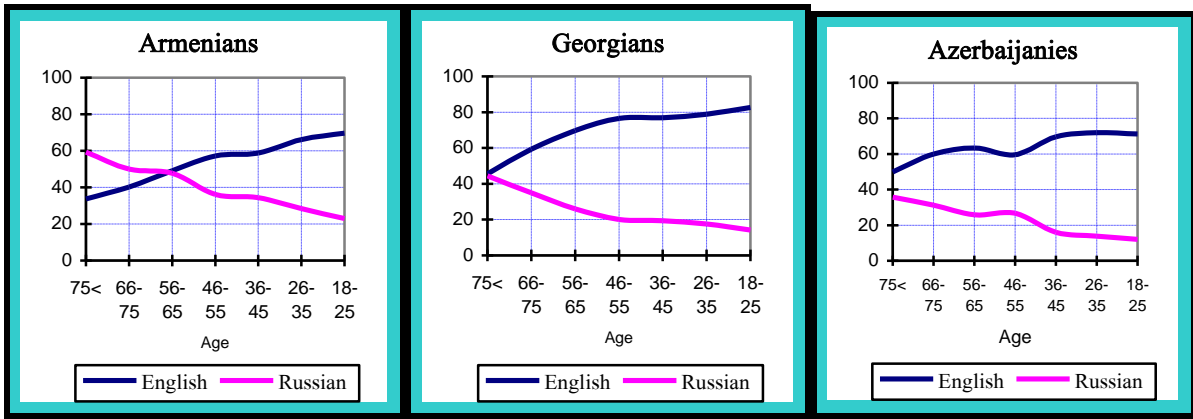
At 2007 the Russian language knowledge greatly exceeded the English language knowledge in all the South Caucasus societies (Figure 13). From 2/3 up to 3/4 of society members have no basic knowledge of English, while only 7-21% of people have no basic knowledge of Russian.

Figure 13. Persons who have no basic knowledge from specific language



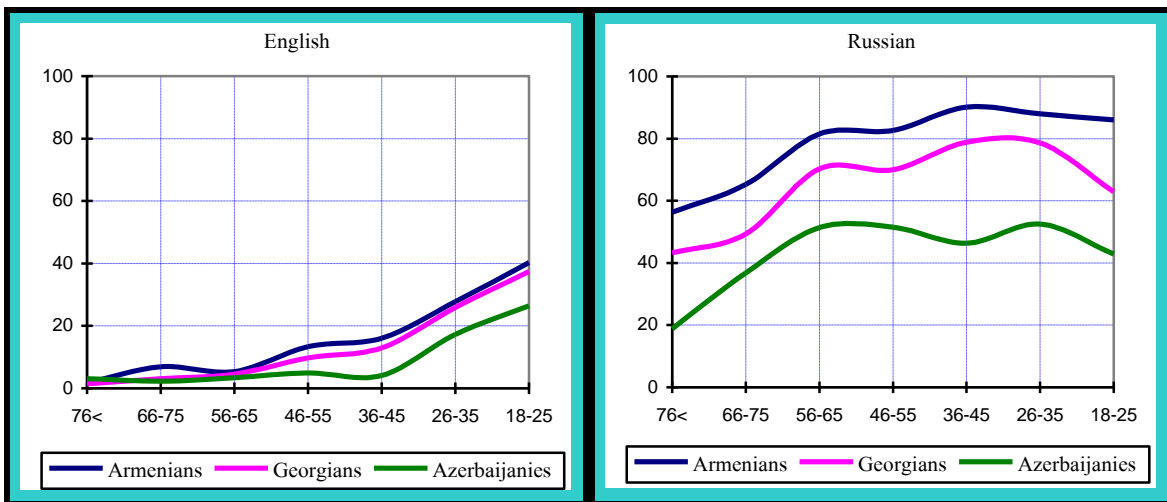
Analyzing of the trends of attitudes towards Russian and English languages shows that English language preferences are increasing in the time (if age is treated as the proxy of the time), and Russian language preferences are decreasing in all the three societies.

Figure 14. Trends of attitudes towards Russian and English languages in South Caucasus societies. “Which foreign language, if any, do you think should be mandatory in secondary schools of /country/?” Distribution by age groups.



The trends of Russian and English language knowledge are consistent to the language preferences pattern and trends: the knowledge of English language is monotonously increasing, but the trends of Russian language knowledge are declining for the youngest age groups, except, probable in Armenian society (Figure 15).

Figure 15. Trends of knowledge of Russian and English languages in South Caucasus societies. Persons who have “intermediate” either “advanced” knowledge of specific language

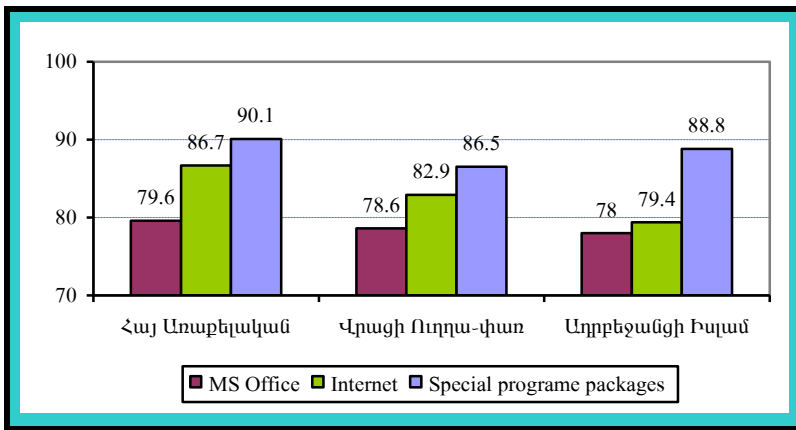


All the examined patterns and trends show that English language is enlarging its role in the South Caucasus, but the role of Russian language is decreasing, probably except Armenian society.

Computer communication skills

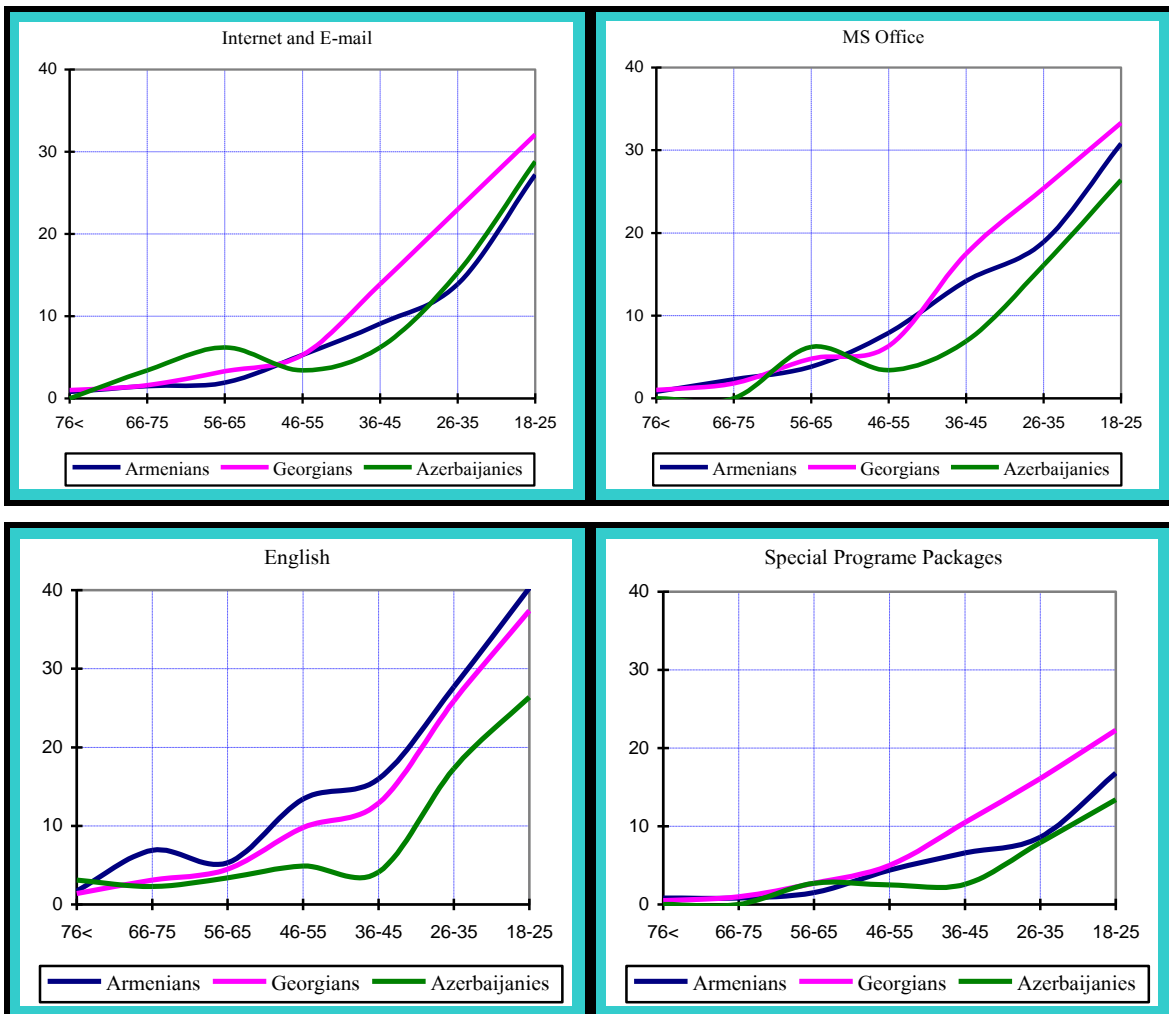
The patterns of the basic computer skills in South Caucasus three societies are approximately the same (Figure 16). Some 20% of people have any knowledge of MS Office program package and 15-25% has any knowledge in computer communications and only 10% have any knowledge in specialized computer program packages.

Figure 16. Persons who have no basic knowledge from MS Office, Internet and Special program packages



The trends of computer skills are also very similar. Approximately 30% of the youngest age group (18-25 years) is familiar with MS Office and Internet (Figure 17). It is worthy to mention that the computer and English language skills trends are very similar (that is why the trends of English knowledge are repeated in the Figure 17).

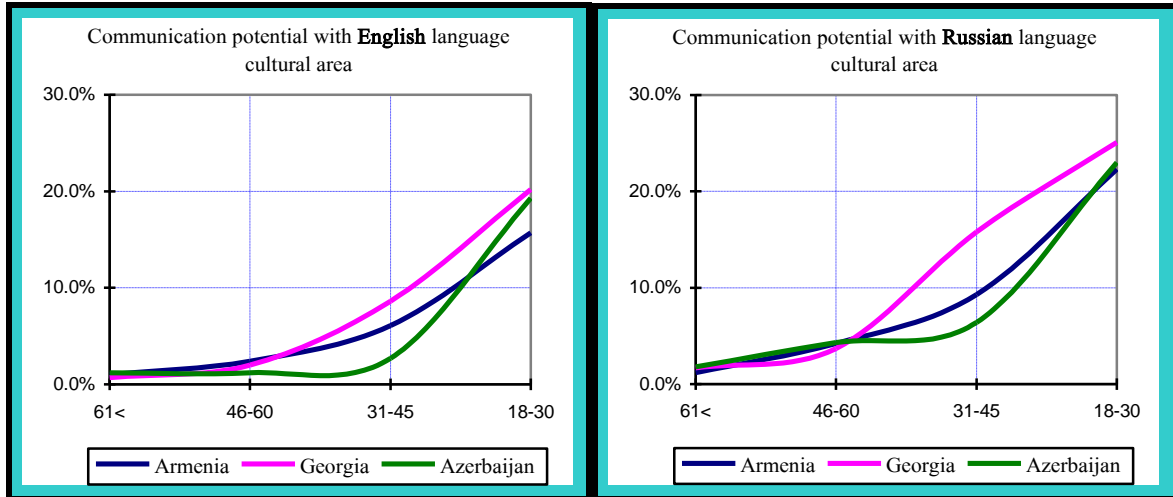
Figure 17. Trends of computer skills. Persons who have “intermediate” either “advanced” knowledge



So, by combining the above mentioned patterns and trends it is possible to compare the trends of communication potential with Russian and English cultural areas (Figure 18). As it is obvious from the figure the communication abilities with the both of Russian and English civilizational areas are approximately the same for the youngest age group (18-25 years), Russian

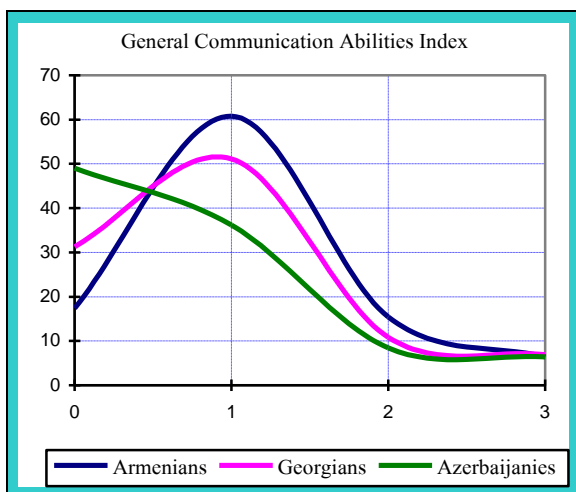
civilizational area is slightly exceeding the English area. But, if compare the levels of those abilities for the 31-45 age group, it is obvious that the trends of communication abilities with English language area are increasing with higher speed than with the Russian language area.

Figure 18. Trends of communication potential with Russian and English cultural areas. Those who have “intermediate” either “advanced” knowledge of specific language and Internet / E-mail



The General Communication Abilities' Index (GCAI) is a summative index, which allows comparing South Caucasus societies by their general abilities to communicate with other civilizational areas. It is a summative index and constructed by the variables “Knowledge of Russian language”, “Knowledge of English language”, “Knowledge of Internet and E-mail”. Index is equal to the number of those abilities, which knowledge by the respondent is on Medium or Advanced level. It is obvious the GCAI is changing in the range [0; 3]. The distribution of GCAI is given on the Figure 19.

Figure 19. General Communication Abilities' Index in South Caucasus societies

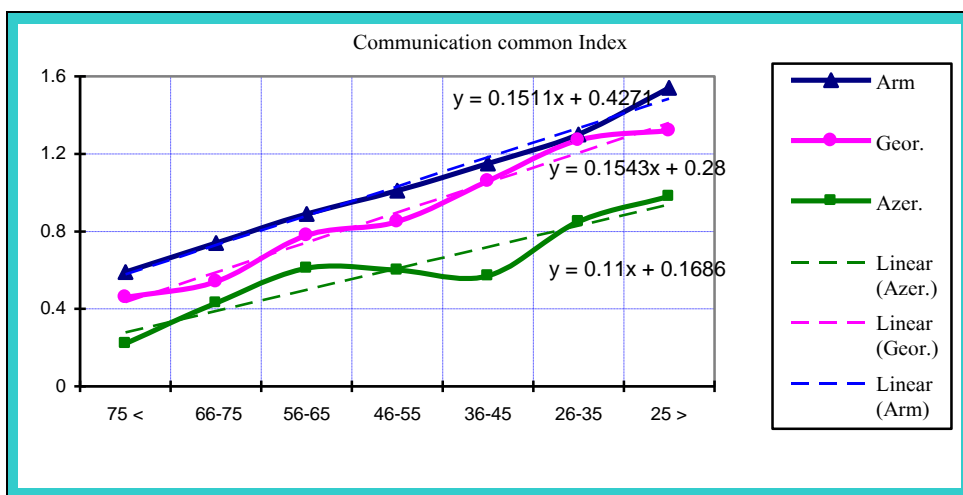


Analysis of GCAI by the South Caucasus societies shows that Armenian and Georgian societies are more advanced and homogenous in the context of that index. In Azerbaijanis society 50% of population has GCAI minimal value 0. In Armenia this layer of population is 17%, in Georgian society – 30%. But all the three societies have the same proportion of population with maximum

value of GCAI, which is in range 6.5-7.0%. These proportions could be interpreted in various aspects. From the one hand, distribution of GCAI in Armenia is the most favorable for communication in global aspect. But, if the absolute numbers of people who are able freely communicate with the world, then Azerbaijanis society has the highest ability.⁸

General Communication Abilities' Index trends over time are given on Figure 20. The trends in Armenian and Georgian societies are approximately equal and exceed the trends in Azerbaijanis society.

Figure 20. General Communication Abilities Index Trends over Time



Conclusions:

1. From the aspect of communications with civilizational areas the South Caucasus in the whole is rather in Russian language area.
2. The English language importance perception is rapidly increasing, but the importance of Russian language is decreasing.
3. The trends of language importance reveal their impact on language knowledge level. In Georgia and Azerbaijan the younger generation (18-25 year age group) Russian language knowledge is decreased.
4. Computer communication skills and language knowledge patterns and trends are very similar.
5. By the notion of General Communication Abilities Index Armenian and Georgian societies are more evenly distributed than Azerbaijanis society. In the latter 50% of population have no any communication ability with large civilizational areas.
6. By the notion of General Communication Abilities Index all the societies have approximately 7% population with no problems of communication with Russian or English language areas.
7. The trends of General Communication Abilities Index are approximately the same in the three South Caucasian societies.

⁸ Of course the communication abilities analysis in South Caucasus could not be considered as complete, as used data do not contain information about attitudes towards Turkish language, its knowledge and the knowledge trends in Azerbaijan. Because, from the chapter 1, it is known that Azerbaijanis society feel its close relationship with Turkish civilizational area, then the mentioned data and its analysis is very important in order to understand the civilizational trends in South Caucasus in the whole.

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- ⁸ Ethnic composition of Azerbaijan was very heterogeneous. Except Turkish language tribes there live also Armenian, Georgians, Avars, Lezgins, Tsakhures, Tats, Talish, Kurds, Russians and other ethnic groups.
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- ¹⁰ Azerbaijan (Turkish pronunciation of “Athropatena”) is a historical area located Southern from Arax river in Northern Iran. Establishment of both Azerbaijan Republic of 1918-1920 and Modern Azerbaijan Republic with this name creates tensions with Iran (similar to tensions between Greece and F.I.R. Macedonia).
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