

UNIQUE DISCOVERY

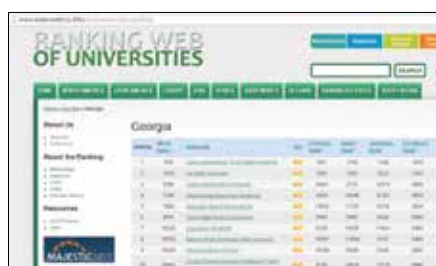
Scripts dating to the 7th c BC and as yet unknown, have been discovered on both altar pedestals of the temple on Graklioni Hill



TSU SCIENCE

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TSU SCIENCE • 2015

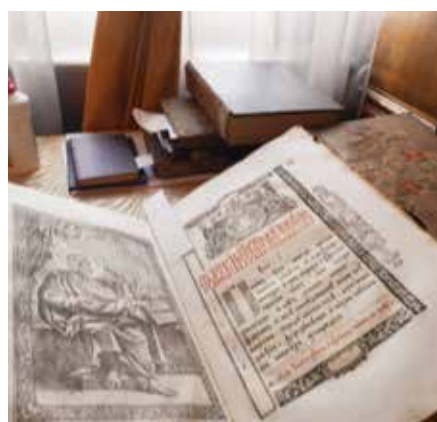


| Rank | University | Score | World Rank |
|------|--|-------|------------|
| 1 | Georgian Technical University | 85.5 | 1001-1100 |
| 2 | Georgian State University | 75.5 | 1101-1200 |
| 3 | Georgian State University of Architecture and Construction | 65.5 | 1201-1300 |
| 4 | Georgian State University of Economics and Business | 55.5 | 1301-1400 |
| 5 | Georgian State University of Health Sciences | 45.5 | 1401-1500 |

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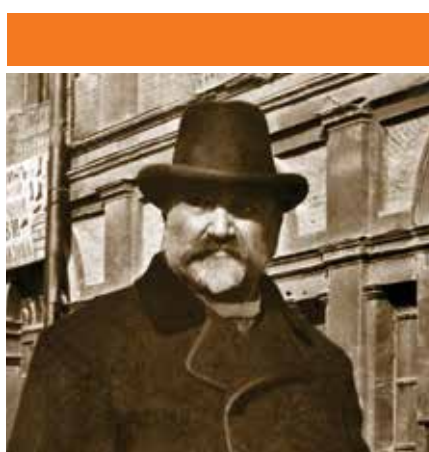
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TSU – LEADING IN THE CAUCASUS REGION ACCORDING TO UNIVERSITY RANKINGS

The year 2015 proved interesting for Tbilisi State University because of its unique achievements in attaining world university rankings. This recognition by several university ranking systems illustrates how developed a university is, and how well its education and research system meet internationally recognized educational standards in comparison with other institutions.

| | | |
|------|---|------|
| #175 | University of Oregon | 62.1 |
| | United States Eugene, OR | |
| | #227 (tied) – Best Global Universities | |
| #183 | Delft University of Technology | 61.6 |
| | Netherlands Delft | |
| | #187 (tied) – Best Global Universities | |
| #183 | University of Bari | 61.6 |
| | Italy Bari | |
| | #375 (tied) – Best Global Universities | |
| #185 | Technical University of Denmark | 61.1 |
| | Denmark Kongens Lyngby | |
| | #171 (tied) – Best Global Universities | |
| #185 | University of Montreal | 61.1 |
| | Canada Montreal, Québec | |
| | #114 (tied) – Best Global Universities | |
| #187 | Ivane Javakishvili Tbilisi State University | 60.9 |
| | Georgia Tbilisi | |
| #187 | Jagiellonian University | 60.9 |
| | Poland Kraków | |
| | #340 – Best Global Universities | |
| #187 | Kansas State University | 60.9 |
| | United States Manhattan, KS | |
| | #352 (tied) – Best Global Universities | |

Data from 2015 rankings include: March 2015 Ivane Javakishvili Tbilisi State University (TSU) was ranked 985th of the world's best 1000 universities, according to University Ranking by Academic Performance (URAP). The university was awarded a certificate from the Organizing Committee. TSU shows even better results

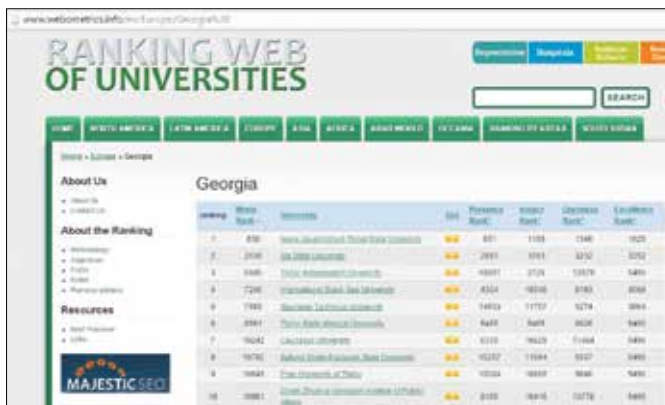
in specific research areas, for example according to the same ranking TSU ranked 175th in the physical sciences and 387th – in mathematical sciences.

According to University Ranking by Academic Performance, Tbilisi State University is ranked first in Georgia and the leading educational institution in

The Tbilisi State University appeared in Thomson Reuters World University Rankings for the first time. In particular, TSU is among the world's best universities for physics and is ranked 187th among the world's 248 universities.



TSU was ranked 985th among the world's best 1000 universities, according to University Ranking by Academic Performance (URAP).



In 2015 the Tbilisi State University has improved its position in Webometrics Ranking of World Universities and moved up from a rank of 2006 among nearly 24 000 world universities to a rank of 830. It also moved up from a rank of 714 among European universities to a rank of 349.

the Caucasus. According to the same ranking, TSU is in the 5th percentile of the world's best 23,887 universities and in the highest 10% of European universities. Among the universities of the former Soviet Union, TSU ranked seventh after the Lomonosov Moscow State University; University of Tartu; St Petersburg State University; Vilnius University; Novosibirsk State University and the National Research Nuclear University MEPhI (Moscow Engineering Physics Institute).

According to URAP, TSU has significantly improved its academic performance over the past five years. In 2011-2012 it was ranked 1600th, then in 2012-2013 it was 1394th and in 2013-2014 it was 1066th.

The University Ranking by Academic Performance (URAP) Research Laboratory was established at the Informatics Institute of the Middle East Technical University in 2009 with the main objective to create a ranking system for world universities based on academic performance. This is determined by the quality and quantity of scholarly publications. In line with this objective, the yearly World Rankings of the 2000 best Higher Education Institutions have been published since 2010. URAP's 2014-2015 world ranking is based on six indicators – article, citation, total document, article impact total, citation impact total and international collaboration.

According to September 2015 data, Tbilisi State University has improved its position in the Webometrics Ranking of World Universities and moved up from a rank of 2006 among nearly 24,000 world universities to a rank of 830. It also moved up from 714th of European universities to 349th. Tbilisi State University is the first in the Caucasus region and in Georgia.

The Webometrics Ranking shows the best university of Armenia as 2,628th and the best university in Azerbaijan is 6,405th. The Webometrics Ranking of World Universities is based in the Cybermetrics Lab at the Consejo Superior de Investigaciones Científicas (CSIC), the largest public research body in Spain. In 2006 there were 126 CSIC research centers and institutes throughout the country, and 64 Georgian universities are involved in research.

Thomson Reuters, the world's leading source of information for businesses and professionals, implements the Global Institutional Profiles Project to build more accurate and comprehensive resources on institutional activity. In October 2015, TSU figured in the Thomson Reuters World University Rankings for the first time, especially as among the world's best universities for physics: it is ranked 187th among the world's 248 best universities. Along with TSU, 45 other universities did not appear in the overall Best Global Universities Rankings (750 universities), but within the best by field of study. TSU is the only Georgian university with a profile on the website of the Thomson Reuters World University Rankings, which are mostly based on bibliometric data and citation indices.

TSU SCIENTISTS MAKE A UNIQUE DISCOVERY

Inscriptions discovered in spring 2015 during archaeological digs in Georgia belong to a hitherto unknown writing



The spring of 2015 may enter history as an exceptional date for science, with the unique discovery of artifacts by researchers and students at Tbilisi State University's archaeological site at Grakliani Hill, in the Kaspi district of Georgia. This discovery is a breakthrough that may well change the history of writing in Georgia – and in the world. A group of scientists from TSU assert that the unique inscriptions represent an entirely different and unique type of script that has no analog elsewhere.



VAKHTANG LICHELI

Archaeologist, Professor, Director of the Institute of Archaeology at TSU Faculty of Humanities; Doctor of History, Visiting Professor at University of Innsbruck. He has supervised Georgian and joint archaeological expeditions and projects and written approximately 80 scholarly articles, published in Georgia, Azerbaijan, Armenia, Russia, Poland, Greece, Italy, Spain, England, Canada, Netherlands, Germany, France and Austria.

In a temple with two altars dating to the 7th century BC and dedicated to a fertility goddess, inscriptions are visible on both of the altar pedestals. This new discovery shows that Georgia has at least a 2700-year history of writing. This and previously discovered materials might well change the history of eastern Georgia, particularly Kartli of the 7th and 6th centuries BC.

Professor Vakhtang Licheli, Head of the archaeological expedition and Director of the TSU Institute of Archaeology, attaches an immense importance to the newly discovered artifacts. Georgia thus enters the elite of key civilizations that have used writing for millennia. The writing in the temple is well-preserved on both altars. Several letters are carved on one, facing westwards, and the pedestal of the other altar is completely covered with similar inscriptions. They are so important that they surpass the scope of Georgian science alone, and have become

subjects of international research, and will change world writing history.

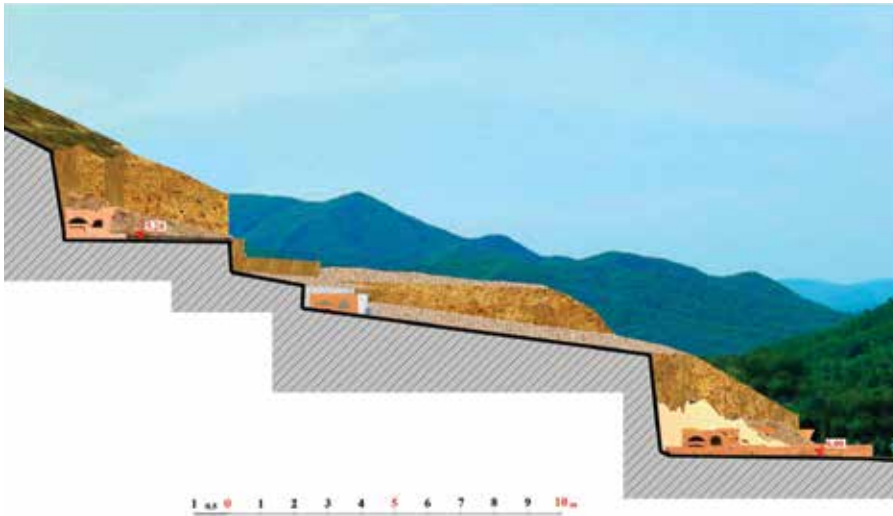
Grakliani Hill is an archaeological monument where the 300,000-year development of humans has been confirmed from the Stone Age to Antiquity. Artifacts discovered within ten layers, and which comprise several periods, include tools belonging to primitive cultures – such as cult items and a “pharmaceutical device”, a kind of spatula for mixing drugs and solutions. These objects provide key information.

This intriguing architectural picture gradually emerged as a block of buildings situated close to each other, yielded significant objects such as a golden disc from the 5th – 4th millennium BC. Its only analog is found in Suzar, Iran, with a seal from the 4th millennium BC. A similar object was found in Southern Mesopotamia. There are several cult rooms including a “cult mill”, a three-part hand-mill with which holy flour

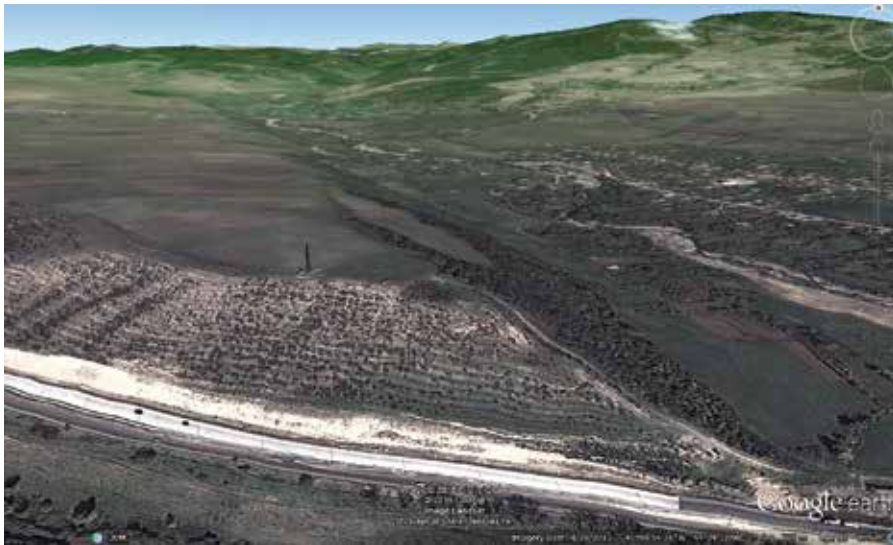


Digs underway at the temple, dating to the 7th century B.C





The third and fourth terrace marks on the Grakliani hill



Grakliani Hill. Settlement and Necropolis



Oven. Fourth Terrace of Grakliani Hill

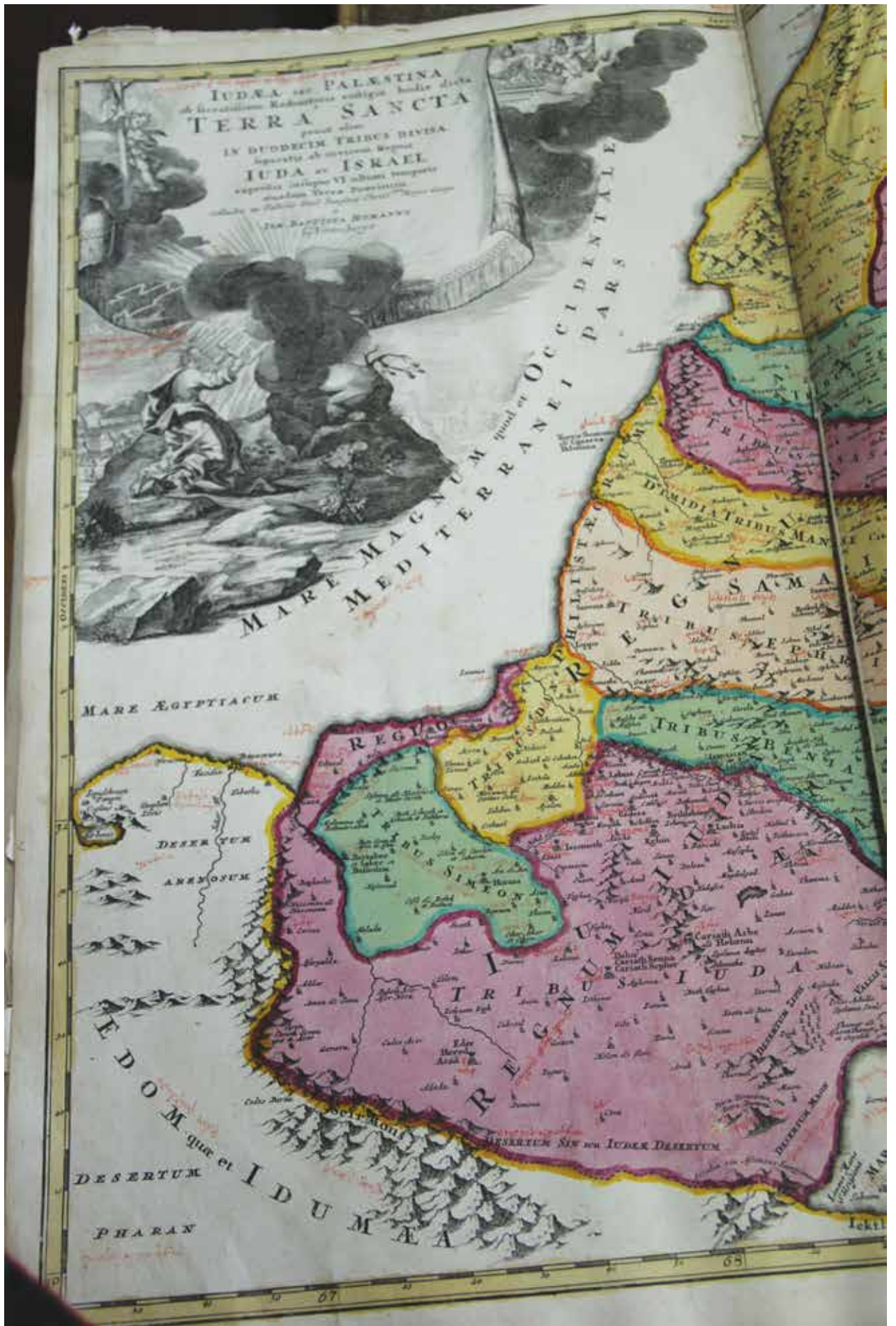
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was ground to bake bread and sacrifice it to idols. The altar platform discovered at Grakliani Hill is unlike any other in the world, and associated with the cult of the Great Mother, who is depicted at the altar.

Archaeologists from Ivane Javakhsishvili Tbilisi State University began working at the Grakliani Hill site in 2007, when a station for scientific research and field work was created. The status of National Monument was granted to the site in early 2015. According to a recent decision by the Ministry of Culture of Georgia, an open museum at Grakliani Hill will be constructed; in cooperation with the National Agency for Cultural Heritage Preservation a protective roof covering of the site has already been installed.

Professor Licheli’s preliminary research on the inscriptions at Grakliani Hill was published by the Georgian National Academy of Sciences in the materials of the Kartvelology Congress held in November 2015. Professor Licheli has made several foreign presentations about this unique discovery – twice in Germany and once in St. Petersburg during the 8th International Conference of Iranists and Orientalists. The inscriptions have created significant interest in several institutions, and for example the Universities of Bordeaux (France) and London (Great Britain) have already expressed their wish to study them.

Sul Khan-Saba Orbeliani's atlas brought by the Ambassador of Kartli upon his arrival from Europe in 1716. The atlas depicts Georgian inscriptions made by Sul Khan-Saba.





The coat of arms created by Anthim

ANTHIM IVERIANUL – GEORGIAN-EUROPEAN DIALOGUE

“Out of all misfortunes destroying and distorting a person’s soul, illiteracy, ignorance and narrow-mindedness are the worst.” These are the words of the prominent Georgian theologian and philosopher, Metropolitan Anthim Iverianul (1650-1716). He spent most of his life in Romania, and was officially canonized by the Romanian and Georgian churches. Anthim Iverianul’s legacy has not been translated into Georgian – most of his writings were originally in Romanian, while his correspondence in Greek and Arabic are currently found in different libraries worldwide. This is why Georgian academic circles have not been properly introduced to his works except for some parts of his complex scholarly studies that were translated from Romanian into brief English resumes.



The coat of arms created by Anthem

Anthim Iverianul's role and significance in Romanian culture is enormous – he is recognized as one of the main founders of Romanian liturgical and classical-literary languages, author of church legislation and homily texts, an unrivalled speaker and preacher, as well as educator and publisher, author of sophisticated translations in Classical, Oriental and European languages, builder of historic churches and monasteries, distinguished calligrapher, founder of theological schools and creator of the first public library in Romania.

A project, "Anthim Iverianul – Georgian-European dialogue" won a state academic grant in 2013 and will be completed by April 2016; it aims to make Anthim Iverianul's legacy and activities more widely available to Georgian readers. Professors from the TSU Institute of Philosophy (Faculty of Humanities) are carrying out the study, headed by Anastasia Zakariadze PhD, habilitated doctor of Philosophy and other academics in the field of Philosophy: Irakli Brachuli, PhD; Valerian Ramishvili, PhD; Demuri Jalaghonia; and Archpriest Aleks Kshutashvili, who is a guest Professor at TSU, PhD in Canon Law. In addition, support staff contributing significantly to the project: Archpriest George Tserodze, Theological Academy graduate, Master of Theology, and doctoral student in Philosophy, as well

as Nino Bagrationi-Davitashvili, PhD in Philology.

It was vital to translate the materials from Romanian so that Georgian readers can explore this prominent Georgian theologian's and philosopher's works. The most famous work, "Didahii" was chosen as first volume to be translated. It is a complete corpus of sermons, as well as the world's most important monuments of canon law: "Anthim Iverianul's Monastery Typicon", and other works such as "Canon Chapters", "Ecclesiastical teaching", "Teaching on the Mystery of Confession and "Defense Letters", which were epistles written in defense of himself, also original dedications and forwards by Anthim Iverianul on the books issued at his publishing house.

Anthim Iverianul's works and activities are vital for the development of Georgian theological thinking due to the fact that he succeeded in developing Georgian traditional religious awareness during the Enlightenment, re-establishing bonds with European theological ideas. He managed to fill a five-century gap in the general development of theological thinking, and reopened a theological-cultural dialogue within European theological, cultural and educational spheres.

Following a line of Georgian scholars, Anthim Iverianul represents one of the most



ANASTASIA ZAKARIADZE

Associate Professor at the Faculty of Humanities of I. Javakhishvili Tbilisi State University, PhD, he received the title of Honorary Professor of Ovidius University of Constanta, and has been working at the TSU Institute of Philosophy since 2005; he heads Antimoz, the Iberian Philology and Theology Research Centre. From 2011 to 2014 was Deputy Head of the Institute of Philosophy and the Head of Quality Assurance at TSU. He has written approximately 60 scholarly works including textbooks and monographs; has participated in a number of national and international grant projects and was the chairperson of international conferences in Georgia, the USA, Italy, Israel, Romania, Poland, Ukraine, etc.



The coat of arms created by Anthem



The Anthim Monastery in Bucharest

distinguished theorists and practitioners of Western Enlightenment at that time. He believed that human intelligence was appropriately applied only when achieving significant progress in polygraph production, book translation and dissemination. For him, the “Celebration of freedom of thought” must be communicated in a written form through bilingual and poly-lingual, inter-textual activities, and cultural dialogue. Anthim Iverianul’s “project” widely diverged from the Kantian approach to the autonomy of reason; but Anthim’s approach clearly suggested there is a lack of perspective and a destructive potential within “the religion of reason”.

Anthim Iverianul’s analysis of theological heritage shows that it is a sophisticated form of maintaining and strengthening Byzantine theological traditions in the contemporary context filled with modern challenges. In the Enlightenment period, Anthim Iverianul acted as an implementer of creative, modern adaptations of Orthodox theological tradition. He obviously realized the threats of scientism as well as the Christian unilateralism in the Protestant and Catholic religions. This approach made his work unique, different from all radical branches of the European Enlightenment with materialism on one hand and rational theology on the other. Anthim Iverianul established himself as a

philosopher by echoing an onto-theological view of the Primacy of the Ethical, and theologically transforming Cogito’s Principle to face and overcome the dilemmas of the Enlightenment and humanism in general.

Anthim Iverianul’s principles of Orthodox Church and State relations are salient to contemporary Georgia. The 1995 Constitutional Agreement between the Georgian Apostolic Orthodox Church and the Georgian Government was a fresh start of a historical process. This process implies the harmonization of three legal spheres – canonical law, national law and international and legal realities of the EU.

Through his writing, Anthim Iverianul clearly outlined the cultural mission of the Church. Through overcoming the tendencies of “Hellenisation” and “Slavisation”, St. Anthim’s following “Semiosis” came true: “I would prefer churches to preach in languages that are understandable to everyone, rather than preach twenty thousand words to listeners in a language they do not understand.”

The novelty of the research is that it presents a complex, interdisciplinary interpretation of Anthim Iverianul’s heritage. His legacy has been presented to contemporary cultural and academic society: The team analyses his paradigm of Romanian and Georgian cultural integration in the process of building European identity and world culture; ways of establishing multiculturalism; and the significance of the relationship between traditional modernity for establishing intercultural dialogue.

The establishment of the first Georgian printing house is linked to Anthim Iverianul, and he made a valuable contribution to the development of publishing-printing in Georgia. Research showed that due to his direct participation and supervision, publishing houses operating in different parts of Romania issued 63 liturgical and pastoral books in Greek, Romanian, Slavic and Arabic languages as well as the Georgian “Antimins” (Odiki). In 1701, he assembled the first Arabic-language publishing machine himself, and sent it to the Antioch Orthodox Christians. In 1709 he assigned his best student, Mihai Ishtvanovich, to present a Georgian-language printing machine and newly-published Antimins to Vakhtang VI in Tbilisi.

The research on Anthim the Iberianul's works and activities led the project team to the conclusion that his legacy is an amazing example of intercultural dialogue. A Georgian theologian residing in the Balkans—Romania—created and established very important yet little-known Georgian-European links. A re-examination of his works and contributions points directly to the “Idea of Europe” and two significant cultural-historic regions – Georgia and Romania.

Within the framework of the project scholars made an expedition to Bucharest to study additional materials of Anthim Iverianul and examine artefacts in monastery libraries and other repositories under the jurisdiction of the Patriarch of Romania.

Anthim the Iberian's works have been presented to the general public through conferences, theoretical seminars and publications. Very importantly, his monastery complex hosted an international seminar entitled “Anthim Iverianul: Georgian-Romanian Meridian”. In addition to the Georgian professors, other Doctors of Theology participated, including Proto-Deacon Gamalier Sima Hegumen (Abbot



The Faculty of Theology at the Bucharest University

in the Roman Catholic Church) Kiril Lovyn, Hieromonk Anthim, Director of Holy Synod Library and Archimandrite Polycarp Chitileску, etc.

As a result of this research, a new training course was established, endorsed by the Quality Assurance Department of the Faculty of Humanities, who deemed the course necessary to be established in academic practice. The scholars believe that the project should continue so that more works can be examined, for example in the archives of England, Greece and Turkey (Istanbul) in order to prepare

Anthim Iverianul's complete works for publication. The project results will widen the prospects of expanding social-political, cultural and educational communication activities. Events and publications will support Romania and Georgia as well all EU countries to become more aware of their communication rights and responsibilities within the European Union.

The completion of the project coincides with the 300th anniversary of this great religious scholar's martyrdom. Hence, UNESCO has announced 2016 as the year of Saint Anthim Iverianul.



Statue of St. Anthim in Bucharest



Old capital – Targovishte

THE GELATI BIBLE WITH CATENAS



ANA KHARANAULI

Associate Professor at the Georgian Philology Department of Tbilisi State University Faculty of Humanities; Doctor of Philology. After completing her studies in classic philology at TSU, she joined the Department of Byzantine Studies at the G. Tsereteli Institute for Oriental Studies; was awarded the degree in Philology in 2009 and a PhD in Philology in 2005; worked in the Göttingen Academy of Sciences and Humanities. She supervised the programme “Medieval Christian East” from 2008-2010 and has received Georgian and international scientific scholarships and grants. Scholarly awards: VTB Bank prize “Parnassus”; and in 2006 educational program “Old Georgian Translation Theory and Practice” (with D. Melikishvili and K. Bezarashvili).

All countries have symbols – identification marks for itself and for others, to define itself and to define others. Symbols have one of two fates: either we get so accustomed to them that we fail to notice them, or else we do not know them at all because we do not need them anymore. The Gelati Academy is a key symbol of the founding of the successful Georgian state—and yet the 900th anniversary of its foundation is going unnoticed by the public, while the Gelati Bible with Catenas (a biblical text within which each section contains commentaries of various kinds and authors), remains a symbol of Georgian spirituality, intellect, education and literature has been known only to specialists. Overlooking these has been caused by several factors: first, there was an intellectual delay that lasted for centuries after King Tamar’s reign; then the Communist regime forbade Georgians to even mention the Bible; and finally, today’s material values ignore some important intellectual and spiritual values that seem unfamiliar and unnecessary. Two very large manuscripts of the Gelati Bible (the 12th century autographic list of the Georgian National Center of Manuscripts(A-1108) and its copies (Q-1152), discovered by Tedo Zhordania in the ruins of the Gelati Monastery almost a century ago, are still waiting to be studied, appreciated and—most important – used properly.

Ana Kharanauli, Associate Professor at Tbilisi State University and author of *The Gelati Bible with Catenas* has led research funded by the Shota Rustaveli National Science Foundation on the Bible and its preparation for publication. The project is implemented by professors (A. Kharanauli; D. Melikishvili; V. Jugeli), students (T. Jikurashvili; A. Maisuradze; L. Abralava) and MA students (Ts. Guledani; N. Dundua; N. Mirotadze) from the TSU Faculty of Humanities. By financing this project the Shota Rustaveli National Science Foundation is promoting the succession of generations of scientists, and teaching young people how to work jointly around one task.

The publication of the Gelati Bible itself has been a collective effort done by the funder, translators, editors and copyists,

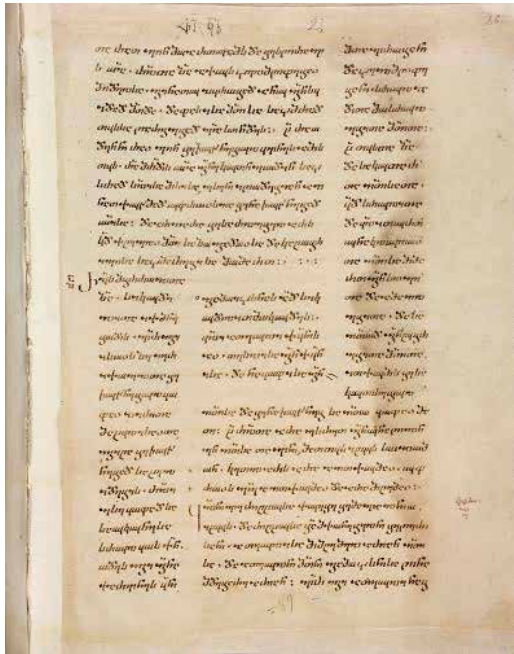
who created a scientific publication with an entire system of references and conventional signs. The Bible concentrates Old Testament commentaries, and with its full depth and diversity it represents Old Testament Theology. The team has created an extremely sophisticated meta languagethrough which complex theological nuances can be transmitted. It is also a textbook, for those who will learn to read and understand the text comprehensively.

The biblical catenas are a collection of the most difficult composition. Initially they appeared in Palestine in the 6th century, then in Constantinople, and finally were found over all Byzantium. On Athos and in Italy, the Bible with Catenas was written before the 16th century. Many manuscripts and their wide dissemination confirm that there was a great demand for the Bible with Catenas in the Middle Ages. In Georgia, the Bible with Catenas became popular a bit later and there is no information on the existence of Georgian biblical commentaries in the pre-Athonite period. This work was launched by Euthymius the Athonite (in Georgian: Ekvtime Atoneli), continued by a Georgian monk at Antioch, Ephrem Mtsire (or Ephraim the Small) and completed at Gelati where a new, revised translation of the Gelati Bible and its commentaries was created.

The Gelati Bible with Catenas is important in many respects to portray a common picture of Georgian culture, writing, language, Georgian-Byzantine relations, translation theory and practice, Christian exegetics and the Christian world of the Middle Ages in general. Key aspects include:

It is an important link in the chain of Georgian-Byzantine relations in writing, reaffirming a uniform, purpose-oriented line of the Georgian translation school’s policy that endorsed the full use of Byzantine writing and reflects the interest that the Gelati school shows towards the commentary genre.

* The Kiemenon of the Gelati Bible with Catenas is a new stage of Georgian biblical text and this comprehensive study of the collection will enable us to provide full characteristics of this stage.



საქართველოს ეროვნული ხელნაწილების ცენტრი
GEORGIAN NATIONAL CENTRE OF MANUSCRIPTS

* The Gelati Bible with Catenas is an extremely important source of the Patristics and biblical hermeneutics in general, because the exegetical works of some authors have only been preserved in the form of catenas.

* The language of translations and its dialectic, syntactic or stylistic signs turn the Gelati Bible into an important document of Georgian language history.

The translation of the ideas of various exegetical schools required an extremely sophisticated specialized (theological) terminology, thus the collection provides rich materials for studying Georgian scientific terminology.

The Gelati autographic list (A-1108), which contains many corrections by its author, offers unique materials to observe the process of how medieval philologists worked.

Studying the interrelation of the autographic list and its copy (Q-1151) helps create an idea of the method and work style of medieval copyists – what problems they faced when copying manuscripts and particularly autographs; and what particular changes they had to make.

The creation of collections with Catenas implies many technical difficulties. The Gelati Bible with Catenas is a high-level manuscript. Marginal signs or the numeration style of commentaries, placement of Catenas and Kiemenon and

their interrelations and other details make the manuscripts extremely interesting from a codicological point of view and demonstrate the high level of the book's culture.

Studying the Gelati Bible with Catenas related first of all to identifying its origins. This is essential from several points of view:

It is impossible to identify the text of translation, especially such an ultra-elinophilic translation as that of the Gelati Bible with Catenas, without thoroughly comparing it with the original.

It is important to compare the biblical text with the original in order to define the history of the Georgian biblical text.

Comparison with the original is important in order to observe the translation techniques of the Gelati school of translation. Translations by various authors or various types of texts made by one and the same translator or within one school create an important spectrum for studying the Georgian elinophilic translation.

The Gelati Bible with Catenas is another example of neglected Georgian written monuments found while studying the Byzantine culture. Information on the existence of a Georgian translation of the Bible with Catenas is not provided in any fundamental descriptions or research on the subject.

Studying the Gelati Bible with Catenas

is important for research on Greek collections with Catenas:

For Septuagint textual criticism; to identify the texts of commentaries of separate authors; to identify the authors of separate commentaries; and to study the history of the text of a collection.

The key objective of the project financed by the Rustaveli Foundation is to prepare the text and commentaries of the three books included in the Gelati Bible for publishing: Leviticus; Numbers and Deuteronomy.

A year and a half has already passed since work began and certain results have already appeared. For example, we know what textual traditions the Greek original of Georgian translation had; we know what methods of translation were used; what principles were used in selecting the commentaries and how this choice reflected the interest of the public; and the criteria have been identified under which the autographic list should be published. After the project is over, hopefully new funding will be forthcoming for research on the text of the remaining parts of the Gelati Bible (Joshua, the Book of Ruth, Judges and Prophets) and that both the text and the research results will find a publisher. This will be the best celebration of the 900th anniversary of foundation of the Gelati Academy.

INDICATORS OF POST-TRAUMATIC GROWTH (PTG) AND PSYCHOLOGICAL WELL-BEING IN LIFE STORIES

Scientists from Ivane Javakhishvili Tbilisi State University (TSU) carried out a study “Indicators of Post-traumatic Growth and Psychological Well-being in Life Stories” in December 2013 under the guidance of TSU Assistant Professor Lili Khechuashvili from the Institute of Individual and Clinical Psychology and the Faculty of Psychology and Educational Sciences. Kate McLean, Associate Professor of Psychology at Western Washington University, Director of the Memory and Identity Lab, is a partner with the Georgian project.



LILI KHECHUASHVILI

Psychologist, PhD in Psychology, Assistant Professor at the Psychology Department of TSU (Institute of Personal and Clinical Psychology). In 2008-2015, she was granted research and academic scholarships at the University of Tartu (Estonia), the University of Iowa and Western Washington University (USA); won a Fulbright scholarship; collaborates with the National Centre for Education Quality Enhancement as an expert in program accreditation. Research fields: narrative identity, personal and cultural narratives, the master narrative and the study of life, post-traumatic growth, psychological well-being and associated psychological, social and cultural characteristics.

Graduates of the TSU Faculty of Psychology and Educational Sciences (who were BA and MA students when the study began), as well as current BA students are also involved in the study. A group of young psychology researchers is carrying out qualitative data coding; the team includes Maia Mazanishvili and Nino Gugushvili, MPsy; Ana Shavgulidze and Mariam Lamazoshvili, BA students; and Lela Lezhava, fourth-year BA student. The study is being implemented within the Central Asia and Caucasus Research and Training Initiative Senior Fellowship (CARTI) under the International Higher Education Support Program of the Open Society Foundation.

The research uses mixed methods to identify indicators of post-traumatic growth and psychological well-being in life stories of the research participants. The research was planned and implemented in several stages, each of which had its own goal and expected results.

At the first stage two instruments using self-report questionnaires were adapted to the Georgian context by agreement and permission of their authors: a) psychological well-being scales and b) a post-traumatic growth questionnaire. At this stage, a total of 1189 participants have taken part in the pilot studies and psychometric properties studies. These two instruments have already been finalized and other psychologist-researchers can use the existing Georgian questionnaires.

The second stage made up the main part of the research and included 90 persons. Forty-five were IDPs who had been forced to flee their homes after the 2008 August

war and currently live in homes provided by the state, and 45 non-IDP citizens who participated in most of the study. Each respondent answered a questionnaire, and had a life story interview. New demographic data appeared that proved an important distinctive factor when interpreting some data.

Novelties and findings of the research include the fact that two research tools were adapted and adjusted: a post-traumatic growth questionnaire and a psychological well-being scale. These tools are new for Georgia, yet people are willing to speak about their own lives and talk openly about the most difficult, intimate and painful/happy moments.

The study has showed that various generations (those who lived in the Soviet era and those who lived after the 1990s) differ significantly for all major parameters when describing themselves and how they talk about their own lives. A clear tendency became apparent for persons of the older generation found that their ideal, untroubled, idyllic situation was replaced by chaos and ambiguity, closely replicating the historical reality they had to live. The next generation, growing up in the chaotic decade of the 1990s, are more oriented towards achievements and positivism. The generalization of life stories reveals a collective narrative with a certain cultural script, or a so-called master narrative that is still in the process of being formed by the present reality. It is developing in two directions—a comparatively traditional Georgian one (motherland, mother tongue and faith) and a modernist one (globalization,

cosmopolitan vision); each of them is typical to a certain age group. Narrative identity is directly linked, and emerges from a national identity found in the participants' stories multiple times.

Interim conclusions of the research reveal that IDPs are less likely to see new opportunities around them than other participants do, however the two groups do not differ in their psychological well-being indicators. It indicates that IDP status has no effect on subjective well-being. Very different factors work here; a sense of psychological well-being is closely related to socio-economic status and income. For both groups – IDPs and others – the lower the income, the lower their subjective well-being. Therefore, socio-economic factors are good predictors of psychological well-being. This picture changes for those who categorize themselves as “poor”, who feel better than those with average incomes. The researchers believe that “well-being” as a construct may be perceived differently by the two groups.

For post-traumatic growth (irrespective of which group), this indicator is higher for women than men. In particular, after a traumatic experience women improve their relations with others and begin to appreciate life (they become more religious and pay more attention to their spiritual lives). This indicator reflects the results of studies conducted in various other cultures as well. Generally, women have slightly more, firmly reliable growth indicators.

In terms of subjective post-traumatic growth indicators, those who divorced their partners/spouses manage better to see new opportunities than those who suffered the death of people close to them. This result (the fact that the overall picture of post-traumatic growth is different according to the type of traumatic event) concurs with opinions and results carried out in other cultures (Japan, Germany, Turkey, Scandinavian countries, Italy and Spain). The overall picture of post-traumatic growth changes according to what kind of trauma/stress experience a person has gone through.

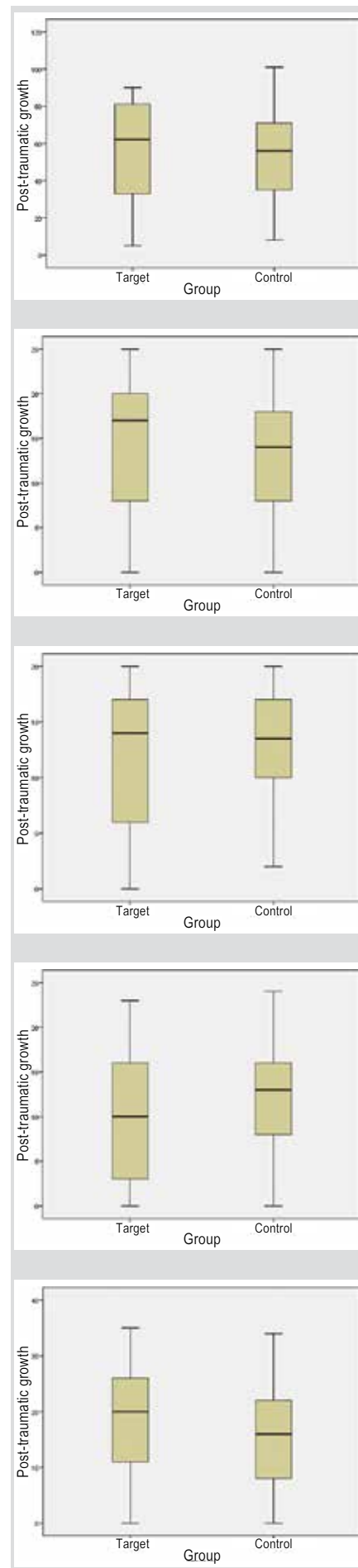
A large amount of data analysis was carried out on life stories told by participants. Because of the diversity and great volume of materials, at this stage only those variables and components were analyzed that related directly to post-traumatic growth. In particular, a detailed redemption sequence coding scheme was developed. Two research assistants

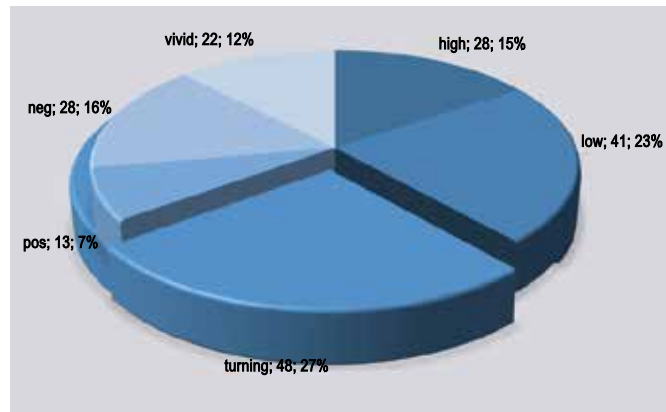
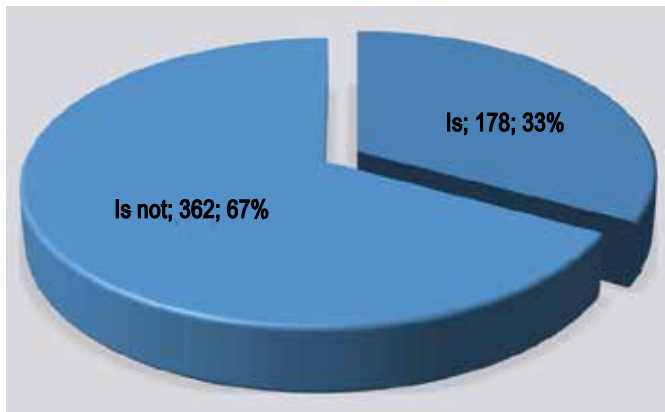
independently coded 540 memories from 90 interviews (6 memories from each story). A 90% agreement was reached, which is quite a high indicator for similar studies.

The “redemption sequence” is encountered only in one-third of coded memories, in cases where a demonstrably bad or emotionally negative event or circumstance led to a demonstrably good or emotionally positive outcome. For example, after ruining relations with friends, people become more attentive towards other people. People evoke experiences in the redemption sequence that they consider a decisive moment in their lives. The same structure is frequently found in memories of negative experiences that closely reflect the studies conducted in other cultures. The present study has also demonstrated that people tell about bad, painful experiences more comprehensively, intensively and often repeatedly and followed by more reflection. Seeking an opinion is prevalent and thus a personal growth element more common. This is less observed in the case of positive developments and probably happens because people do not question good things. Only bad stories need an opinion. Very frequently, people who put their lives in redemption sequence are basically learning, growing personally and improving themselves as a result of negative experience.

Whether a person is an IDP or not, in most cases a redemption sequence is present for decisive events and negative experiences, which indicates possible universal properties. We learn from negative experience. However, if we move to a deeper level of analysis and compare IDPs with other participants, we see that the two groups do differ from each other in how they structure the narratives of their lives. Non-IDPs use a redemption sequence more frequently than IDPs. Agency (activity and achievement orientation) improves as a result of bad experience, and interrelations with other people are more frequent. However, if IDPs use a redemption sequence, they most likely focus on such issues as adaptation, which isn't found in the other group, and improvement, which basically implies improved relations and social/living conditions.

Thus, we can state that IDP status and memory types reliably predict how frequently the redemption sequence will be presented in a person's life story. For example, we can say that if a person lives in Tserovani (IDPs





reside in this village) and tells us about the best moment of their life, it is less likely that they will tell a story in redemption sequence than when speaking about a decisive moment; but if our interlocutor is from Tbilisi or, for instance, lives in Baghdadi and tells about a decisive moment, it is very probably that their story will contain more redemption sequences than both stories told by the first interlocutor.

The researcher linked this with other aspects of post-traumatic growth, measured by the questionnaire and drawn from life stories of the participants. A moderate positive connection was found between redemption sequences taken from memories on one hand, and two aspects of post-traumatic growth on the other. This included seeing new opportunities and personal growth, which enable us to

predict a post-traumatic growth level if we know if the frequency a person uses this sequence in narratives is the same as that in research by other scientists – for example by the authors of the post-traumatic growth model. Similarly, a moderate but reliable connection was found between redemption sequence and psychological well-being, and this also matches existing studies that show that redemption sequence in narratives is reliably linked with high well-being and happiness indicators.

Concerning the practical use of the research and other issues, several observations include:

The integration of traumatic experience into a life narrative and coherent narrative is a good predictor of psychological well-being and mental health in general. This is confirmed by a series of studies conducted

in the United States. The present study also confirmed this result. The more sequentially participants tell their life stories and include traumatic experiences (for example among IDPs it is the loss of housing and resettlement) and the more they have reflected on them, the higher their post-traumatic growth indicator is and the more “redemptively” (redemption meaning bad events are followed by good events) they construct their life stories. Subjective well-being is also comparatively higher among them. This is of practical value for psychologists, consultants and those who work with similar issues. More specifically, a sequential and reflective narrative, mostly constructed in redemption sequence, is a sign and predictor of improved mental health that points to positive outcomes for therapy, consultancy.



Compact settlements for IDPs

The study also showed that IDPs, compared to other participants, face more difficulties in verbalization and sequential narratives. This can be explained by an education variable and cultural attributes when speaking about one's own experiences and opinions is not encouraged. It seems at this stage, however, we can talk only about a tendency that less – educated participants face more difficulties in reflection and verbalization of their feelings than those with a higher education. Since the number of participants is not high in the study, we cannot resolutely assert this, however. This is the first mixed-method research conducted in Georgia on this issue, and it considers integration of self-report questionnaires and life stories. In addition, it is the first research using narrative approaches that is related to IDPs within the framework of narrative identity model. The qualitative part of the research is the first endeavor to consider the formation of cultural script, i.e. a master narrative on the basis of analyzing interviews.

Another practical use is comparatively technical: 96 life story interviews were recorded, collected and transcribed. This material contains very much unprocessed

information that can be used by other researchers (including students), and for educational purposes in relevant courses. For example, during a semester a researcher can use transcripts of interviews conducted during the research. Two new courses were created during the research that will be offered to students from the Faculty of Psychology and Educational Sciences, or as selective courses for other students. These courses are: "Life Story Interview and Narrative Analysis" and "Psychobiography".

Based on the above research, a new research project was written which has already received a Fulbright Scholarship funding and the researcher will spend the next eight months at the Western Washington University. Together with Kate McLean, the Georgian researcher will work on the correlations of life stories and the master narrative of Georgian immigrants and Georgians living in Georgia.

Due to a lack of financing the research results were presented at only one international conference as: "Comparative study of psychological well-being and post-traumatic growth of IDP and non-IDP citizens of Georgia". Conference title: International Psychological Applications

Conference and Trends 2015 (In PACT 2015), Clinical psychology section, 2-5 April, 2015, Ljubljana, Slovenia.

Part of the results were received for oral presentation at the annual congress of the American Psychological Association titled: "Post-traumatic Growth and Redemption in Life Story Narratives of Georgian Sample: Comparative Study of IDPs and Non-IDP Citizens of Georgia"; conference: 17th Annual Convention of the Society for Personality and Social Psychology (SPSP), San Diego, CA, USA.

Presently, parts of the present study are being printed and will be included in the book Psychology Applications & Developments II as Chapter 4, "Post-traumatic Growth and Psychological Well-being of Georgian Citizens (comparative study of internally displaced persons and other citizens).

An article "Investigation of Psychometric Properties of the Georgian Version of Post-traumatic Growth Inventory" will be published in Journal of Loss and Trauma issued by the American Psychological Association.

Publications have appeared in local peer-reviewed journals.



Compact settlements for IDPs

CITIZENSHIP STYLES IN GEORGIA



MAIA MESTVIRISHVILI

Doctor of Psychological Sciences, Associate Professor at Ivane Javakhsishvili Tbilisi State University Faculty of Psychology and Educational Sciences. Her major research interests are: social identities, stigma and coping, moral judgment and religious attitudes. In 2006-2011 she received research and academic scholarships at the Universities of Columbia (USA), Berkeley (USA) and Leuven (Belgium). For her research "Concealable and Vivid Stigma in Social Minority Groups" she was awarded by Presidential grant for young Scientists (Georgian National Science Foundation). She is a principle investigator of research Projects funded by Academic Swiss Caucasus Network (ASCN) and Norwegian Institute of International Affairs (NUPI). Dr. Mestvirishvili is an author of several international conference papers, book chapters and journal articles.

What is a "citizenship style"? How is this acquired and what are the particular psychosocial factors that define it in Georgia? A study carried out by Tbilisi State University researchers entitled "What defines the style of citizenship: culture, religion, nationalism?" addresses this question. Assistant Professor Khatuna Martskvishvili, Faculty of Psychology and Educational Sciences; Assistant Professor Luiza Arutinov, Faculty of Psychology and Educational Sciences; and Regional Research Coordinator Natia Mestvirishvili, Caucasus Research Resource Center studied national, cultural and religious attitudes as potential factors that contribute to the notion of citizenship style. The research was carried out in seven Georgian universities: four in Tbilisi and three in the eastern, middle and western areas of the country, respectively, and included 415 female and 270 male students between the ages of 18-24 who participated in the research.

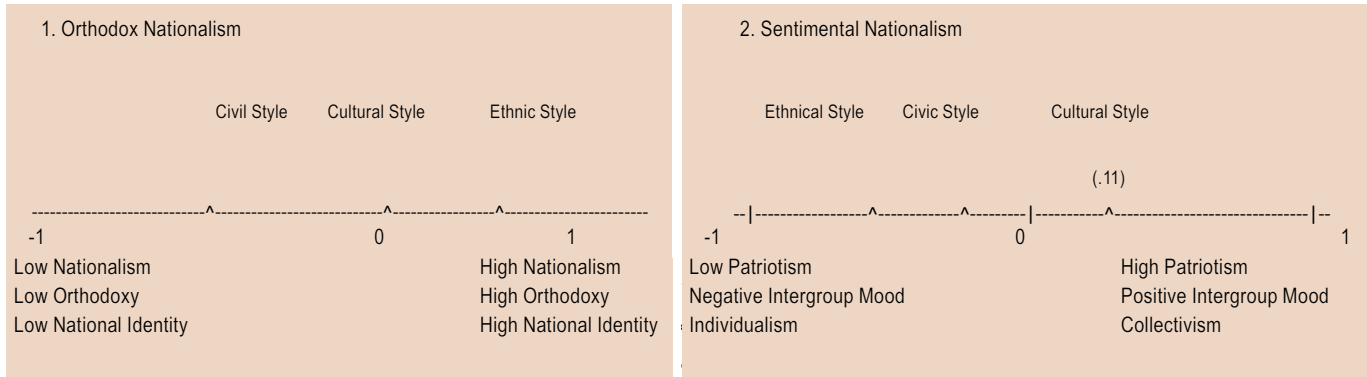
The interest of the TSU researchers was prompted by current practices in the world and by widely debated issues in Georgia as well. The research analyzed ethnic, cultural and civism styles of citizenship of Georgian youth to determine how the style of each

citizen is constructed and manifested. The study was financed by the Academic Swiss Caucasus Net (ASCN) in 2011, and was carried out over two years.

Everyone has a certain emotional attitude towards their own country. These attitudes are reflected in an individual's daily behavioral patterns and play an important role in the process of an individual's self-realization and social identity. Citizenship style is a part of social identity that determines the criteria according to which an individual can be considered a citizen of the country and is influenced by complex social processes. On one hand national self-determination strongly influences it, while at the same time the type of citizenship one has influences the social perception of an individual and establishes the boundaries of the social group. Different criteria are used to determine who will become a citizen of a given country, and then according to these criteria three styles can be distinguished: ethnic, cultural and civic.

Ethnic citizenship style implies that genealogical links are essential to obtain membership in a given (specific) ethnic group. In contrast, civic citizenship style implies that any person who respects and





recognizes the laws of a country and who is actively involved in the social and political life of the country can become a citizen. The research suggested that most likely an ethnic-national dichotomy does not fully reflect the complex nature of citizenship. Thus, research confirmed a third style of citizenship identity, a cultural citizenship style focusing on an individual's adaptation to and respect of what they perceive as a national culture. These persons show a great respect for particular aspects of what they see as national culture and are eager to protect it. They are more sensitive to culture-related issues and believe that their knowledge and respect are essential to obtain group membership in a particular nation.

Using this theoretical base, the study addressed the three styles of citizenship in Georgia to provide a micro-level analysis. In particular, the researchers clarified the compositional modality of each style and the factors that differentiated them. The study showed that citizenship style is closely associated with the quality of national identification, as well as cultural and religious dimensions. In particular, the positive indicators of nationalism and negative indicators of patriotism determine ethnic citizenship style, while civic citizenship style is associated with the positive indicators of patriotism and negative indicators of nationalism. This showed that nationalism and orthodoxy are in a strong and positive correlation with each other, due to the fact that both nationalism and orthodoxy are based on rigid types of cognitive interpretation. Cultural citizenship style usually scores in the middle of most predictor variables, which indicates a new

function of cultural citizenship style: to balance the opposing elements of ethnic and civic types, and to play a transitional role for change.

In Georgia, religiosity is an important variable in the relationship between national attitudes, standpoints and identity. Religiosity is not only identified through direct links, as a decisive factor for the strength of identity or citizenship style, but also has a hidden mediation function for national sentiments and citizenship style preferences. Since religion has both a direct and an indirect influence on national sentiments it can be assumed that modern views on national civic issues closely link a love of God and of the country. Not only is religion a part of culture or a personal preference, it is one of the most important determinants of national and civic views.

The study focused on the findings of discriminant analysis according to which a two-dimensional model provided the best distinction of ethnic, civic and cultural citizenship styles in Georgia. In particular, the analysis showed that national, cultural and religious attitudes can be united into two basic groups, creating two main distinctive factors of citizenship styles. The first dimension unites nationalism, national identity and orthodoxy, while the second links patriotism, collectivism and in-group attitudes. The first dimension is the so called "orthodox" nationalism. Variables in this dimension express rigidity and dogmatism, with more rationalism than sentimentalism. The second dimension includes emotion-related affect and therefore the researchers called it "sentimental nationalism".

These two dimensions provide a reliable distinction for differentiating citizenship style.

Ethnic citizenship style has high scores on the orthodox nationalism dimension, while the cultural citizenship style shows medium scores on this scale; civic citizenship style scores are low. As for the sentimental nationalism dimension, cultural citizenship style has high scores; civic style shows medium scores and ethnic style scores low. Quantitative results showed that 56% of respondents chose a cultural citizenship style; 25% chose a civic style; and 19% chose an ethnic style. However since the population sample was not representative of all Georgians, generalization is not possible.

An analysis of the structure and dynamics of citizenship style is important for studying such complex issues as the relationship between an individual and the state, for migration policy, minority rights and for building an open/inclusive society. The study can be used by government officials and their advisors in political psychology and sociology since the citizenship concept and the analysis of related issues are important for developing democracy. The study has practical value for public policy, to determine how to promote inclusive types of citizenship that are so important for a democratic country, or to identify what encourages the exclusive type – as detrimental to development and to the establishment of an open society.

This study was presented at local and international conferences: in Yerevan in 2012; the Conference of the Eastern Psychological Association organized by the American Psychological Association in New York in 2013; and at the 8th International Conference of the World Interdisciplinary Network for Education and Research in Lisbon.



Georgian readers will soon have the pleasure of reading Materials from Ilia Chavchavadze's Personal Encyclopaedia, dedicated to the prominent Georgian writer and public figure, and ideologist of the Georgian national liberation movement. The book is being drafted within the framework of a grant project by a group of scholars including Mari Tsereteli, Associate Professor at the TSU Department of Journalism and Mass Communications, PhD in Journalism, who is participating on behalf of Tbilisi State University.

MATERIALS FROM ILIA CHAVCHAVADZE'S PERSONAL ENCYCLOPAEDIA

According to her, the project aims to present Ilia's works and activities in all their glory. Writers' personal encyclopaedias are vital for integrating their work into a valuable collection, making their achievements immortal and to preserve a country's cultural heritage. For these reasons famous literary figures' personal encyclopaedias have been published, for example those of Dante, Shakespeare, Burns, Dickens, Goethe, Schiller, Pushkin, Lermontov and others. Such works are welcomed worldwide. We do not have many similar literary works in our culture (the only one, the Ivane Javakhishvili Encyclopaedic Dictionary, was published in 2002).

According to Tsereteli, Ilia Chavchavadze was the first writer whose personal encyclopaedia was drafted in Georgia, as early as the 1980s, at the initiative of the poet, Irakli Abashidze. A considerable amount of work was done at that time, but the editors had to stop the project because of the socio-political situation. The preparation of the project's new concept became feasible for the Ilia Chavchavadze Research Centre when the research group involved in the project were granted the copyright. The project is being implemented with the blessing of the Catholicos-Patriarch of All Georgia, Ilia II. The Ekvtime Takaishvili Charity Fund provides financial support.

Giorgi Abashidze, PhD in Philology and Research Director at the Ilia Chavchavadze Research Centre is supervising the project. Others have been working on the project for several years, including the Centre's Director and philologist, Nino Mamardashvili, while senior scholars at the Centre have also contributed significantly with their efforts. These include Leila Sulkhaniashvili, Manana Baratashvili, Manana Kipiani, and Tamar Mikadze. Other researchers are Nana Zghuladze, and Zeinab Lomjaria. Unfortunately, two researchers who

contributed to this project have passed away – Natela Saghirashvili and Guram Chokhonielidze

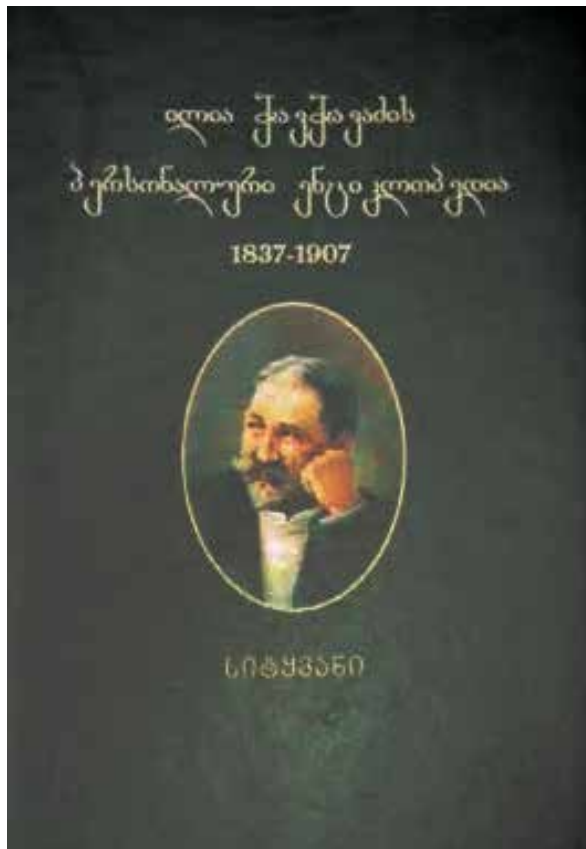
The unique nature of Ilia Chavchavadze's personality is the main focus of the encyclopaedic research. His personal encyclopaedia is not limited to cultural heritage only; the project also aims to present Ilia's public activities and contributions to society. That is why this personal encyclopaedia is unique in many ways, as it seeks to be all-encompassing – for example presenting Ilia's contributions to fields such as banking, to his founding of the Society for Georgian Literacy, the Georgian Drama Society, Georgian theatre, Georgian journalism, his contributions through publishing and editing activities, etc. The encyclopaedia will provide insights on society at that time, as well as the political and cultural environment. It will reflect the overwhelmingly dramatic epoch, including the "Assassination of the century", Ilia Chavchavadze's tragic death. The terrible "Tsitsamuri Tragedy" of 1907 (Ilia's assassination at Tsitsamuri) had a profound impact on subsequent political and social processes in Georgia. Tsereteli observed that working on the project meant a need for reassessing the past in many significant ways, especially the complex and interesting epoch from 1837 to 1907.

The socio-political and cultural environment and public opinion in 19th century Georgia were essential for Ilia Chavchavadze as a writer, public figure and monumental figure, as reflected in his personal encyclopaedia. This multidimensional past per se contributes to the complexity of the research, which requires studying and confirming many events, facts, dates, persons, place names, etc. Furthermore, the team studied a number of primary resources, archival materials (including family archives),



MARI TSERETELI

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periodicals, the vast documentation of different organizations like the Society of the Promotion of Georgian Literacy, as well as theatrical and ethnographic societies and organizations, and online resources. In order to examine the accuracy of certain documents, data and facts had to be cross-checked. The researchers studied Iliia Chavchavadze's story volumes, bibliography, anniversary collections, and memoir literature. They were able to spot and correct certain errors in the bibliographical literature. The scope of the research undertaken covered not only Georgia but the Russian Empire, Europe and the general historical, political, cultural and geographical features of the epoch.

Iliia Chavchavadze's Personal Encyclopaedia (1837-1907) – The Words was a volume published by Universal Publishing in 2010. It describes the research activities undertaken over the four previous years. A presentation of that volume took place at the Iliia Chavchavadze Research Centre on October 5, 2010. This rudimentary publication was the basis for Iliia's personal encyclopaedia. This 738-page book lays out the objectives and determination of the project and outlines the scholarly

knowledge about the writer's life, his literary and public activities accumulated up to that date.

One of the most important findings of the research included famous "personalities" or contemporaries of Chavchavadze, and by studying them in detail the researchers could understand their ideologies and party affiliations, which clearly determined the attitude of certain political groups towards Iliia and his ideological supporters. This work demanded the scholars' greatest efforts, as it comprised far more than just different biographies, but the role of these people in the multidimensional environment where Iliia lived.

Many pages of the book describe the misfortunes of that period and the losses of a number of prominent figures of Georgian society under the thumb of Soviet ideology. These were figures that were part of Iliia's social and cultural era. Naturally, each person was an asset, a virtue – and for this reason, studying "personalities" revives that controversial past as well as studying the reassessed, real and immensely multifaceted picture of the socio-political situation. This clarified past is the main result of the project.

Throughout the project, it became feasible to conceptualize Iliia's publications from different angles, in a way that relates more to current reality. Iliia's works address issues that are widely discussed today, such as the idea of Georgia's independence, individual and national freedom, human rights, social justice, freedom of the press, civic activities, etc. Mari Tsereteli studied Iliia's political letters related to problematic global issues. In addition to being very interesting from a literary point of view, they are also vital to understanding the socio-political picture of the epoch and for establishing valid connections between historical and current events. In 2010 these research findings were presented as "Iliia Chavchavadze's Political Letters for Geostrategic Analysis" by Ms Tsereteli at a conference, Global Transformations and Georgia.

The Words attracted a lot of interest from academic circles; now the completed works of the project and their significance have been received positively by the academic world and the scholars continue to work on the second book, having fully considered all critical remarks and proposals on the first publication. Typical to any encyclopaedic project is the challenging process of searching for resources and working on archive materials and documentation, a process which is still under way. The second volume, Materials from Iliia Chavchavadze's Personal Encyclopaedia will be completed by the end of 2015. It will cover further findings of the research and include all the amendments to the first publication.

The scholars are also working on another book, Iliia Chavchavadze and Georgian writers, which will reassess the literary works and contributions of 19th century Georgian writers. The book will also present certain writers' literary heritage from cultural, ideological and social perspectives, which are relevant to Iliia's works. Apart from famous classics, a number of little-known or unknown writers were studied and analysed in this respect. This book thus aims to present a more complete image of the cultural life of the epoch, considering the socio-cultural and literary environment surrounding Iliia, and most importantly, how this cultural life brought out Iliia Chavchavadze's personality to its fullest expression.



Ilia Chavchavadze and his wife, Olga Guramishvili



Ilia Chavchavadze in the garden of the Shervashidze family in Sokhumi, May, 1903



Students of the University of Petersburg, 1861, standing (from the left): Alexander (Kokhta) Apkhazi, Mikhail Chikvaidze; sitting: Luarsab (Shakro) Magalashvili, Ilia Chavchavadze, Nikoloz Alexi Meskhishvili



Ilia Chavchavadze (third from the left in the first row) among the members of the State Council



Funeral procession moving towards Sioni Cathedral

SECURITY STUDIES AT TSU



ALEXANDER KUKHIANIDZE

Professor of Political Science at the Faculty of Social and Political Sciences; member of the Georgian Political Science Association (GPSA); Director of Transnational Crime and Corruption Centre and serves as a visiting professor at Malmö University within the program Erasmus Mundus EMBER. In 2013, was visiting professor at the Swedish Institute at Malmö University. In 2010-2011, he was an invited scholar at the Monterey Institute of International Studies (California, USA); in 2003 he was an invited scholar at Freie Universität Berlin; 2000-2001 he led the Local Government Reform USAID Project as Deputy Director; he was Fulbright Visiting Professor at Mount Holyoke College and Johns Hopkins University (USA) in 1998-99 and has been working on democratization and civic engagement issues since 1990. Since 2002 he has studied organized crime, smuggling, corruption, security and armed conflicts. He has participated in and supervised international conferences and authored international publications on organized crime, corruption, security and armed conflict. Currently he lectures on Political corruption and organized crime; Political research methods; Modern safety studies; Emergency management; Introduction to Political Science; and Social science methods.

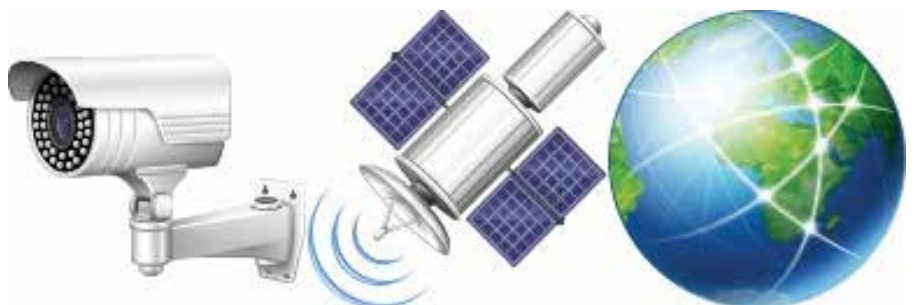
After the collapse of the Soviet Union, many reports were published worldwide on issues of transition from totalitarianism to democracy. However, in the second half of the 1990s, along with democratization, corruption and organized crime increased, and in Georgia these began to threaten the security of the country at all levels. Political scientists evoked the specter of a “failed state”. In 2002 a research program was launched with an initial focus on problems of corruption and organized crime, and in 2003 anti-corruption and anti-criminal reforms in Georgia began.

Several projects have been implemented at Tbilisi State University under the guidance of Professor of Political Science, Alexandre Kukhianidze, in the Faculty of Social and Political Sciences. With support from the U.S. Department of Justice, research on “Smuggling through Abkhazia and the Tskhinvali Regions of Georgia” was carried out in 2003-2009. Another study was carried out simultaneously, “Smuggling in Radiological and Nuclear Materials via Georgia” with support from the U.S. Department of Energy. Both projects were implemented in collaboration with the Terrorism, Transnational Crime and Corruption Center (TraCCC) at George Mason University, where Professor Louise Shelley is Director.

Key findings ascertained that organized

crime and corruption are integral parts of national security problems, but also that armed conflicts in Abkhazia and the Tskhinvali Region, and Russia’s position towards Georgia are all elements of transnational crime and represent a component of global security. Therefore, following the 2008 Russia-Georgia war, Alexandre Kukhianidze’s research interests covered several new security concepts.

Security issues have significantly increased after the Cold War. A research project on “Theorizing Non-Traditional Threats and Challenges for National Security” was implemented in 2010-11 and financed by the Carnegie Endowment at the Monterey Institute of International Studies in collaboration with William C. Potter, Director of the James Martin Center for





Nonproliferation Studies at the Monterey Institute of International Studies.

Following the Warsaw Pact and collapse of the Soviet Union, with the end of the Cold War, all fears and threats about a Nuclear Armageddon faded, but old approaches to security guarantees began to change. Rapid globalization paved the way for new threats such as nuclear smuggling, transnational organized crime, cybercrime, organ trafficking, money laundering, and others. Publications about new threats began to appear in the 1980s, and since the 1990s the treacherous results of “non-traditional” threats were becoming painfully evident. Traditionally, security studies had been discussed in connection with the nation state, considered the key provider of security. Civil society had been seen as a passive object or was deemed insignificant, along with business and local government bodies. Traditional security concentrated on geopolitics, military force, and the foreign policy of nation states. In the 1990s, western political literature began to revise traditional security approaches, however, as developed and developing countries alike realized that non-traditional threats include economic

growth problems, poverty and development rather than only military blocs and balancing superpowers.

These concepts largely determined the expansion of national security in two directions: first, analyzing the interrelation between global, regional and local problems; and second, focusing on relations between civil groups and peoples. Theoretically,

Security studies were traditionally found within disciplines such as international relations. Today, however, not all threats can be covered by this discipline and “security” is not subject to a simple definition anymore. Different, multidisciplinary approaches are needed to analyze natural calamities, corruption, technogenic hazards and organized crime.

the broadening of the security concept has increased the complexity of understanding what modern national security is and what priorities it has in the post-Cold War era.

Security studies were traditionally found within disciplines such as international relations. Today, however, not all threats can be covered by this discipline and “security” is not subject to a simple definition anymore. Different, multidisciplinary approaches are needed to analyze natural calamities, corruption, technogenic hazards and organized crime. Political science also plays a strong role here. “New” and “non-traditional” studies in the field of security have many shortcomings. What is “new” and “non-traditional” today will be “old” and “traditional” tomorrow, for example cybercrime. Similar terms can characterize the essence of modern security studies only temporarily. Indeed, modern national security envisages shifting the emphasis from military to civil security. Along with the state, it also engages civil society organizations as security providers and includes certain types of fighting against organized crime and corruption. Today, the struggle against organized crime and

corruption includes civil society and security priorities are constantly changing along with shifting sources of threats.

Now organized crime represents one of the main threats to national and international economic security; its impact on the international financial network and national economies has grown, and connections between the perpetrators are increasing. The fact that criminals can find shelter in foreign countries and hide their illegal incomes abroad further complicates the activities of law enforcement agencies who try to control financial flows, check documents and arrest criminals. As a result of money laundering activities by organized crime groups, state budgets are losing a large part of their tax revenues. According to a report from the Russian Interior Ministry, organized crime groups control a great part of over 200 Russian banks and half of their capital. In Russia, businesses frequently become targets of extortion, robbery and even murder. Business people spend over 30% of their income on providing security to their own staff and products. This 30% goes into the pockets of the gangsters, from whom they are protecting their own businesses, and forcing them to hide their income from tax services.

Global organized crime even poses a threat to political institutions, especially in authoritarian regimes. For example, in Peru and Columbia, local criminal cartels supply weapons and render financial assistance to anti-governmental armed factions, consequently weakening the government, in order to freely produce and export cocaine. The Sicilian Mafia uses its financial strength to bribe politicians, judiciary and police,

physically distancing itself from those state and public figures that refuse to cooperate with it. Fear towards organized crime causes citizens to doubt that democratic political institutions can successfully cope with criminality; this leads to support for political radicalism and stricter, anti-democratic policies.

The next stage of the program included a new project "Civil Security in Sweden: Lessons for Georgia?" with the Swedish Institute in 2013-2014. Learning about civil security experience in Sweden, and how it cooperates with other countries of the Scandinavian/Baltic Sea region, helped better understand security challenges for Georgia, its relations with other countries of the Caucasus region, and their role in the global security system and common security interests. It helped better understand why the old national security system was inefficient in the case of Georgia, especially for conflict resolution in Abkhazia and South Ossetia, and during the 2008 Georgia-Russia war.

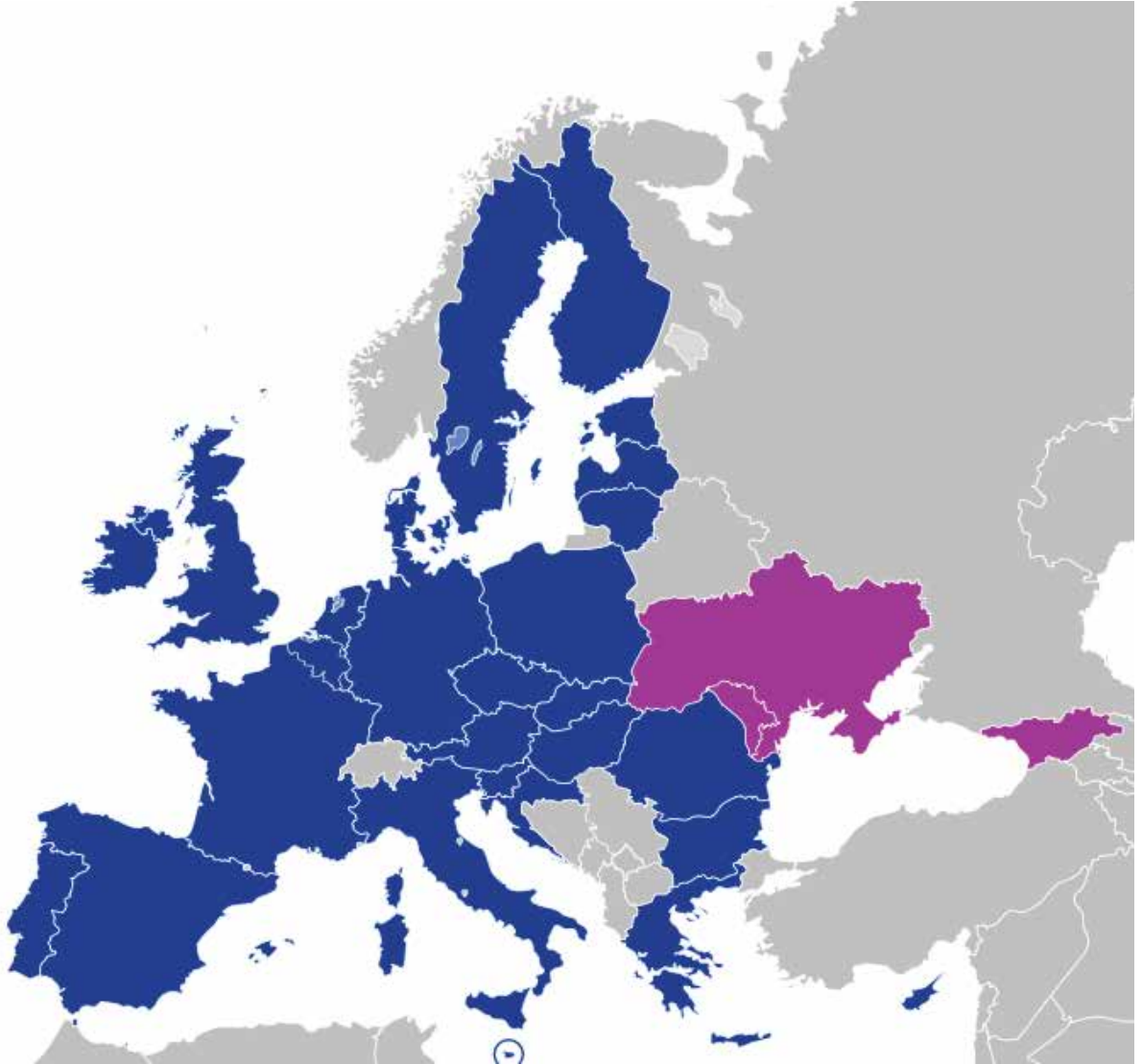
The Swedish civil security system is built on "soft power" policy, whereas Georgia's civil security system was based on "hard power", left over as a traditional militaristic approach from the Cold War era. To increase the efficiency of the Georgian security system, more attention should be paid to non-traditional approaches – individuals and society should turn back to security, with stronger elements of civil security and soft power. This project was implemented with support from the Department of Global Political Studies at Malmö University, with Professors Karina Vamling and Karin Sarsenov.

These projects have resulted in

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several dozen scientific papers published by Alexandre Kukhianidze and his team, and results were presented at a number of international conferences and seminars, mostly in the United States, EU Member States, Turkey, Azerbaijan and Russia. Publications have been cited in international journals and are also reflected in Google Scholar's citation indices (<https://scholar.google.se/citations?user=9anIxBEAAAAJ&hl=en>).

Today, Alexandre Kukhianidze's research interests focus on Russian nationalism, extremism and Russia's war in Ukraine as a threat to global security.



THE EUROPEANIZATION OF GEORGIA'S NATIONAL SECURITY

Security issues are becoming increasingly significant in today's world, and on its way to European integration Georgia should carefully consider the strengths and weaknesses of its own national security and its compatibility with European security concepts.

To this end, research on “The Europeanization of Georgia’s National Security” was carried out by Lela Janashvili, Associate Professor and Head of Internationalization and Scholarly Research Department at the TSU Faculty of Law. This research was supported by the Open Society Foundation within the framework of the Global Faculty Grants Program in 2013-2014. It was undertaken at the PublicLaw

and Political Science Department of the Autonomous University of Barcelona, Spain. Joan Lluís Pérez Francesch, Head of the Constitutional Law Department and of the research group “Freedom, democracy and the transformation of states”, supervised the project.

“Safer Europe in a better world” is the motto of Europe’s first security strategy adopted on December 12, 2003. According



LELA JANASHVILI

Associate Professor at the Faculty of Law of TSU; graduated in legal studies from Tbilisi State University; in 2003 she became a candidate of legal sciences (equivalent to a PhD degree); in 2004-2009 served as a researcher at Tinatin Tsereteli Law Institute; in 2009-11 was a post-doctoral Fellow within the Spanish Ministry of Foreign Affairs scholarship program, was Visiting professor at the Department of Public Law and Historical-Legal Sciences and School of Security and Prevention at the Autonomous University of Barcelona. Since 2010 she has been a member of the research centre, "Freedom, security and transformation" at the Autonomous University of Barcelona.

to Lela Janashvili, with the help of Europe's security strategy the EU believes that adapting its strategy to existing realities will help tackle significant global issues like terrorism; the spread of weapons of mass destruction; weak states; organized crime; and regional conflicts. These are the priorities of the European security concept, which holds every state responsible for establishing its own security concept as a key characteristic of a modern constitutional state.

This is true for Georgia as well. National security is a very complex issue and should be examined across various dimensions; it includes other problematic issues that need to be carefully analysed. Today, Europe has to face challenges that did not exist in the 20th century such as global terrorism, transnational crime, regional and armed crime, and intensified separatist tendencies. The concept of Georgian security is based on the analysis of a complex set of interests and events, internal and external security threats and challenges.

The research was carried out by applying a comparative legal method using European and Spanish security concepts. Throughout the project, Spanish experts organized several round tables where they talked about global security issues and the roles of states in this respect. Research findings include the experts' conclusions (Professors: Joan Lluís Pérez Francesch, Thomas Hill Marquez, Manuel Balbe Malol, Roser Martinez and

Montserrat Iglesias). According to them, the Georgian security concept is a "window" through which security issues can be analysed for small transitional countries within a harsh neighbourhood, i.e. when small countries must cope with larger and sometimes hostile neighbouring countries. In the case of Georgia, threats of regional conflicts in the region are particularly noteworthy and pose a danger to Europe as well, whether they occur on the EU territory or near its borders.

The present situation in this region – including cases of regional terrorism; unresolved conflicts between Armenia and Azerbaijan; an unstable balance of power and the constant risk of reoccurring wars; serious threats of destabilization at Georgia's northern borders with Ingushetia, Dagestan, etc; and other visible or invisible threats—all indicate that Georgia must keep an efficient security system in place. Needless to say, a well-functioning security concept enables the country to set the right priorities, while associating Georgian national security with Europe.

Research also addresses the part of a Georgian security concept that was pertinent for the 2008 conflict. In August 2008 the Russian Federation's open and large-scale military aggression against Georgia made it very obvious that even in today's world certain states turn to hostility as a main way to achieve their goals. The August 2008 aggression, followed by the occupation of Georgian territory, then the occupation by Russian military forces and infrastructures on Georgian territories, all significantly deteriorated the security environment. This war made it perfectly clear that the Russian Federation has not accepted the sovereignty of the Georgian state.

According to the Spanish scholars, the main strength of a security concept is recognizing the fact that state security should not be dealt with only through military and diplomatic action. Indeed peace entails economic development and interdependence, energy dependence and certain forms of internal governance. The main weakness of Georgia's national security is its strong focus on political messages rather than on strategic analysis. Despite the number of its strengths, the concept creates illusory expectations.





Open, large-scale military aggression carried out by the Russian Federation against Georgia in 2008 has made it clear that even in modern world such aggression remains the means of achieving political goals for some countries.

The Spanish researchers divided the weaknesses of the present Georgian national security concept into internal and external threats. Internal threats include a lack of discussion on economic problems and political issues, a lack of strategy for sustainable economic growth, as well as poverty and unemployment. External weaknesses include a neglect of the volatile environment in the Caucasus. The present concept does not properly address the possibilities for resolving relationships with neighbouring countries. According to this concept, the strategic environment of Georgia is linked to the

country's features, such as its small size and weaknesses, to political instability, the volatility of the region and its dependence on a global economy.

A new reality emerged with the signing of the European Association Agreement, which will provide key suggestions for a comprehensive concept to improve Georgia's democratic environment, concentrating on foreign diplomacy to resolve security issues with immediate neighbours, and tackling poverty and increasing employment. These suggestions will make the new Georgian security concept more viable and will contribute to the establishment of a

stable state. The most significant tasks of modern constitutional states are to maintain a democratic legal regime and protect the basic rights recognized and guaranteed by the Constitution. Today, by signing the Association Agreement, Georgia has made the European choice, a choice for civilization, a process in which we have been involved for centuries.

The research findings were presented at the Institute of Political and Social Sciences (<http://www.icps.cat>) on December 17, 2013 and issued in Spanish in the university's online periodical: <http://www.icps.cat/archivos/Workingpapers/wp325.pdf>

TEXTBOOK ON PROBATION LAW



MORIS SHALIKASHVILI

Associate Professor at the Faculty of Law of TSU; graduated Legal studies from Tbilisi State University; 1997 – 2002 studied at the Law Faculty of the University of Hamburg (Germany), went on to complete postgraduate and PhD studies at the same university. Served as Adviser to the Public Defender of Georgia, Chief specialist at the Justice Department and Analyst at the Department of Public Relations; worked in the Supreme Council of Justice of Georgia, as Consultant at the Division of Legal Issues and Analysis. Since 2013 when he founded a joint research centre at TSU and the Ministry of Corrections, he has remained a member of The Prison Study Centre. Since January 2014 he is Deputy Dean of the Faculty of Law at TSU and is author of about 20 scholarly publications and grant projects.

Students have become increasingly interested in penitentiary and probation law, which has led to the creation of a Georgian textbook, Probation Law. A co-author of the textbook noted that the popularity of the previous publication, Penitentiary Law released in 2014, written by Moris Shalikashvili, Givi Mikanadze, and Maia Khasia, led to the idea of the new textbook. Penitentiary Law is very popular in academic circles, and with practicing lawyers and students. Importantly, several other Georgian universities have included this textbook in their academic syllabi. The authors of the new book are Moris Shalikashvili as well as Giorgi Arsoshvili, Head of the National Probation Agency, and Givi Mikanadze, Associate Professor at the University of East European Studies and Project Manager of the European Council Department of Criminal Law. They carried out research on probation law in 2014-2015 and published the textbook in 2015.

The studies and the publication were supported by Prison Reform International (PRI), the UK Department for International Development (DFID) and European Union, and addressed “Criminal Justice Reform in Georgia”. Project implementation is being carried out by an Austrian company – Hulla & Co. Human Dynamics KG. Studies were conducted in two directions: the analysis of existing legal acts and their compliance with



international standards, and a criminological analysis of the execution of non-custodial sentences.

The application of alternative sentences has not been properly developed over recent years and a “zero tolerance” policy in every prison has badly affected the penitentiary field, as well as society in general. For a better introduction and promotion of an alternative sentence policy, it was vital to carry out proper studies and an exhaustive analysis. As studies suggest, giving an alternative sentence greatly depends on the possibilities of its being carried out, a subject to which the scholars focused special attention and drew up useful recommendations.

One recommendation addressed how to reinforce the principle of sentence individualization and enhance psychological rehabilitation programmes. The number of social workers and psychologists in the penal system is far from adequate. According to the scholars’ recommendations, the State should increase measures to speed up the process to initiate risk assessment and sentence individualization, and make needs-based psychosocial rehabilitation programmes more available.

Special attention must be paid to the recommendation for “non-custodial sentences and probation” that addresses cancellation of fines prescribed by Georgian law. This practice is very discriminatory towards probationers and is not in agreement with international standards. According to recommendations for making the rehabilitation process of paroled prisoners more effective, social workers should make intensive efforts to prepare prisoners for release; it is important for them to understand the family and social environment beforehand.

Following the requirements of Article 20 of the Tokyo Rules, the scholars evoke the complexities of the probation system and that it should always be possible identify the needs of the system as well as to analyse and appropriately prioritize those needs. The phenomena of house arrest and electronic monitoring are novelties to Georgian probation law and to the legal field in general.

Stemming from the amazing changes that technology has initiated in all aspects of human life in the new millennium, it is essential to keep up with these changes and support further developments in each field. The gradual introduction of new computer and communications technology to criminal law

has led to improvements in protection, control and monitoring, particularly in the penitentiary system and for applying sentences. Different types of electronic monitoring will help law enforcement authorities exercise better supervision, contributing to the effectiveness and appropriateness of sentences. From the scholars’ perspective, at the initial stage, only house arrest should be used with juveniles, and should be executed by the National Probation Agency. The judge should have the authority to sentence juveniles from six months to one year’s house arrest with electronic monitoring. Such alternative forms of punishment ensure the execution of a sentence without removing a juvenile from his/her community, family and school, which are indispensable for his/her social integration and education.

According to Moris Shalikashvili, the textbook Probation Law aims at students, employers in the National Probation Agency and the general reader. It is part of the academic courses so that students understand these issues and are more competitive on the job market. Plans are being made to study other specific institutions like probation law for related postgraduate thesis work, and to further develop specialized legal fields.

PROBATION



LIBERALIZING TRENDS IN GEORGIAN CRIMINAL LAW



NONA TODUA

Associate Professor at Tbilisi State University and former Chief Researcher in the Laboratory of Criminal Law and Criminology Department; was Docent and Associate Professor at the Caucasus University; Associate Professor of the Criminal Law Department of Georgian Technical University; Head of the Criminal Law Department of the Caucasus School of Law; and has authored more than 20 textbooks, monographs and professional publications.

In 2014, the Open Society-Georgia Foundation sponsored a project entitled Liberalizing Trends in Georgian Criminal Law organized at the initiative of a group of TSU Law Faculty Professors.

As TSU law professors clarify, the incentive to undertake such a project was to address the tendencies prevailing in Georgian legislation since 2004. The authoritarian influence on Georgian legislators was reflected by a number of changes, for example more acts were criminalized; the composition of already existing crimes were expanded; penalties were changed in such a way that the judge was not entitled to pass individualized punishments; and issuing fines, as additional punishments, became unfairly common. Furthermore, the principle of absorption while having the case of several crimes was changed into the rule of accumulating crimes.

The Head of the project, TSU professor, Doctor of Law, Nona Todua stated that the aim of the project was to provide lawmakers with recommendations contributing to the liberalization process of criminal law. Since 2013 a liberalization process began in Georgia, but a number of steps must still be taken, in the following manner: 1. decriminalization of individual acts both from a legislative point of view and the execution of justice; 2. sentence liberalization; expansion and improvement of alternative sentences; 3. sentence liberalization to make it proportionate to the seriousness of the offense; 4. sentence liberalization to grant the court more opportunities to pursue the principle of individualization. The application of conditional sentencing, which was so drastically limited by legislative changes after 2004, should be significantly extended.

In order to prepare relevant recommendations, scholars worked on the project with the collaboration of Giorgi

Amiranashvili, PhD in Law, for one year. They completed several works such as The issue of decriminalizing certain acts, The issue of further liberalization of criminal law, and The institute of the conditional sentence.

As a result of legislative changes implemented in 2007, the judicial institute was attached to the plea bargain and suspended sentences gained the wrong fiscal value, which in fact laid the foundation for the unfair application of conditional sentencing. Meanwhile, conditional sentencing has become a convenient way of concealing insufficient evidence and improper qualification of acts. Todua's work, The institute of conditional sentence also discusses how courts were prevented from using alternative sentencing due to the attachment of conditional sentence to a plea bargain. According to Mzia Lekveishvili's (PhD in Law) thesis at TSU, The significance of the individualization principle during sentencing, when choosing a sentence the least severe punishment should be given priority. Hence, if possible, severe sentences should be pronounced less frequently. A sentence ought to deter the actions of a criminal without causing more damage, and if possible by encouraging the social reintegration of the person. In her work, this expert criticizes the legislative change adopted in 2007 that meant accumulating crimes in cases of having several offences. This alteration has, practically, distorted the principle of individualization. When committing several minor offenses an accumulated sentence might be equal to or even more severe than the sentence for committing one truly serious crime.

In his work, The problem of liberalism and the state's right to punishment in criminal philosophy, the scholar of the project, PhD in law and TSU Emeritus, Guram Nachkebia discussed three main definitions of the term "liberalism" as 1) philosophical, 2) economic and 3) political.

The political aspect of liberalism means that an individual is a free human being and restriction of his/her freedom is deemed inadmissible. Meanwhile, liberalism was a political ideology implying a significant breakthrough in the policy of criminal justice.

Notwithstanding several variations of liberalism, all of its branches recognized the fact that individual freedom was absolute, and the state was not entitled to limit this freedom. In consequence, the author believes that liberalism needs some amendments in today's reality, as freedom that is not associated with a positive responsibility is nothing but an arbitrary power as opposed to a true freedom. To conclude, a modern interpretation of liberalism should be based on the unity of freedom and responsibility.

In her scholarly work, *The role and the significance of alternative sentencing in criminal law and judicial practice*, PhD in Law and TSU Professor, Maya Ivanidze talks about several kinds of punishments (fines, community work, restriction of

freedom) that officially exist but that have not been applied in Georgian legal practice throughout the years. The scholar believes that the punishments discussed in her work should be definitively put into practice.

Ketevan Mchedlishvili-Hedrich, holds a PhD in Law and is a scholar at Berlin-Brandenburg Academy of Sciences and Humanities, and was an invited professor to the TSU Law Faculty. She is Associate Professor at the Georgian University working on a thesis, "The legislation and legal practice of foreign countries with respect to alternative punishments and comparative legal analysis of those countries and the Georgian legislation." She points out that legislation in Germany, France, England and The United States is equipped with juvenile justice educational and disciplinary sanctions to protect a juvenile that committed a crime for the first time from receiving a sentence. Such practice should be adopted in Georgian legislation as well. House arrest as an alternative to imprisonment can be effective

for white collar offenses, traffic offenses and minor unintentional crimes. However, it is not suitable for preventing violent crime (especially domestic violence) or sexual offences. Also, house arrest and electronic monitoring are sometimes not proportional to the crime and may have negative effects with the juveniles committing less serious crimes.

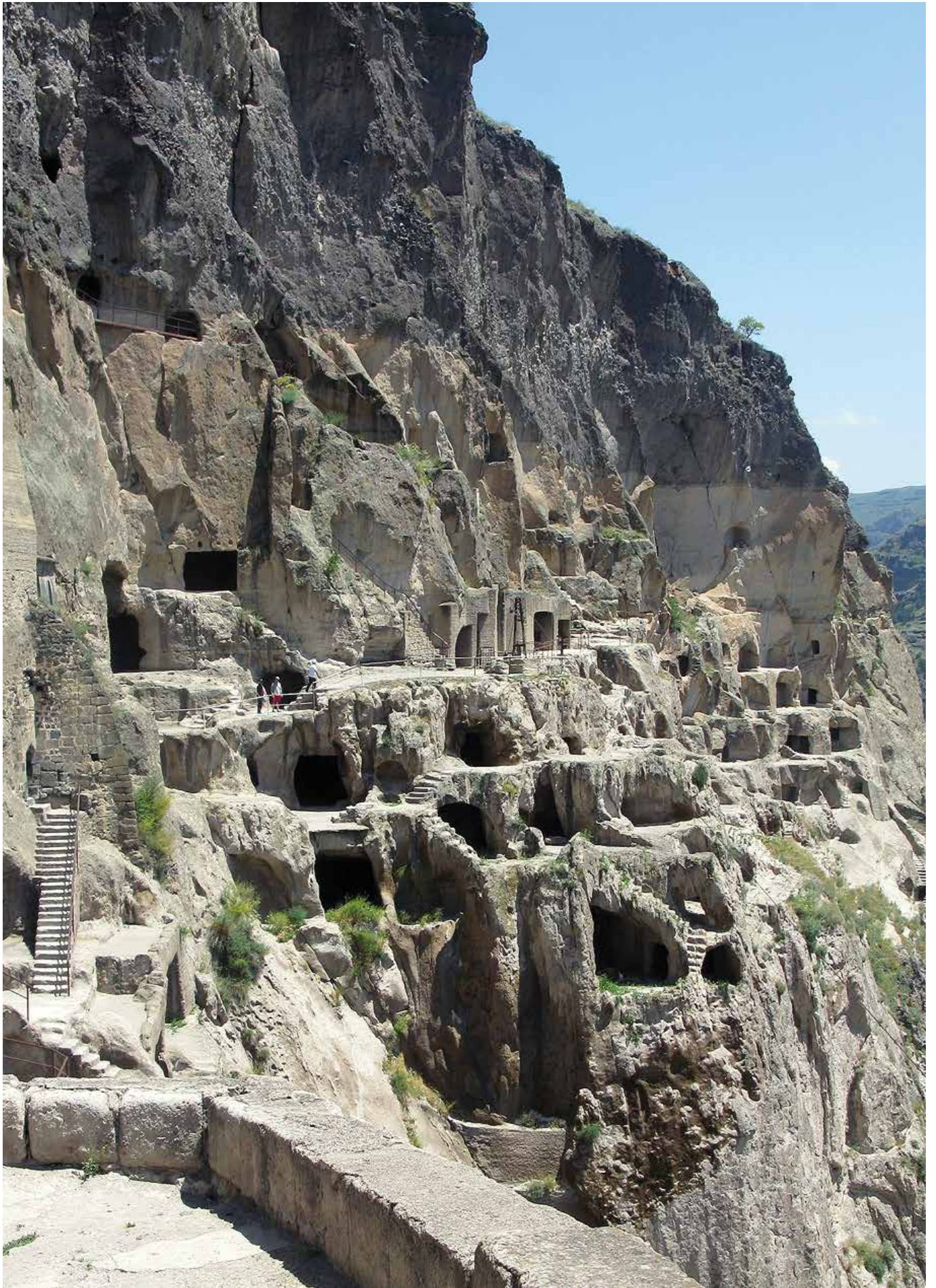
As a result of the research, the team concluded that there are a number of flaws in Georgian criminal law in terms of applying certain types of sentences that prevent the re-socialization of the offender. In this respect, community service is very noteworthy. It means engaging a convicted person in unpaid labour, which will be determined by the Probation Office. Temur Tskitishvili, Assistant Professor of the Law Faculty, project scholar, stated in *Considering the principle of proportionality while passing sentence*, that community service can last from 40 to 800 hours with an eight hour maximum per day. However, the fact that the service is unpaid and that a convict has to work for eight hours a day without any reward, even a symbolic one, prevents an individual from appreciating hard work or preparing himself/herself for an independent work life. In order to achieve the goal, it is important to pay convicted persons for their work. In addition, when sentencing a type of community service, the dignity of a convicted person should be taken into careful consideration. It is crucial to consider a person's skills and abilities when choosing a relevant community service.

Recommendations from the study should assist legislators to take the following steps:

- a. to free the Georgian Criminal Code from norms that are better moved to the Administrative Code;
- b. to develop legislation that empowers the judge to apply the principle of individualization, as well as alternative punishments and conditional sentences; and
- c. to establish a trend where not only the prosecutor but also the victim abstains from prosecuting.

These university professors point out that besides legislation, the project will be very beneficial for practicing lawyers, professors and teachers, as well as the general courts and the Constitutional Court.





GEOLOGY AND PROBLEMS OF THE VARDZIA CAVE MONASTERY COMPLEX

The Vardzia monastery complex is located in the extreme southwest of Georgia on the left bank of the Mtkvari River near the Turkish-Georgian border. It is 1300 m above sea level and belongs to the Aspindza Municipality of the Meskheti Region. The monastery dates to the 12th-13th centuries (1156-1203). Since 2007, by nomination of the Ministry of Culture and Monument Protection of Georgia, the monument is on the provisional list for inclusion in UNESCO's World Heritage List. Today this cultural heritage monument faces serious threats however.



BEJAN TUTBERIDZE

Head of the Geology Department of the Faculty of Exact and Natural Sciences at TSU, Professor, Doctor of Geology. He is Chairperson of the Academic Council, working at TSU since 1971. His research fields are petrologic-geochemical studies of neogenic-anthropogenic volcanic and volcanogenic-sedimentary formations in Georgia and the establishment of the regularity of their distribution in time and space; volcanic equipment monitoring; studies of post-volcanic hydrothermal processes; and ore and non-ore mineralization processes. Bejan Tutberidze is the author of significant international publications.

Professor Bezhán Tutberidze, Head of the Department of Geology at the TSU Faculty of Exact and Natural Sciences, and Doctor of Geological Sciences, has studied the geological problems of the Vardzia monastery complex for several years. The monolithic city of the Vardzia monastery complex has been endangered for centuries and is still at risk of endogenic (earthquakes, tectonic movements) and exogenic (erosion) geological processes. Several earthquakes have taken place in the region, of which the most disastrous was in 1283 when a 15-meter layer broke away from the wall of the complex and two – thirds of the total area was damaged. Aggressive exogenic processes actively cause bedrock disruption as well, with sharp changes in climatic conditions – especially rain, snow, snow runoff and groundwater – that destroy this massive rock city. In addition to geological processes, armed conflicts that the monastery faced for centuries contributed to its destruction. Vardzia is an excellent example of the unity of a volcanic and a cultural landscape, characterized by a complex geology.

Each year the National Agency for Cultural Heritage Preservation carries out rehabilitation work to protect the monument; however these need to be accelerated and expanded to preserve the monument. The government has developed a comprehensive program for the survival and development of the Vardzia monument, a program with multiple components; it is being implemented by Georgian and foreign experts and will include rock fall prevention. These works are led by Claudio Margottini, Italian engineering geology expert and consultant at UNESCO, and Vice President of International Consortium on Landslides, Professor of Engineering Geology for the Conservation of Cultural Heritages. Under an agreement concluded between the National Agency for Cultural Heritage Preservation of Georgia and TSU, the Department of Geology carried out research to determine the mineralogical composition and structural and textural peculiarities of bedrock at Vardzia.

Samples of the bedrock selected by international experts from the Vardzia complex underwent studies to establish the



general geological character of the site, with a detailed petrological investigation; full standard silicate chemical analysis of rocks and petrochemical interpretation of the results; identification of rocks; and possible secondary replacement processes. Vardzia was hewn in a volcanogenic-sedimentary suite built up from facies of a lower pyroclastic subsuite from the Late Miocene "Goderdzi suite".

"From a lithological point of view, the Goderdzi suite is divided into pyroclastic and lava subsuites. The Vardzia complex is hewn into a 40-60m thick massive, sometimes cross-bedded tuff packet. Macroscopic examination shows that the tuffs are light gray, white or yellow, light, porous rocks with enhancing features. They are easily subject to processing and are characterized by a high degree of cementation and resistance to weathering agents. Visual inspection makes it possible to view various-sized fragments of rock-forming minerals, rocks and white pumice. Microscopic analysis shows a variety of fragments in Vardzia-type tuffs: lithoclastic (rock fragments), crystalloclastic (crystal and mineral fragments), vitroclastic (volcanic glass fragments) and mixed varieties. Tuffs are characterized by intricate grain-size composition (by size of fragments). Lithoclastic and litho-crystalloclastic tuffs of psammite-psephite types are more

The Vardzia tuffs are covered by 18-25 m tuff breccias. According to the microscopic analysis and chemical data, the breccia composition corresponds to andesites (basically) and dacites. Volcanic breccias create steep rocky slopes with a system of joints overlying the tuffs. Erosion caused by seasonal water flows and temperature variations in tuff-breccia rocks reduces the quality of rock cementation, promotes ever-widening cracks and accelerates the process of selective weathering of bedrock, which ultimately disturbs the stability and balance of the slope and creates the conditions for slope disruption, including landslides and avalanches.

commonly found than pelite-alevrite vitrocristallic tuffs. According to the data of a complete silicate chemical analysis, the tuff composition corresponds to andesites and dacites. The presence of clays can be found in replacement products. The tuff is ignimbrite by nature ('ignimbrite' – from the Latin igni – (fire) and imbri – (rain), pyroclastic rocks welded at a high temperature), sedimented in sub-continental, shallow lake basins and known as "Vardzia type tuffs".

The Vardzia tuffs are covered by 18-25 m tuff breccias (a volcanogenic sedimentary rock consisting of angular or, less frequently, slightly rounded fragments of extrusive rocks that range in size from blocks of several cubic meters to particles the size of grains of sand, cemented together by fine volcanic ash). According to the microscopic analysis and chemical data, the breccia composition corresponds to andesites (basically) and dacites. Volcanic breccias

create steep rocky slopes with a system of joints overlying the tuffs. Erosion caused by seasonal water flows and temperature variations in tuff-breccia rocks reduces the quality of rock cementation, promotes ever-widening cracks and accelerates the process of selective weathering of bedrock, which ultimately disturbs the stability and balance of the slope and creates the conditions for slope disruption, including landslides and avalanches. Besides the collapse of small separate fragments provoked by the non-homogeneous composition and uneven cementation of rocks, there is an increasing hazard from large block failure that could substantially alter the structure of the monument and endanger visitor safety.

Recommendations were made to stop the development and action of natural hazards of geological nature. Studies must be carried out to assess the physical-mechanical and collector properties of the breccia-suite rocks, and to determine replacement quality and speed. To maintain the balance of the steep slope of the monastery complex and avoid side and abyssal erosion in breccia-suite cracks and fractures, it is crucial to intensify the regulation of water flow and reinforce riverbeds. Special attention should be given to the dynamics of chemical weathering processes in the tuffs of the site, as the products of these processes are clays, which significantly weaken the structure of rock and create a serious potential for the tuff to disintegrate.

The results of this research were presented at the National Agency for Cultural Heritage Preservation of Georgia in December 2014. In 2014 Professor Tutberidze participated in IAEG XII Congress in Torino – "Engineering Geology for Society and Territory". An article about the geological problems of the Vardzia cave monastery complex was published in the congress publications. It was included in Thomson Reuters database: Engineering Geology for Society and Territory – volume 8, Preservation of Cultural Heritage, 2015). In 2012 and 2014 Professor Tutberidze made presentations at international meetings dedicated to the survival of Vardzia (October 16-19, 2012, Vardzia; July 7-9, 2014, Vardzia).



TBILISI STATE UNIVERSITY AND THE UNIVERSITY OF GÖTTINGEN CONTINUE MULTI-YEAR COLLABORATION

Few people may know that since its foundation in 1918, the first Georgian university has had relations with leading European universities. Just a year after its foundation, two brothers – Ivane and Alexander Nikuradze – left for Germany to take up their studies at the University of Göttingen, which was known for its institutes of mathematics and physics. Ivane Nikuradze soon became the founder of modern hydrodynamics and aerodynamics; as a distinguished student of Professor Ludwig Prandtl, he successfully defended his PhD thesis on “Observations on Speed Distribution in Turbulent Flows”. He and his doctoral advisor participated in the establishment of the Kaiser Wilhelm Institute, today known as the Max Planck Institute. Later he was appointed Head of the Department at the same institute. Ivane Nikuradze was the first Georgian student to arrive in Göttingen as a citizen of independent Georgia. As a result of his diligent work, he laid the foundation for a successful launch of relations between the two universities. His younger brother, Alexander Nikuradze, became Professor of solid state physics at the Universities of Berlin and Munich.

Since 2010 this century-old relationship between Tbilisi State University and the University of Göttingen has further intensified. According to an agreement signed by the two universities, students can accumulate the credits necessary for PhD programs in both universities, and after defending a thesis at Tbilisi State University they receive PhD degrees from both universities.

Presently, seven postgraduates from the TSU Faculty of Exact and Natural Sciences are carrying out doctoral studies at the University of Göttingen. Among them is Maia Svanadze, who began her studies at the University of Göttingen in 2010 as a PhD student. There she took part in a scientific project in the Institute of Mathematics – “Mathematical Structures in Modern Quantum Physics” – and simultaneously

According to an agreement signed by the two universities, students can accumulate the credits necessary for PhD programs in both universities, and after defending a thesis at Tbilisi State University they receive PhD degrees from both universities.



MAIA SVANADZE

PhD in Mathematics, Post-PhD at the Faculty of Exact and Natural Sciences; Research interests include mathematical theories of viscous elasticity and thermo-elasticity. She is the author of 16 scientific articles published in international scientific journals and her works have been cited 47 times.



worked on her thesis – “Non-Classical Problems of Linear Elasticity Theory”.

Georgian scientists have made a significant contribution to the three-century development of the elasticity theory. The achievements of the Georgian school of mathematics and research methods created by Niko Muskhelishvili, Ilia Vekua and Victor Kupradze in elasticity theory are internationally recognized. The scientific results of this school have made a huge contribution to the development of classical elasticity theory and generalized the boundary integral equation method (method of potentials). This method enables the study of both classical elasticity theory and modern mathematical theories for elastic materials with microstructure.

The very first article in elasticity theory by a Georgian mathematician, Niko Muskhelishvili, was published in 1915, exactly 100 years ago.

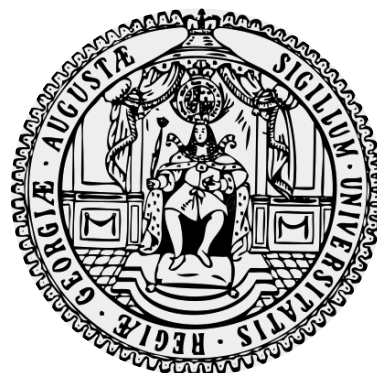
Today, the wide use of elastic materials in engineering, technology, geophysics, medicine and biology necessitates the creation of create mathematical models of these materials for intensive study. Over the last decade several interesting models have been created, taking several fields into consideration. This is why Maia Svanadze decided to study the problems of these models using a research method developed by the Georgian school of mathematics. She researched the boundary value problems of the theory of linear thermo-viscoelasticity for Kelvin-Voigt materials with voids. In particular, she established Sommerfeld-Kupradze type radiation conditions and obtained Green's formulas and integral representations of the Somigliana type of regular vector and classical solutions. The uniqueness theorems of internal

Georgian scientists have made a significant contribution to the three-century development of the elasticity theory. The achievements of the Georgian school of mathematics and research methods created by Niko Muskhelishvili, Ilia Vekua and Victor Kupradze in elasticity theory are internationally recognized. The scientific results of this school have made a huge contribution to the development of classical elasticity theory and generalized the boundary integral equation method (method of potentials).

and external boundary value problems of steady vibrations in the linear theories of viscoelasticity and thermoviscoelasticity for Kelvin-Voigt materials with voids were proved; basic properties of plane harmonic waves in the linear theory of viscoelasticity for Kelvin-Voigt materials with voids were also established.

These research results were published in peer-reviewed scientific journals, particularly *the Journal of Elasticity, Mechanics Research Communications and the Journal of Thermal Stresses*.

Six more researchers from TSU collaborate in common projects between the Tbilisi State University and the University of Göttingen. Scientists from the University of Göttingen also have other contacts with Tbilisi State University – they meet Georgian students, deliver lectures for them and – when there is interest and support from international programs – they enable talented Georgian students to continue their studies in Germany.



ENVIRONMENTAL PROBLEMS THAT COULD BECOME AN ALTERNATIVE SOURCE OF ENERGY



TAMAZ MARSAGISHVILI

While traditional power systems based on technical progress provide many benefits, they have an extremely negative impact on the environment and have resulted in the current global climate change. The temperature will rise for the following decade, and though it might only be by 2 degrees it will cause drastic changes to natural processes on earth. Hence, the quest for non-traditional energy sources is extremely significant for the energy industry and the household sector.

Today renewable energy technologies including solar, wind, hydrogen, hydroelectric, biomass and bio-fuels are being introduced in many areas of human activity. Hydrogen energy is among the most important alternative energy sources, and could solve the most acute environmental problems in large cities such as air pollution. "Searching for sources of raw materials and obtaining hydrogen or electricity from raw materials is a pressing task", said Dr. Tamaz Marsagishvili, Doctor of Physics and Mathematics and Head of the Theoretical Studies Laboratory at TSU's R. Agladze Institute of Inorganic Chemistry and Electrochemistry.

Working on renewable energy is the laboratory's number one priority at this time. The essential precondition of turning to hydrogen energy is the creation of reliable, economical and ecological fuel elements that function on hydrogen or hydrogen-containing raw materials. Among these, hydrogen sulphide is significant. The Black Sea is at the centre of the researchers' attention because its deep waters contain large amounts of hydrogen sulphide, hydrosulphide and sulphide ions (roughly estimated amount: 4.6-80 billion tons). Their

sources are gas emissions from seabed volcanoes and geological cracks, organic substances washed down by rivers and decayed micro-organisms.

Extracting and using the beneficial components from the sea waters and seabed (e.g. H₂S, K⁺, Mn, NH₄⁺, CH₄, etc.) are essential for dealing with ecological problems of the sea ecosystem, to decrease greenhouse gas emissions, and for obtaining renewable and non-traditional energy sources. This is why tackling the severe environmental problems of the Black Sea is an urgent task. The Black Sea not only poses a serious ecological threat but it could become a potential source of hydrogen energy. Studies show estimates of obtaining a potential of 100 billion kilowatt hours of electricity every year by processing hydrogen sulphide. Hydrogen sulphide can be used for fuel and energy, petrochemical synthesis and producing mineral fertilizers. Thus decreasing hydrogen sulphide in the Black Sea deep waters and oceans will mean reversing serious ecological risks naturally while providing clean energy sources.

Renewable energy ensures safe and continuing supplies with only moderate price fluctuations. Such sources of energy reduce

Doctor of Physics and Mathematics, Head of the Theoretical Studies Laboratory at the R. Agladze Institute of Inorganic Chemistry and Electrochemistry; Member of Euroscience (1998), Board member of the International Center for Black Sea Water Studies (2001), Member of the American Chemical Society since 2006. From 2002-2003 was Deputy Head of the State Agency of Black Sea Protection, Research and Development and Chairperson of the Georgian Academy of Sciences. As a result of the research findings of the agency, it became possible to provide the Georgian government with the development concept of hydrogen energy (The President's order #1087 taken on September 4, 2003 and the resolution #33 of the Academy of Sciences adopted on March 11, 2004). She has published 135 scientific works; received 13 patents and international scientific grants. Her research interests include chemical, electrochemical, and photochemical reactions; photo-electrochemical kinetics; thermodynamics of poly-atomic particles placed in condensed environment; Raman spectroscopy and electron-vibration; the distribution of electromagnetic waves in an irregular condensed environment; radio spectroscopy; Nano systems and Nano processes; quantum-chemical calculations; catalysis and photocatalysis; chemical processes in nano and meso-structures; hydrogen energy; and information technologies.



air pollution and entail less reliance on natural gas. By promoting socio-economic well-being in developed countries and providing electricity for developing countries, it is easy to see why projects focused on these resources are being encouraged today. One such international grant project, BS-ERA.NET (Networking on Science and Technology in the Black Sea Region) entitled "Obtaining hydrogen from the Black Sea through using sulphide fuel elements" is a good example. The Theoretical Studies Laboratory research team includes T. Marsagishvili, G. Tatishvili, N. Ananiashvili, M. Machavariani, M. Kikabidze, J. Metreveli, E. Tskhakaia and R. Khositashvili, who are working with foreign partners from Romania and Bulgaria.

Many processes (adsorption, absorption, the Claus process, etc) have

been developed to obtain hydrogen sulphide, however processing is too costly. Due to the low commercial value of the end product it is necessary to develop more economical and ecological methods to obtain it. This is essential for extracting hydrogen from hydrogen-sulphide in fuel elements. Over the last decade, there has been an increased demand for fuel from hydrogen sulphate, yet the current method of hydrogen sulphate extraction makes the process significantly complicated and costly.

Much research has been devoted to various options for obtaining hydrogen sulphate, but all of them include corroding gaseous hydrogen sulphate with costly catalysers and composed materials at high temperatures (800-1000C), which is not commercially viable. However, the Black Sea has H₂S dissolved in water. Although

there are no published scientific results suggesting that fuel elements can be generated from hydrogen sulphate dissolved in water, the aim of the research is to create a type of fuel element that can be generated from these raw materials.

One of the most noteworthy benefits of this product is that it does not have any negative impact on the environment. Obtaining hydrogen sulphate does not affect the sea in any way; it does not alter its salinity, acidity or Ph balance – and does not create waste. Thus the research being carried out is vital from scientific, technological and innovative points of view as well as for economic, ecological and social purposes.

Within the framework of the project, in order to provide more hydrogen sulphate in the sea, the researchers are considering



experimental research, they chose a non-expensive electrode material that is resistant to hydrogen sulphide and its corrosion, which – in addition to having the purpose of an electrode purpose, acts as a catalyst – and an ionic membrane, which has been determined to produce energy-generating properties from hydrogen sulphide during catalytic corrosion with sulphide oxygen in a fuel element. The end product can be used to produce carbon-free energy in the form of hydrogen.

With their Bulgarian and Romanian counterparts, the research team has confirmed their findings in the Black Sea deep waters. Studies carried on the research vessel, Akademik, from the Institute of Oceanography of the Bulgarian Academy of Sciences, have led to the publication of several articles in Bulgaria. The aim of the expedition was to undertake large-scale laboratory experiments in real conditions



and to determine how long the device can operate. Most importantly, the researchers obtained electromotive force (EMF) in the heat element from various depths of the Black Sea waters containing hydrogen sulphide.

A number of articles have appeared on these studies in local and international scientific publications, and significantly, the project implementers have succeeded in presenting a patent.

possibilities for capturing sulphide-ion by natural and modified zeolites and synthetic cations. It has been proven that these materials are characterized by a high adsorption capacity, so they could be used as hydrogen sulphide adsorbents from natural sulphur waters. The team has studied non-adiabatic ion exchange processes in zeolite channels, and have made constant velocity calculations for the ion exchange process in porous channels during which one adsorbent particle is replaced by another. Analytic expressions for the characteristic parameters include environment reorganization energy, transition probabilities, and the speed constant of the processes. The project implementers also succeeded in creating a fuel element laboratory and large-scale laboratory models. As a result of the



OIL AND GAS COMPOSITION PERSPECTIVES FOR DEEPLY BURIED SEDIMENTS IN EASTERN GEORGIA



ASLAN SULADZE

PhD in Geology-Mineralogy, Head of the IT Department at A. Tvalchrelidze Institute of Mineral Resources. In 1967, he graduated from Georgian Polytechnic University specializing in “Exploring Useful Fossils”. He has been working at A. Tvalchrelidze Institute of Mineral Resources since 1968. He is a Member of the Academy of Engineers and author of more than 160 scientific works.

Despite a long history of oil extraction in Georgia and numerous studies carried out, current economic outcomes for the industry are not impressive. However there were certain periods of progress in the development of industrial extraction. For example, in the 1970s and 80s annual oil extraction in Georgia exceeded 3 million tons (see G. Khmaladze, N. Khmaladze, Georgia’s oil industry during the transition period; TSU Publishing House, 2002, p. 14).

Based on targeted studies, scientists in Georgia distinguish five existing oil and gas districts and two potential ones. Officially, 15 oil fields (mostly small-debit), one gas-and-oil and one gas only have been registered. Presently, TSU scientists believe it is expedient to focus on one of the potential reserves to increase oil extraction in Georgia, specifically in the deeply buried Meso-Cenozoic sediments.

With financial support from the Shota Rustaveli National Science Foundation, from 2013 till 2016 the Alexander Tvalchrelidze Caucasian Institute of Mineral Resources began implementing a project in 2013 – Assessment of Oil and Gas Composition Perspectives of Deeply Buried Meso-Cenozoic Sediments in Eastern Georgia—which will terminate in 2016.

The project was initiated by Nani Aslanikashvili, Chairperson of the Scientific Council at the Caucasian Institute of Mineral Resources; Head of the Department of Energy Resources at the same Institute; and Doctor of Geological and Mineralogical Sciences. Unfortunately Dr. Aslanikashvili passed away before she could see the end of the project.

Today scientists carrying out the program include Professor Mirian Topchishvili, Doctor of Geological-Mineralogical Sciences, a corresponding member of the Georgian National Academy of Sciences; Vakhtang Iorashvili, Research

Fellow at the Department of Energy Resources of the Caucasian Institute of Mineral Resources; Aslan Suladze, Doctor of Geological-Mineralogical Sciences, Head of the Department of Informatics and New Technology at the same Institute; Zurab Kilasonia, Research Fellow at the Caucasian Institute of Mineral Resources; and Maia Chichinadze, Research Fellow at the Simon Janashia Museum of Georgia.

In order to ensure the conversion of bio-organic compounds diffused in rocks into oil, sediments must pass through a long stage of sedimentogenesis (sedimentation), then diagenesis (change of sediments into a sedimentary rock) and finally catagenesis (secondary conversion of bio-organic compounds existing in already-formed rock).

The scientists have studied and described the peculiarities of sedimentary and volcanic-sedimentary rocks, conducted genomic typification and analyzed lithological and geochemical criteria of rocks. They carried out paleo-geographic and paleo-volcanic reconstructions and focused on determining the role of deep processes in the formation of oil and gas basins and in the mobilization of hydrocarbons. Modern and paleo-geothermal conditions of the basins were reconstructed and the vitrinite reflectance of disseminated humus organic matter was measured (humus – a dark-brown or black organic substance made up of decayed plant or animal matter). Based on

this, the quality of organic matter and rock catagenesis was determined. In addition, a complex stadiol analysis was conducted to assess the quality of conversion of sedimentary and volcanic-sedimentary rocks.

Statistical data on the distribution of oil and gas deposits showed that gas fields are mainly located deeper (>4.5 km) and their reservoirs (so-called collectors) are connected to secondary induration zones. Moreover, their distribution according to depth is unequal. This could largely be determined by specific regimes in the depths for which identification has both theoretical and practical importance. Special attention is being paid to the quality of initial types and catagenesis of organic compounds according to the composition and color of dispersed organic matter. Organic compounds change their color according to the composition of organic matter and microfossils (spores, stamens and micro plankton). In addition to the fact that palynological research would further enrich the results already achieved by the Institute, this would be an innovative approach and yield important results in the field of oil and gas composition research in Georgia.

The oil and gas district of eastern Georgia is a western endpoint of a mega-depression of southern part of the Caspian Sea (downstream of the Mtkvari (Kura) River, in Azerbaijan). Thus, studies conducted will be interesting for Azerbaijani specialists too. The national oil and gas company Saknavtobi has carried out exploratory assessments of the oil and gas composition of deeply buried Meso-Cenozoic sediments inside the Caspian depression, by drilling medium and deep (3700 m) wells. According to the data, some have potential for producing important oil resources.

Previous studies show that factors that largely determine the hydrocarbon potential of sediments were not fully taken into consideration when assessing the oil and gas composition potential of deeply buried sediments. This has created difficulties in forecasting deposits and exploitation.

One of the novelties of the project is to determine the apparently consistent patterns between oil and gas composition and endogenous regimes (processes

caused by forces from within the earth), including volcanic processes. For this purpose the researchers will study the formation conditions of the Meso-Cenozoic sedimentary basins to determine lithological and geochemical characteristics of the rock. (Lithology is the science of sedimentary rocks and sedimentary deposits, present-day sediments, their composition, structure, genesis and distribution.)

The importance of various geological processes for the formation of filtration characteristics of rocks will be assessed before the project is over. The stages and zones of catagenesis will be determined on the basis of the complex stadiol analysis and vitrinite reflectance data. The vertical gradient of catagenesis will be determined by extrapolation, through which it will be possible to assess thermobaric regimes in deep horizons. The same data can also be used in adjacent areas where no drilling data are available so far.

The team pointed out that on the basis of analysis and generalizations that can be made about materials studied the hydrocarbon potential of deeply buried sediments can be forecast. The project's success will have practical results as well, as it will enable interested oil-extraction companies to save significant financial resources.



MAIA CHICHINADZE

Doctor of life sciences with the focus on palynology and Scholar at the Paly-Biology Institute of Georgian National Museum. Research interests: palynology, studies of geological sediments and archaeological materials through palynology method. Maya Chichinadze is the author of more than 15 scientific articles; 2007-2015 participated in international forums: 2011-2013 – SCOPES project, “Colchis 2 Vani, Nokalakevi in the first Millenium B.C and earlier cultural and environmental context”; 2012-Shota Rustaveli National Science Foundation grant project “Treasures from Vani Nakalakari”.



GEORGIAN SCIENTISTS STUDY BALANCED NUTRITION FOR POULTRY AND ANIMALS



Until today the balanced and complete nutrition of poultry and livestock in Georgia has been largely ignored. Researchers from the Laboratory of Chemistry Studies at P. Melikishvili Institute of Physical and Organic Chemistry created bio-coordinated compounds of bio-metals and organic substances and their compositions with natural zeolites, which can assure inexpensive, ecologically safe, zero waste, antibacterial and antiseptic additives for animals. Under the supervision of Dr. Spartak Urotadze, Head of the Laboratory of Chemistry Studies, and Doctor of Chemistry, a team of scientists carried out research on "Bio-metals and natural zeolites containing premixes for the new generation" between 20011 and 2014, supported by the Science and Technology Centre in Ukraine (STCU).



A key condition for the healthy development of poultry and livestock is the provision of daily feed rations that are rich in effective and balanced additives. These must be first and foremost bio metals and organic substances (amino acids, oxy-acids, etc.). Essential basic salts of bio metals (sulphates, chlorides, carbonates, iodides, etc.) and organic compounds may be added separately or simultaneously in the form of mixtures. Certain natural zeolites are also successfully used as food additives (clinoptilolite, laumontite, etc.), which have a prolongation effect. Bio metals work in living organisms not in the form of basic salts but as bio-coordinated compounds. Therefore, while consuming metal compounds in the form of bio-coordinated compounds, their biological activity increases significantly.

Experiments conducted by the team of researchers showed very positive results with livestock, including a decline in disease and falling, weight gain and meat quality.

These results confirmed that deficiencies of bio metals in feed premixes should be used in the form of coordinated compounds rather than basic salts.

To meet the project objectives, the researchers produced two outputs:

They created a coordinated compound synthesis of bio-metals and organic substances (amino acids, oxy-acids, etc.). Optimal compositions were made with synthesized compounds and natural zeolites (clinoptilolite, laumontite,);

They generated scientifically proven recipes for low-cost, environmentally safe, non-waste additives with effective doses and the optimal composition containing indispensable bio-metals, organic substances and zeolites.

Using these recipes produced an extended and gradual absorption of nutrients; maximal decline in falling down, higher weight gain by 1-15%, improved quality of meat, physiological and biochemical



IAMZE BESHKENADZE

Chief Scientist at the Agricultural Chemistry Laboratory at the Petre Melikishvili Institute of Physical and Organic Chemistry; Candidate of Chemical Sciences, PhD; author of more than 100 scientific works; participant in international conferences; holder of 12 patents. She has participated in international programs and is Head of a National Science Grant.

indices maintained within acceptable limits; prevention of various diseases; and feed costs reduced due to increased conversion efficiency from ingested food; food costs were reduced by using natural zeolites;

The researchers drew up recommendations for using these compounds in poultry and livestock nutrition. The compositions were tested on poultry (laying hens and broiler chickens) and on rabbits.



TSU SCIENTISTS PARTICIPATE IN DEVELOPING A BLACK SEA REGIONAL SHORT-TERM FORECASTING SYSTEM

The easternmost section of the Black Sea regional short-term forecasting system was developed with the participation of Georgian scientists on the basis of mathematical modeling as one of the components of the overall Black Sea diagnosis and forecasting system. The Development of the Black Sea Diagnosis and Operational Forecasting System was carried out from 2003 to 2005 as an EU-ARENA international scientific and technical project and the Black Sea regional forecasting system easternmost sector covered the Georgian coastline and waters.



AVTANDIL KORDZADZE

Doctor of Physics and Mathematics; Professor; Head of the Mathematical Modelling Sector of the Geophysical Processes of the Sea and Atmosphere of TSU Geophysics Institute; winner of the Merab Aleksidze (1996) and M. Nodia Prizes (2012); Member of the European Union of Earth Sciences (2014); Ocean Expert (<http://www.oceanexpert.net/>); since 1996 is Chief Editor of the Georgian Journal of the Geophysical Society, Series B. He has participated in international conferences and forums, and is Head of international and national scientific grants. Research interests: mathematical justification of the tasks of ocean and atmosphere dynamics; mathematical modelling of the hydro-thermodynamic and ecological processes in the Black Sea and the atmosphere; and Sea-atmosphere interaction. He has authored up to 170 scientific works in national and international publications.

For five days in July 2005 an international pilot experiment set up forecasting functions which were quasi operational, for the first time in the history of Black Sea Oceanography. The regional forecasting system developed by Georgian researchers for the easternmost part of the Black Sea is one of the components of this forecasting system. Leading scientific centers from all countries limitrophe to the Black Sea (Bulgaria, Turkey, Romania, Russia, Georgia and Ukraine) were involved. The Nodia Institute of Geophysics participated under the coordination of the Marine Hydrophysical Institute of the Ukrainian National Academy of Sciences (Sevastopol). The international experts unanimously assessed the experiment successful, as it confirmed the reliability of the Black Sea forecasting system and the real possibility of its functioning in operational mode.

The program received further funding from the EU ECOOP (2008-2011), and this permitted further improvements and expansion for creating mathematical models of the distribution of anthropogenic admixtures through a grant from the Shota Rustaveli National Science Foundation (2013-2015). The research team included Avtandil Kordzadze, Doctor of Sciences in Physics and Mathematics, Professor, the Head of the Department of Mathematical Modeling of Geophysical Processes in the Sea and Atmosphere at the Institute of Geophysics; and Demuri Demetrashvili,

Doctor of Sciences in Physics and Mathematics, Chief Researcher at the Department of Mathematical Modeling of Geophysical Processes in the Sea and Atmosphere at the Institute of Geophysics.

For the first time, a short-term forecasting system was created. At its core is a high-resolution regional model of Black Sea dynamics that differs from models of those developed abroad, in that this methodology takes physical factors into consideration as well as numerical methods for solving differential equations. The eastern section of the Black Sea forecasting area is separated from the open part of the sea by a conditional liquid boundary that partly coincides with the Tuapse Meridian.

The regional forecasting system consists of hydrodynamic and ecological blocks. The regional model of the Black Sea dynamics is the core of the hydrodynamic block, as developed by A. Kordzadze; D. Demetrashvili; components of the ecological block are two – and three-dimensional mathematical models of oil spills and other pollutants in the sea environment. The regional model of Black Sea dynamics is based on a complete system of oceanic hydro-thermodynamic equations, while admixture pollution calculations are based on two – and three-dimensional diffusion equations that use the flow field in the hydrodynamic block. All the data necessary for the regional forecasting system are received daily via Internet from the Marine



Hydrophysical Institute (Sevastopol).

The regional forecasting system is not yet the final version and work is underway to improve the system. At this time a regional forecasting system has been developed that allows three-day forecasting, and not only 3-D dynamic fields – currents, temperature and salinity at a spacing of 1km, but also reports oil pollution zones and concentrations in case of accidents. In cases where the sea becomes polluted by oil and other admixtures, this forecasting system will enable scientists to promptly forecast the areas and concentrations of pollution and give recommendations to relevant agencies.

The researchers believe that the regional forecasting system now developed has both important scientific and practical value. The scientific value includes a unique database developed in 2010-2015 that systematically reflects the hydro – and thermodynamic processes occurring in the Georgian sector of the Black Sea and adjacent waters. This adds to our knowledge about hydro – and thermodynamic processes in these waters. Analyses of three-dimensional dynamic fields – flows, temperature and salinity – have shown that the easternmost Black Sea represents dynamically active region, where origin, evolution and dissipation of mesoscale and sub-mesoscale hurricanes constantly take place. The practical value of this research has meant the forecasting

system can be used by agencies and individuals as well.

Since the Black Sea regional forecasting system works close to fully operational and gives data for 24h, 48h and 72h forecasts of hydro-physical fields, flow, temperature and salinity are posted online in visual format at the following address: www.ig-geophysics.ge. Any individual or organization interested in the results of forecasting who wishes relevant information in other formats, or more detailed information about forecasting fields, can directly contact the authors.

Research results have been presented at international conferences and in articles on findings published in peer-reviewed journals:

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DEMUR DEMETRASHVILI

Doctor of Physics and Mathematics; Chief Scientist in the Mathematical Modelling Sector of the Geophysical Processes of the Sea and Atmosphere at the TSU Geophysics Institute; winner of the M. Nodia Academic Prize in the field of Geophysics (2012), member of the European Union of Earth Sciences (2014); since 2009 is national correspondent from Georgia and Ocean Expert of the International Association of Physical Sciences of the Ocean (IAPCO) in the International Union of Geodesy and Geophysics (<http://www.oceanexpert.net/>). He has participated in international scientific forums and conferences, and is Chief implementer of national and international scientific grant projects. Research activities and interests: mathematical modelling of the spread of hydrodynamic processes and impurities in the Black Sea; mathematical modelling of meso-scale atmospheric processes; Sea-atmosphere interaction; software development of mathematical models. He is author of up to 160 scientific works in national and international publications.

MAJOR DENTAL DISEASES IN GEORGIA AND MODERN APPROACHES TO PREVENTION



According to Georgian doctors dental caries and periodontal infections are the most common somatic microbial diseases in the adult population, and are due to etiological causes and other factors. Mamuka (Vladimer) Margvelashvili, PhD in Medicine and Head of the Department of Dental and Face and Jaw Surgery at the TSU Faculty of Medicine, supervised research on these issues in 2013-14. The study was carried out with Manana Kalandadze, PhD in Medicine, Associate Professor of the Department, and with Lela Tsitaishvili, PhD in Medicine. Their results showed that high epidemic indicators of the key dental diseases, coupled with negligence, contribute to a number of socio-medical and economic issues. This health crisis is reflected in the frequency of medical interventions and by the impact of disease on those who are affected. For these reasons it is vitally important to assess these indicators.

The main objective of this research was to assess the frequency and extent of dental disease in Georgia's adult population. The study took into account climatic and geographic factors, socioeconomic conditions, hygienic and behavioural factors as well as medical, biological and other factors, with the aim of establishing modern prophylactic approaches. The researchers noted that studies on epidemiological indicators had not been updated in over 25 years. Such data would contribute to prevention. When there is a significant destruction of tooth tissues, chewing is painful and thus weakened, causing un-masticated food to enter and damage the gastrointestinal tract. This leads to irreversible transformations in gastric and intestinal mucosa. Sharp edges of decayed teeth damage the mucous membrane of soft mouth tissue. Several diseases may ensue, including gingivitis-the inflammation of the gums; glossitis-an inflammatory disease of the tongue caused by a bacterial or viral infection; stomatitis-an inflammatory

disease of the oral mucosa and many other diseases. Worsening caries produce various bacterial and inflammatory diseases which can even damage the skin, the heart, eyes, lungs, kidneys and joints.

The team assessed 2370 adult men and women, who were divided into four age groups: 20-34, 35-44, 45-64 and 65-74. The project covered ten areas of Georgia: the regions of Mtskheta-Mtianti, Guria, Samtskhe-Javakheti, Shida Kartli, Adjara, Kakheti, Samegrelo, Kvemo Kartli, Imereti and the capital, Tbilisi.

Results indicate that tooth decay reaches epidemic proportions in Georgia – up to 96-100%. Decay frequency in men and women averages $11,53 \pm 7,69$ in all areas studied, yet the number of tooth fillings is very low, which indicates attitudes towards dental services – especially towards restorative treatment—are negative. Unfortunately, in all regions studied, taking care of one's dental health is not considered a priority. This indicator reveals that most of those who make dental appointments do so either



VLADIMER (MAMUKA) MARGVELASHVILI

Doctor of Medicine, Professor; Head of Dentistry and Maxillofacial Surgery at the TSU Faculty of Medicine; Founder and President of the Georgian Dental Association; has supervised successful completion of 12 dissertations; is author of about 100 scientific publications – 28 in highly ranked scientific journals; served as Chairperson of World Dental Federation Committee (www.fdiworldental.org); is currently a Member of the Committee of International Association of Dental Research (IADR). He is Editorial Board Member of highly-ranked scientific journals in Poland, Turkey, Ukraine, Belarus, Kazakhstan, Azerbaijan and Georgia; serves as Expert at the Ministry of Labour, Health and Social Affairs of Georgia.

to have a tooth extracted or to receive dental treatment very late, when it is impossible to treat or restore teeth and gums. Regions such as Samtskhe-Javakheti, Imereti and Samegrelo had the worst results. Most people living in these regions (79.1%, 78.0% and 71.4% respectively) have had no appointments at all, although the reasons for this varied from region to region. In Mtskheta (50.3%), Samtskhe-Javakheti (49.2%), and Imereti (55.3%) the reason given was mainly financial, while in Kvemo Kartli (58.3%), Tbilisi (57.2%) and Shida Kartli (56.1%) the dominant reason was attitudinal – failure to see any need for dental treatment except in emergency cases or for serious discomfort.

In the population studied, tooth decay affected 99,1% of women and 98,1% of men. In the 24-34 year-old group it reached 96% and for all other age groups it was up to 99-100%. According to medics, the slight but significant difference between male and female indicators can be explained by the fact that during pregnancy and lactation women lose more minerals than men.

Overall, the extent of untreated cavities in Georgia's regions were: Tbilisi – 97%, Mtskheta-Mtianeti – 100%, Guria – 96.5% , Samtskhe-Javakheti – 100%, Shida Kartli – 99.5%, Adjara – 98.7%, Kakheti – 98.3%, Samegrelo–100%, Kvemo Kartli – 99.2%, and Imereti – 98.3%.

The analysis of periodontal diseases showed they were frequent (62%), as opposed to healthy gums (38%). Unhealthy gums were diagnosed by bleeding during probing (41%), by the existence of periodontal pockets (44%), and a loss of gum attachment to teeth (47%). Poor periodontal health was noted in 66.9% of men and 57.5% of women; bleeding at periodontal probing was observed in men (44.9%) and in women (37.2%) at rates that were similar to the indicators of periodontal pockets and the loss of teeth-gum attachment. These variables are least present in younger groups, but are significantly present in the second and third age groups.

Statistical analyses of these findings show a reliable correlation between



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dental disease and dental activity, socioeconomic and climatic-geographical factors, as well as attitudes towards good dental hygiene. For financial reasons, and due to somatic diseases and negative attitudes towards dental/oral hygiene, the elderly are at greater risk from dental disease. The extremely high frequency of dental diseases in Georgia is related to a low public awareness of the medical issues, and a lack of access to dental services, mainly for financial reasons. However, in spite of financial difficulties and low awareness, most people receive dental services when they are in pain or discomfort, yet scarce attention is paid to prevention.

In summary, low incomes, insufficient levels of general medical awareness and poor socioeconomic conditions explain the lack of access to dental services in Georgia. Negative attitudes towards oral/dental hygiene and the high prevalence of caries and periodontal diseases resulting in tooth loss and other diseases mean that preventive measures must be taken to change attitudes towards dental health care and to raise general medical awareness

and improve access to dental services in Georgia.

Applying the research results will enable specialists of various fields to identify key trends in dental disease prevention and develop necessary guidelines.

Scholarly articles published around the thesis: 1. Periodontal Diseases among the Adult Population of Georgia and the Impact of Socio-behavioural Factors on their Prevalence. Lela Tsitaishvili, Manana Kalandadze, Vladimer Margvelashvili. Iran J Public Health. vol. 44, No. 2, Feb. 2015. 2. Assessment of caries prevalence and related risk factors among the adult population of Georgia by age and gender. Lela Tsitaishvili¹, Manana Kalandadze, Vladimer Margvelashvili Dent. Med. Probl. 2014, 51, 3, 299–307. 3. The prevalence of periodontal diseases among adult population in Georgia. Tsitaishvili L. Margvelashvili M. Kalandadze M. Margvelashvili V. Georgian Med News. 2014 Sep;(234):25-32. 4. The prevalence of dental caries among the adult population of different regions of Georgia. Tsitaishvili L, Margvelashvili M, Kalandadze M, Margvelashvili V. Georgian Med News. 2014 Sep;(234):25-32.



EXPERIMENTAL MODELING OF MANGANESE TOXIC ENCEPHALOPATHY

The project is entitled “Perspectives for using certain neuro-protectors and experimental modeling of the hormesis phenomenon of manganese toxic encephalopathy”.

In addition to organic and inorganic compounds, 20 chemical microelements are vital for the healthy life of a human being and other living organisms; one of them is bivalent manganese. Its presence in the human organism determines the functioning of a number of processes such as the intensification of enzyme-catalyzed reactions, in the organic metabolism (albuminous ferments), reproductive glands, the musculoskeletal system, nerve cell membranes and the nervous system as well as blood cleansing. The Laboratory of Experimental Neurology at I. Beritashvili Center of Experimental Biomedicine and the Department of Pathology at the TSU Faculty of Medicine began a study in January 2013, to continue until December 2016. The project is entitled “Perspectives for using certain neuro-protectors and experimental modeling of the hormesis phenomenon of manganese toxic encephalopathy”. The hormesis biological phenomenon usually relates to favorable biological responses to an exposure to toxins and other stressors. However, exposure to small amounts or toxic amounts of manganese ions can lead to negative consequences – generally, the degree of toxicity of chemical substances or ions is measured by doses, according to Body Mass Index, that can cause poisoning, or to turn into poison. The same dose of a chemical substance can affect different human organisms in different ways – indifferently, medically (as poison) and lethally. A toxic dose of poison has no lethal outcomes, while a lethal dose causes death.

The harmful effects of manganese on the human organism were first detected in 1837, when John Couper described a

syndrome similar to Parkinson’s disease in Scottish workers exposed to high levels of dust while grinding “black oxide of manganese” at a chemical plant. This “secondary parkinsonism”, or “manganism”, was an occupational disease, and can still be observed where people work in ferrous and nonferrous metallurgy and paint or glass production and petroleum. Workers are exposed to toxic doses of manganese compounds through the skin, orally or by inhalation. Since the 1990s, the intravenous use of cheap surrogate drugs and psychoactive stimulants like methcathinone (sometimes called “jeff”) containing a manganese compound has been commonly used by substance abusers and addicts in Europe, the USA and in the former Soviet republics, including Georgia. It causes grave disabilities in users, and especially manganese encephalopathy, or brain dysfunction due to toxic exposure. The problem has both medical and social dimensions.

The key novelty of the study is to create an adequate model of valid toxic encephalopathy by injecting white rats through hypodermic intervenous intraperitoneal with potassium permanganate containing an isotonic solution (see Series in Biomedicine, 2013, v.39, #5-6,237-249). This is important for studying exposure to manganese (with a marginal value that can cause encephalopathy in experimental models). The experimental animal model created as a result of the manganese encephalopathy study is very homologous, by its physiological and behavioral indicators, to changes observed in human beings after ephedrone abuse. At the same

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TAMILA BAGASHVILI

Associate Professor at the Pathology Department at the TSU Faculty of Medicine, Chief Scientist at the Experimental Neurology Laboratory of Ivane Beritashvili Biomedicine Centre; Deputy Head of the Laboratory; Doctor of Biology; from 1972 to 2010 has been Head and Chief Scientist of Neurology Department and Experimental Neurology Centre of the Institute of Clinical and Experimental Neurology; Since 1995 she has lectured at Tbilisi State University; is author and co-author of more than 50 scientific works published in national and international journals, related to epilepsy, visual recognition memory, studies of the etiopathogenesis of acute pathologies with the application of macro and micro-physiological studies on manganism models. She has participated in national and international conferences; since 2007 she has served as organiser of the annual conference Doctors of the Future and Medical Problems; she is Chief Scientific Supervisor and Editor of two volumes of conference collections (2010; 2014); author of the textbook, "General Pathophysiology"; participant in national and international grant projects; member of the Federation of European Neuroscience Societies (FENS), the International Brain Research Organization (IBRO), the Neuroscience Association of Georgia and is Member of the I. Beritashvili Society of Physiologists of Georgia.



time, chelates¹ and neuroprotective drugs are used to control rigid neurological and histopathomorphological disorders typically found in manganese encephalopathy.

Against the background of modeled Mn-encephalopathy, an intramuscular injection of a chelate – calcium-monosodium-editeate solution – cleans the organism of excessive manganese and controls rigid neurological disorders that form as a result of manganese intoxication. The histomorphological study revealed deep destructive changes in the cortex where there are toxic doses of manganese – multiple hematomas, thrombosis in some areas, perivascular edema, neuronal necrosis and severe transformation of internal organ tissues (liver, lungs, cardiac muscle, lymph nodes).

In particular, hepatocyte dissociation and fatty dystrophy were found in the liver. In the lungs there was dilation of the alveolus, and in some places broken interalveolar septums, dilation of bronchioles and hyperplasia of the peribronchial nodes. In the myocardium disfibering occurred, and lymphoid hyperplasia was found in lymph nodes.

This study is enabling the researchers to provide an in-depth explanation for the pathogenesis of manganese toxic encephalopathy, which is of great practical importance for correct treatment. Histopathological studies of some organs in our research have shown that the changes in tissue constructs are in full correlation with neurological or pathological behavioral

indicators developed in the organisms of animals or drug users (see Series in Biomedicine, 2013, v.39, #5-6, 237-249). Similar studies have great theoretical and practical importance for analyzing the etiopathogenesis of substance users, and for recommending preventive measures. Given the topicality of the issues, the study of these damaging effects is urgent, particularly because of the alarming increase in increase of synthetic drugs and production of "jeff"; of ephedrine IV users; and for occupational pathologies of workers in ferrous and nonferrous metallurgy and petrol production that cause severe human disabilities.

The study team comprises researchers from several institutes: Tamila Bagashvili, Dr of Biology, Associate Professor at the Department of Pathology of TSU Faculty of Medicine, Senior Research fellow at the Center of Experimental Biomedicine; Nikoloz Papuashvili, MD, Chief Research Fellow and Neuropathologist at the Uranti Medical Center, theme leader; Giorgi Andronikashvili, MD, Head of Laboratory; Senera Chipashvili, BioPhD, Research Fellow; Giorgi Kvernadze, BioPhD, Senior Research Fellow; Mikheil Okujava, Academic MD, Research Fellow; Tea Gurashvili, Academic MD, Research Fellow; and Ketevan Gogeshvili, Research Fellow. Researchers from the Department of Pathology include Teimuraz Jorbenadze, Academic MD, Full Professor; Giorgi

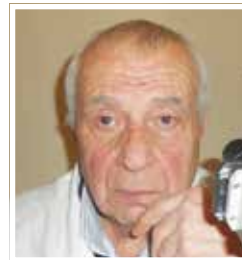
Pataraiia, MD, Associate Professor; and Tamila Bagashvili, D.Bio., Senior Research Fellow.

The study will be comprehensive, including clinical, experimental and histopathomorphological research using materials and technical equipment in the Laboratory of Experimental Neurology, the animal vivarium in the Center of Experimental Biomedicine, and material-technical resources in the TSU Department of Pathology.

First research results were presented at the 3rd International Symposium, Neuro-Plasticity: Neurous Substrate for Health and Disease: New Approaches for Research in Tbilisi on October 2-4, 2014, through a report "The Study of the Therapeutic Potential of Cortex in the Treatment of Methcathione (Ephedrone) – Associated Manganese Encephalopathy" by N. Papuashvili; and to the 1st International Conference in Rheology (Kutaisi, October 10-11, 2015): "As a result of the injection of manganese ions may cause histopathological changes in some visceral organs" – T. Bagashvili, N. Papuashvili, T. Jorbenadze, G. Andronikashvili, T. Gurashvili, K. Gogeshvili, pp.34-35. 2015.

(Endnotes)

1 The same as Ligand links where minerals are connected to organic molecules, including amino acids, through which microelements are transported to cell membranes to create an "internal connection" or chelate connection.



TEIMURAZ JORBENADZE

Head of the Pathology Department of the TSU Faculty of Medicine; MD; Professor of Medicine; Member of the Intercontinental Medical-Social Science Academy. He is an international expert in pathology and Board member of the Association of Pathologists of Georgia; Member of the Degree Awarding Council of the Faculty of Medicine; he has been working at TSU since 1998. Research interests: morphological principles of intracranial tumours; biological "behaviours"; acute hypoxia's impact on the structural organization of endocrine organs; the correlation of radiological and patho-morphological studies; experimental modelling of manganese-powered toxic encephalopathy and hysto-patho-morphological study of organs. He is the author of 148 scientific works, two textbooks, and supervisor of three doctoral and six candidate dissertations; has been official opponent of 18 doctoral and 21 candidate dissertations and participated in 11 international scientific forums. He has been awarded the Friendship of Peoples prize, and the Order of Honour.

VITICULTURE, WINE MAKING AND DIVERSIFICATION OPPORTUNITIES IN GEORGIA



A study on viticulture, wine making and diversification opportunities in Georgia started in 2011, to identify the challenges to farming and viticulture and prospects for diversification. Farming has an important role in the economic structure of the EU countries and it is vital to develop models for Georgia that comply with European requirements and with worldwide experience. The research team studied European experiences and models in winemaking and viticulture and developed recommendations for adapting diversification models according to Georgian reality.

Eter Kharaishvili, TSU Professor, PhD in Economics, Head of Microeconomics Department at TSU is leading the research project on adapted diversification in the fields of farming and viticulture. The research was undertaken at the Microeconomics Department of the Faculty of Economics and Business with significant support from the Ministry of Agriculture of Georgia. Currently, the research team is working within a framework of shortlisted and financed projects such as “Farming diversification opportunities – the EU models and challenges in Georgia”. The academic research team includes Marina Chavleishvili, Marina Natsvaladze, Ia Natsvishvili, Ineza Gagnidze, as well as Assistant Professor, Tamar Lazariashvili. Additionally, the following students in the Faculty are contributing to the research: Ana Lomouri, Rusudan Gurashvili, and Salome Ekizashvili.

In Eastern European countries, from 3.4-hectare to 9.0 – hectare lands are used for farming; in Central Asia this figure runs from 1.5 to 5.0 hectares; and in Georgia, 75% of farms are 1 to 5 hectares. In Eastern European countries, the number of people employed in agriculture has continually decreased, contrary to the tendency in Central Asian countries and Georgia.

This indicates that diversification would be an effective strategy for integrating Georgian food and wine products into the global farming market. Because of its location, Georgia is a hub between Europe and Asia, and for this reason forming a diversified economy combining several sectors is a rational choice. A new economic model should ensure the preservation of our cultural identity, the achievement of self-sufficiency in major food products, an effectively functioning transportation and energy corridor, and increased public well-being. Studying agricultural diversification in Georgia greatly contributes to its economic transformation.

The team came to several significant conclusions. Qualitative research revealed findings that show how farmer survival strategies may interfere with the development of the sector’s expansion and restructuring. There is poor coordination between farmers and market agents; matching product types is limited; only a small number of farmers are knowledgeable about the farming industry; farmers are poorly qualified and there is little information for them on diversification possibilities; farming plots are divided, and the land market is low, with limited expansion possibilities. Wine market diversification strategies need to be changed, but there



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Head of Microeconomics Department at the TSU Faculty of Economics and Business; Professor; Doctor of Economics; Head of the Quality Assurance Service at the TSU Faculty of Economics and Business. Since 1978 has been working at TSU and research interests include competition in the sector of agriculture and product competitiveness, farmer diversification, European models and challenges in Georgia, and strategic directions of agricultural business development. She is author of articles in international peer-reviewed journals and in collected works of scientific conferences. Author of eight textbooks and three monographs, she has participated in more than 20 conferences, workshops and congresses; was awarded the Medal of Honour and the Ivane Javakhishvili Medal. She is Board Member of the Committee of Sector Economic Development Policy of the National Academy of Political Sciences; Full member of the National Academy of Economics; Member of the European Association of Agricultural Economists (Switzerland); and the European Academy of Natural History.



Grape harvest 2014



In Georgian Vine Factory

is no sound statistical data or analytical information on farming, which makes it difficult to undertake proper research on this sector or to make any well-informed significant decisions. Finally, there is no legal basis for stimulating market expansion and strategic development.

The research team drafted key recommendations for diversification in the wine industry, and how to apply European models in Georgia. The research shows that it is vitally important to improve the structure of grape supply by varietal alignment of wine

and table grapes; to improve coordination between small farmers; when forming farmers' economic cooperation groups, adopt relevant rules and regulations; ensure the effective provision of modern theoretical knowledge and technological information to farmers and ensure effective information sharing. Furthermore, it is necessary to work out a strategy for cold storage facilities and the expansion of small wineries; the diversification of the Georgian wine market should be implemented at the traditional market level while reducing its dependence



on volatile markets; additional measures should be taken to maintain diversification / expansion of the wine market on strategic markets (including USA, China, Great Britain and Poland); and a strategy of wine market diversification should be created for new markets (Baltic States, Japan).

The researchers believe the project will enable state policy-making and implementing bodies to adopt scientifically substantiated recommendations on farming diversification opportunities. The research results will also assist local, regional and central government representatives to develop joint agricultural projects.

This is the first time that research on farming diversification has been carried out in Georgia. Since 2015, the study has been continued within the framework of a theoretical and practical research project. Scientific publications on the study and its results have been published in various international journals and collections of conference papers:

ICEIBM 2014: 16th International Conference on Economics, Industrial and Business Management, October 27-28 Barcelona, Spain.

International journal: Kharashvili, E., Chavleishvili, M., Natsvaladze, M. (2014) –“Trends and Prospects for the Development of Georgian Wine Market”. World Academy of Science, Engineering and Technology, International Science Index 94, International Journal of Social, Behavioral, Educational, Economic and Management Engineering, 8(10), 3145 – 3149.

“Farming Diversification and the Corresponding Policy for its Implementation in Georgia”, ICMORE 2015: 17th International Conference on Management, Operations Research and Economics, Rome, Italy, 2015, May 5-6); (Kharashvili, E. (2015). “Farming Diversification and the Corresponding Policy for Its Implementation in Georgia”. World Academy of Science, Engineering and Technology International Journal of Social, Behavioral, Educational, Economic and Management Engineering Vol: 9, No: 5, 2015).

Small Farming Diversification Opportunities in Georgia, ICEBMM 2016: 18th International Conference on Economics, Business and Marketing Management



STRATEGY FOR INCREASING THE COMPETITIVENESS OF GEORGIA

Assessing Georgia's economic competitiveness and identifying the obstacles blocking competitiveness have been the two main focal points for economic scholars at TSU, as the competitiveness index determines investor attitudes and consequently the country's real economic prospects. Therefore, in 2009 Associate Professor Gulnaz Erkomaishvili at the Faculty of Economics and Business began a study to determine which tools are necessary, and what means are available, to put economic policies in place and raise national competitiveness.



GULNAZ ERKOMAISHVILI

Associate Professor at TSU Faculty of Economics and Business; Doctor of Economics, Member of the Georgian-German Institute for Economic Policy and Economic Education, Expert at the Education and Economic Development Centre of Georgia (partner organization of US National Council of Economic Education).

Gulnaz Erkomaishvili is the author of more than 100 scholarly works including two monographs, eight textbooks and supplementary textbooks; participant in international conferences and grant projects (England, France, Turkey, Ukraine, etc.); supervisor of the first student competition "Let's Build the Country Together". Member of International Publishing Council of the World Academy of Science, Engineering and Technology; Editorial Board Member of journals and publications including *Big Georgian Economic Encyclopaedia*; Editor of 22 books and reviewer of 11 books.

According to the 2015 Global Competitiveness Report of the World Economic Forum, Georgia is ranked 66th of 140 countries. In 2014 it was ranked only 69th; in 2012-2013 – 77th; 2011-2012 – 88th; 2009-2010 – 90th. Thus for the fifth year there has been a positive trend for Georgia, which now precedes Slovakia (67th), Montenegro (70th), Croatia (77th), Ukraine (79th), Greece (81st), Armenia (82nd), Moldova (84th), Albania (93rd) and Serbia (94th).

These rankings have a significant effect on investment. Investors' positive attitudes towards a country promote a growth of investment flows, which is an important precondition for economic growth and reducing unemployment. Employment still remains one of the most pressing issues in Georgia. The aim of this research has been to present the competitive advantages of Georgia; to assess the role of

competitiveness in sustainable development to improve public welfare; and to reveal gaps in the country's economy. These determine the prospects for development.

To form a competitive economy the state should pursue an economic policy oriented towards a dynamic transformation of its industrial structures, especially export-oriented sectors (investment and export subsidies, tax preferences, assistance in difficult economic situations, etc). An export-oriented strategy has been a major factor in the economic development of many countries such as Singapore, Hong Kong, South Korea and Taiwan.

Trade integration is an important stage in the process of economic integration between countries, as economic globalization promotes efficient distribution and use of international resources. It encourages the optimal specialization of a country and increases the production capacity of the

global economy. To some extent Georgia's recent export structure reflects this. Copper ores and concentrates were on top of the list of Georgia's exports in the first ten months of 2015 with 11%, followed by ferro-alloys – 9%; re-export of vehicles – 24.7% (a sharp decrease compared to 2012); nuts – 8%; medicines – 6%; other products – 57%. In the opinion of foreign experts and Georgian specialists, Georgia has a very high potential for producing agricultural goods and foods for export.

Georgia has faced a trade gap for several years. From January to October 2015, imports exceeded exports by 3.4. However, this is an improvement compared to 2007 when imports exceeded exports four-fold. Stable development and raising competitiveness are impossible without increasing exports in trade turnover, and this has become an important priority for overcoming poverty.

According to the state statistics office (www.geostat.ge) in January to October 2015, Georgia's top export trading partners were Azerbaijan (12%), Bulgaria (10%), Turkey (9%), Armenia (8%) and Russia (7%). During the same period Georgia's top import trading partners were Turkey (17%), China (8%), Russia (7%), Azerbaijan (7%)

and Ukraine (6%),

From an export perspective, five economic sectors have the greatest growth potential: agriculture and processing industries, hydropower, transport, financial institutions and tourism. Georgia can be successfully involved in an international distribution of labor by developing traditional sectors such as agricultural production and foodstuffs. Considering traditional sectors of the economy, goods produced by local entrepreneurs in cooperation with foreign partners are more in demand by the international market. Franchising is another interesting sector for producing competitive goods, especially in the tea and canning industries.

The demand for drinking water is steadily increasing. Bottled water production (of both still and sparkling mineral water) has taken a lead in Georgia's economy because of its high quality (30% comes from the highest quality sources of underground drinking water), cheap price, and the stability of these natural resources that have no seasonality. Most importantly, there is a return on invested capital within a short period of time, and Georgia is situated in the midst of countries that suffer from a shortage of drinking water. Georgia's water resources

per capita are 2.5 times more than the world average, 2.4 times more than Europe and 1.7 times more than Asia. Waters from Borjomi, Sairme, Lugela, Utsera and other areas are unique for their ionic composition.

In recent years there has been an increased demand for herbal medicines worldwide, and a demand for medicinal plants has also increased in Georgia. Herbal medicines make up a significant part of the total volume of drug exports for Georgia, as the flora in the region is rich in medicinal plants, which is a sector that could be developed by greater production and processing. The state should encourage the production of ecologically friendly drugs and attract foreign investors. The rational use of natural resources such as medicinal plants could mean a growth of export revenues, new jobs and the reduction of poverty in rural areas.

Georgia could increase its competitive advantage not only through traditional industries, but also through high-quality, high-technology and highly productive manufacturing industries. This is the only way to ensure the long-term sustainable growth of competitiveness, wages and incomes. Such sectors could include pharmaceuticals, telecommunications equipment and tools, including machine tools. More attention should be paid to producing expensive, high quality high-tech goods that will reduce the import/export gap.

The competitiveness of Georgia on the global market largely depends on service sectors as well, including tourism. Developing resorts and tourism can help access the international market, especially through the geographical proximity of Europe, its major tourism market. A national tourism development policy should be created, aiming to liberalize the sector and promote both foreign and local investment.

A modern legal framework is essential for developing the tourism sector. Today the Law of Georgia on Tourism and Resorts (adopted in 1997 with amendments in 1999-2000) and the Law of Georgia on Protective Sanitary Zones of Health Resorts and Resort Localities are the only laws that address appropriate conditions, but they fail to meet modern requirements. New trends and technologies mean that over the last decade international requirements

The most competitive Commonwealth of Independent States economies



| Country | Global rank* |
|--------------------|--------------|
| Azerbaijan | 40 |
| Kazakhstan | 42 |
| Russian Federation | 45 |
| Georgia | 66 |
| Ukraine | 79 |
| Tajikistan | 80 |
| Armenia | 82 |
| Moldova | 84 |
| Kyrgyz Republic | 102 |

Source: The Global Competitiveness Report 2015-2016
* Commonwealth of Independent States 2015- 2016 rank out of 140 economies

The 12 pillars of competitiveness

The Global Competitiveness Report 2015-2016



have changed, and laws need updating for tourism development in Georgia.

Spending time in the natural environment increases well-being, and in Georgia's wellness industry medical tourism has increased. Georgia's diversity of tourist sites, recreational resources and high biodiversity are found in diverse climatic zones, the sea and rivers, mountains and forests, with diverse opportunities like mineral waters, healing mud, magnetic sand, medicinal plants and, wine therapy. These could offer a world-class wellness industry.

Studies show that institutional reforms are not enough to improve the country's

competitiveness significantly, however some major problems exist: regional political instability, potential conflict zones; high loan interest rates; gaps in tax legislation; lack of key infrastructures; irrelevance of qualifications; and inflation. Nevertheless, the World Economic Forum recognized that Georgia has made progress in several sectors: institutions, macroeconomic indicators, higher education, and labor market efficiency.

Thus researchers make several recommendations to increase competitiveness. The state should support an attractive investment environment with

access to preferential loans, effective insurance systems and infrastructures. Local food production should be encouraged, not only by households, but also by SME farms and agro-food processing enterprises; there should be more technical assistance available for employment, and international marketing strategy assistance training. Qualified and highly skilled workforces need a modern system of science and education, consulting and extension services. Investors need a stable legal environment to ensure protection of their property. A database on investment projects and relevant information on investment possibilities should be

available to international investors.

Only if the share of exports in total trade turnover increases will stable development and higher Georgian competitiveness be possible.

Publications: 1. The Strategy for Increasing the Competitiveness of Georgia, International Conference on Economics, Industrial and Business Management. Barcelona, Spain, 27-28 October, 2014. 2. The Strategy for Increasing the

Competitiveness of Georgia (Duplicate). International Journal of Social, Management, Economics and Business Engineering, 8(10), 2014, International Science Index 94. 3. Priorities of Economic Development of Georgia (scientific paper), Tbilisi, publisher Universal, 2013. 4. Economic policy, defining national competitiveness in Georgia. Збірник наукових праць Соціально-економічний розвиток України: Європейський вибір. Мелітополь, 2013.

5. Economic Policy of Georgia Determiner of National Competitiveness. Economics and Business #6, 2010. 6. Economic Policy of Georgia Determiner of National Competitiveness; scientific conference Economic and Business Development Trends in Georgia, collection of scientific works, June 26, Tbilisi, 2000. 7. International Business: Important Factor of Raising Economic Competitiveness – Business and Economics #5, 2009.



PERCEPTIONS OF GEORGIAN CUSTOMER LOYALTY TOWARDS FOREIGN BRANDS

Professor Nugzar Todua made a presentation, Perceptions of Georgian Customer Loyalty towards Foreign Brands, on April 3-4, 2014 at the 19th Corporate and Marketing Communications Conference held at the Catholic University of Milan, Italy. Professor Todua and Charity Jash, Associate Professor, carried out joint research at the TSU Faculty of Economics and Business. The main theme of the conference in Milan was “Communication through dialogue, mutual understanding without control”.

Professor Philip Kitchen of Hull University, Chair of the Strategic Marketing Department, Chief Editor of Marketing Communications chaired the conference. Researchers in marketing, advertising and marketing communications from 50 universities of the world took part in the conference.

According to the authors of the research, in a global competitive environment the high quality of a product or service is not enough for consumers. It is essential to establish the type of values that appeal to target customers. Frequently this implies influencing customers' perception, motivation and behaviour through modern marketing technologies and programs. Companies operating on the market study customers prior to making a product, investing time and money to learn the dynamics of consumers' behaviour and defining how they will react to various stimulating offers. According to consumers' cultural values, interests and lifestyles that are reflected, their demands vary greatly on the global market. The aim of a marketing strategy is to enable companies to evaluate their status realistically, and continually offer products on the global market. When companies try to maintain their competitiveness in a global environment, it is vital for them to consider the diversity of the cultural environment, the characteristics, prospects and risks of local and international businesses.

The leaps in information technology have made it much easier to ensure smoother communications between companies. Social media marketing revolutionized the global market, and modern social networks have strengthened the consumers' position in the business field. Developed countries have taken huge steps in consumer studies, however this is not so in developing countries.

The diffusion of innovative products contributes to the strengthening of international customer loyalty and intensive consumption of a product. Studies show that companies operating on the global market try various strategies to encourage consumers by showing them how significantly their support i.e. their loyalty, contributes to the company's overall success. Consumer research shapes successful marketing strategy on the global market, and integrated marketing communications is especially important for increased customer satisfaction and brand loyalty. This idea is reinforced by the works of experts in the marketing field such as Philip Kotler, K.L. Keller, Philip J. Kitchen, Kusik, Schmidt and

others.

Most studies find that a strong emphasis should be put on customer relationship management.

Companies should care about establishing and maintaining long-term relationships with their customers and should view loyalty as the main approach to business strategy. Even though it is possible to gain loyalty, keeping it is more challenging. Georgian companies should understand these issues.

The Georgian consumer market is characterized by interesting trends. Georgian consumers' marketing awareness is gradually increasing while their purchasing ability is still very low. This is reflected by consumer behaviour, yet there are no studies on Georgian consumer loyalty trends, which creates significant problems. To this end, the TSU Marketing Department made substantial studies to explore consumers' engagement levels, influencing factors at the time of purchase and how their brand loyalty is communicated.



TSU Professor Nugzar Todua and TSU Associate Professor Charita Jashi together with Professor Philip Kitchen during the 19th International Corporate and Marketing Communications Conference at Università Cattolica del Sacro Cuore (Catholic University of the Sacred Heart) in Milan.



The study emphasised four factors that influence Georgian consumers' buying decision: brand recognition, perceived quality, brand association and brand loyalty. According to the findings, the most important among strong brand characteristics were quality, communicational strategy, sales promotion, specific prices and additional services. For most Georgian consumers, the country of origin is the most important quality indicator. Research shows that low brand

loyalty and low purchasing ability stem from the inconsistent and ineffective functioning of marketing communication instruments, which discourages customers from buying.

As a result of this marketing research, the research team succeeded in identifying the specifics of Georgian consumer brand loyalty, which is characterized by loyal behaviour that is higher than average. They tend to have a favourite brand, yet are enthusiastic about new brands. The

research showed which product details and services are central to Georgian consumers, how they react on a company's loyalty promotions, whose opinion they consider when purchasing an item, how their loyalty is expressed, the level of their engagement on the market, how information is obtained and how they make a decision to purchase. Georgian companies and foreign brands considering the Georgian market will find the research results very useful.



TSU INTERNATIONAL CONFERENCES 2015



TSU INTERNATIONAL CONFERENCES 2015

INTERNATIONAL CONFERENCE ON PROBLEMS OF ETHNIC BELONGING OF THE SADZ PEOPLE AND SADZEN IN THE HISTORY OF GEORGIA

This international scientific conference was held at the Ivane Javakhsishvili Tbilisi State University on December 2, 2015 and organized by the Cherkessian (Adygean) Cultural Center. It was dedicated to the 110th anniversary of a famous Georgian linguist, Professor Giorgi Rogava, who worked at TSU in 1958-1990.

INTERNATIONAL CONFERENCE ON MODERN TRENDS IN PARTICLE PHYSICS

This international conference took place at the Ivane Javakhsishvili Tbilisi State University (TSU) on November 26-27, organized by the High Energy Physics Institute at TSU (HEPI TSU) and dedicated to the 35th anniversary of the founding of HEPI TSU. Physicists participated in the conference from Japan, Germany, Switzerland,

United Kingdom, Russian Federation, Azerbaijan and Hungary. The Rector of TSU, Academician Vladimer Papava, opened the conference and awarded the successful scientists of HEPI TSU – B. Chiladze and T. Djobava—with the University Medal.

Other presenting participants included Prof. Satoshi Mihara (Japan); Prof. Vladimer Kekelidze (Joint Institute for Nuclear Research (JINR); Prof. Peter Jenni from CERN, Geneva; Prof. Ramaz Bochorishvili (Dean of the Faculty of Exact and Natural Sciences, TSU); and Prof. G. Jaiani (Director of the Ilia Vekua Institute of Applied Mathematics, TSU). Welcome letters were sent by the Minister of Education and Science of Georgia, T. Sanikidze. The Director of JINR, Academician V. Matveev and the oldest employee of HEPI TSU, G. Nikobadze were recognized. The Director of HEPI TSU, Prof. M. Nioradze, made a comprehensive presentation about the Institute's foundation and activities. Other presentations were made by invited foreign scientists, as well as by present and former employees of HEPI TSU working abroad. Young scientists participated in the conference. All those present appreciated the presentation by a second-year BA student, B. Chargeishvili, which was prepared in CERN. During the conference a memorandum was signed between TSU and Osaka University. The memorandum



signed by TSU Deputy Rector M. Eliashvili and Professor Y. Kuno will enable Georgian students to participate in exchange programs.

CONFERENCE ON PROPERTY AND LEGAL STABILITY: THE TRANSFORMATION OF THE PROPERTY CONCEPT

This joint conference, organized by TSU and the Max Planck Institute for Comparative and International Private Law in Hamburg, was held in Tbilisi on November 5-6, 2015 with financial support from Germany's GIZ. Among invited guests were leading scientists from Germany, Slovakia, Ukraine, Russia and Central Asian countries. This international conference is the second event held through collaboration between the TSU Faculty of Law and the Max Planck Institute in Hamburg. The first conference was held in October 2012 with support from the Volkswagen Foundation, and centered on the development of private law in the Caucasus and Central Asia.

CONFERENCE ON HUMAN AND ENVIRONMENTAL RESOURCES IN MULTI-ETHNIC COUNTRIES/ MULTICULTURAL SOCIETIES



This international conference was organized and held at Tbilisi State University (TSU) in collaboration with the Justus Liebig University Giessen and supported by the German Academic Exchange Service (DAAD). It was dedicated to the 10th anniversary of collaboration between TSU and Giessen University. Along with academics from TSU and the Giessen University, about 30 persons from partner universities of Giessen University also participated, and other participants included the Deputy Rector of the University of Łódź (Poland); representatives from the German Embassy to Georgia; the Ministry of Education of Georgia; and the German Academic Exchange Service. Prof. Annette Otte was awarded an Honorary Doctorate for her contribution to the activities of Tbilisi State University.



INTERNATIONAL CONFERENCE ON CHALLENGES IN CONTEMPORARY ELEMENTARY PARTICLE PHYSICS AND QUANTUM FIELD THEORY

On October 30 – November 1, Tbilisi State University hosted this international conference devoted to the 85th anniversary of the late Academician Albert Tavkhelidze, outstanding theoretical physicist and author of several fundamental scientific discoveries in the field of theoretical and mathematical physics. The conference was organized by TSU, the Georgian National Academy of Sciences (GNAS), the Joint Institute for Nuclear Research (JINR, Dubna) and the Institute for Nuclear Research of Russian Academy of Sciences (INR).

Main topics included: Modern Issues in Particle and Relativistic Nuclear Physics; Quantum Field Theory; Astroparticle Physics and Cosmology; and Theoretical and Mathematical Physics. Speakers included Z. Berezhiani (Univ. L'Aquila, Italy); D.Fursaev (Dubna State University); G.Gabadadze (NYU, New York); G. Japaridze (GNAS); V. Kekelidze (JINR, Dubna); A. Kvinikhidze (Razmadze Math. Institute, TSU); V.Matveev (JINR, Dubna); Ch. de Morai Smith (ITP, Ttrecht); V. Rubakov (INR, Moscow); M. Shaposhnikov (EPEL, Lausanne); I. Tkachev (INR, Moscow); and G.Tsitsishvili (TSU).

CONFERENCE ON THE DEVELOPMENT OF GEORGIAN-OSSETIAN RELATIONS IN THE MODERN PRISM

This international scientific conference took place at TSU on October 13, 2015, organized by the Scientific Research Center for Georgian-Ossetian Relations. The primary objective of the conference was to promote the transition to a new stage of Georgian-Ossetian relations and modern interdisciplinary studies. Scientists, young researchers, representatives of governmental, non-governmental and international organizations, representatives of organizations, people interested in conflict studies, experts, as well as researchers in humanitarian, social and political fields attended.

There were five sections and a roundtable for students and young scholars. On the sideline of the conference there was an exhibition entitled Chronicles of Georgian-Ossetian Relations. Ossetian language textbooks, works by Ossetian scientists and photo materials were on display.

GEORGIAN-GERMAN INTERNATIONAL CONFERENCE ON CRIMINAL LAW

This Conference was held at TSU on October 9-10 through support from the Institute of Comparative and Transnational Criminal Law (Director Prof. Merab Turava). Professors from the TSU Faculty of Law, as well as leading scientists in criminal law from various German universities participated. These included the Humboldt University of Berlin; Ludwig Maximilian University of Munich; Eberhard Karls Universität Tübingen; Friedrich Schiller University Jena; University of Cologne and University of Hannover.



6TH ANNUAL CONFERENCE OF THE GEORGIAN MECHANICAL UNION

The 6th Annual Conference of the Georgian Mechanical Union was held on September 30-October 3 in collaboration with the Georgian National Committee of Theoretical and Applied Mechanics; Ivane Javakhishvili Tbilisi State University (in particular, the Faculty of Exact and Natural Sciences and the Vekua Institute of Applied Mathematics); Tbilisi International Center of Mathematics and Informatics; and the Georgian Aviation University. Meetings were held at the Georgian Aviation University. The conference was opened by Giorgi Jaiani, President of Georgian Mechanical Union, Director of Vekua Institute of Applied Mathematics and Full Professor at the TSU Faculty of Exact and Natural Sciences. Deputy Rector of TSU, Prof. Merab Eliashvili, and the Deputy Rector of the Georgian Aviation University, Gela Kipiani, also made welcome speeches. Topics included: Mechanics of Deformable Solids; Mechanics of Fluids; Solid-Fluid Interaction Problems; and Related Problems of Analysis. There were seven 35-minute reports and 37 20-minute reports. The conference website has the following address:

<http://www.viam.science.tsu.ge/others/gnctam/annual6.htm>

CONFERENCE ON MEDIA, LAW AND ETHICS: REGIONAL PERSPECTIVES



This international South Caucasus scientific conference was held at TSU on October 27, jointly organized by TSU and Deutsche Welle Akademie. Academic staff from the faculties of journalism and law from Georgia, Armenia and Azerbaijan participated, and 11 papers presented. The event was supported by the TSU Faculty of Law and the Department of Journalism and Mass Communications.

CONFERENCE ON LANGUAGE AND MODERN TECHNOLOGIES

This conference was held at TSU on September 10, 2015 and organized by the Arnold Chikobava Institute of Linguistics and supported by the Parliament and the National Parliamentary Library. The 4th international conference was opened by Parliament Speaker Davit Usupashvili and dedicated to issues of creation of text corpora, electronic libraries, software for language e-learning and for translation. This is an urgent task for the overall inclusion of the Georgian language into cyberspace. A similar conference had been held in 2013 in the Parliament building in Kutaisi at the initiative of Davit Usupashvili.



CONFERENCE ON TOPICAL PROBLEMS OF SUSTAINABLE DEVELOPMENT OF NATIONAL ECONOMIES

This conference was held on June 11, 2015 and organized by the P. Gugushvili Institute of Economics, dedicated to the 110th anniversary of the birth of Academician Paata Gugushvili. Scientists

from Georgia, Russia, Poland, Azerbaijan, Moldova, Ukraine, Latvia, Lithuania and Kazakhstan participated.

INTERNATIONAL SCIENTIFIC CONFERENCE ON SPACE, SOCIETY, POLITICS

This international scientific conference was held in Tbilisi on June 25-27, 2015 and was organized by the Faculty of Social and Political Sciences at Tbilisi State University. The main topic was “Social and Spatial Mobility”.



FIRST DIASPORA PROFESSIONAL FORUM: SHARE EXPERIENCE WITH MOTHERLAND

The first Diaspora professional forum Share Experience with Motherland took place at TSU beginning on May 27, 2015; Georgia celebrates the Day of the Georgian Diaspora on May 27. The State Minister’s Office for Diaspora Issues has celebrated this day every year since 2008. The day opened with a professional forum “Share Experience with Motherland” and organized by the State Minister’s Office for Diaspora Issues in partnership with TSU.



At the first Diaspora professional forum, persons who had been scattered around the world came to meet in Georgia. These included the Heads of foreign organizations working on Diaspora issues, representatives of international organizations; and representatives of the historical Diaspora, including descendants of the leadership of

the first Republic of Georgia arrived to attend the forum.

After the opening ceremony, the forum was divided into seven working groups, where foreign experts and their Georgian counterparts discussed the development of relevant fields. Discussions and debates were held after delivering reports in thematic groups to establish a comprehensive, sustainable strategy of problem resolution and achieve tangible results in future.

INTERNATIONAL CONFERENCE „APPLIED ECOLOGY: PROBLEMS, INNOVATIONS“



This conference (ICAE-2015) was held on May 7-10, 2015 with the financial support from the Shota Rustaveli National Science Foundation and hosted by the TSU Faculty of Exact and Natural Sciences and the Department of Geography. It was chaired by Prof. Lia Machavariani. The Rector of TSU, Academician Vladimer Papava attended the opening on May 7, accompanied by the Dean of the Faculty of Exact and Natural Sciences, Prof. Ramaz Bochorishvili; TSU professors; and about 150 foreign and local scientists. One session was dedicated to the 95th anniversary of Prof. Shota Tskhovrebashvili, a member of the TSU Council of Advisers. A photo exhibition “Georgia’s Nature: yesterday and today” opened on the sidelines of the conference, then on May 9-10 the conference continued its work in Batumi.

CONFERENCE ON THE LIBERALIZATION OF JUVENILE CRIMINAL LAW POLICY – THE ROAD TO EUROPE

This scientific conference was held at Tbilisi State University on April 29 with the attendance of the Ministry of Justice, Prosecutor’s

Office, Interior Ministry, Ministry of Corrections and Legal Assistance, and other judicial and government agencies. The first session was dedicated to a discussion of the draft Juvenile Justice Code, led by Prof. Nino Gvenetadze, and Justice Renate Winter, who explained the new draft Juvenile Justice Code and how it complies with international standards. Invited experts talked about the issues of juvenile crime prevention according to German legislation and the Deputy Dean of the TSU Faculty of Law, Associate Professor Moris Shalikashvili delivered a report on the Criminological Assessment of the Juvenile Justice Code. Judges, prosecutors and other legal practitioners expressed their viewpoints on the liberalization of criminal policy toward juvenile offenders.



7TH INTERNATIONAL CONFERENCE OF STUDENT ARCHAEOLOGISTS



This Annual Meeting for student archaeologists was dedicated to the archaeological pioneer Augustus Henry Lane Fox Pitt-Rivers and organized by Tbilisi State University in Vardzia (South Georgia) from 23 – 27 April 2015. Scholars from the Universities of Oxford, Edinburgh, Innsbruck, Warsaw, Lodz, Torun, Ankara, Tehran, Durham, Leiden, Melbourne and Jena, as well as from TSU and the Institute of Archaeology of the Academy of Poland participated.



TSU at the International Week of Science and Innovations

The Ivane Javakhishvili Tbilisi State University participated actively during the International Week of Science and Innovations, held in November 2015.

On November 14, during this international science festival TSU students and professors gave public lectures, and visitors could take part in simulated archaeological field work as well as amusing chemistry and physics experiments. Exhibits from the TSU Museum of Zoology and the TSU Scientific Laboratory of Mineralogy were also on display at Expo-Georgia.





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