

EMLex Autumn Meeting and Colloquium

Tbilisi 2019, Georgia

(October 8 - 11)

PROGRAM



Funded by the
Erasmus+ Programme
of the European Union

Lexicographic Centre.
Ivané Javakhishvili Tbilisi State University



EMLex Colloquium

Lexicography at a Crossroads

October 10

Program and Abstracts

The **Program Committee** of the Colloquium:

Rufus Gouws (Stellenbosch University)

Tinatin Margalitadze (Ivane Javakhishvili Tbilisi State University)

George Meladze (Ivane Javakhishvili Tbilisi State University)

Peter Meyer (Institut für Deutsche Sprache, Mannheim)

Tbilisi, 2019

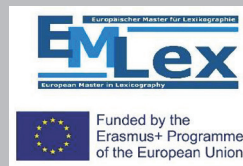
Lexicography at a Crossroads

“The general public does not like dictionaries any more”, “Interest of the general public towards dictionaries is declining”, “Is lexicography dying?” – one, not infrequently, comes across such statements nowadays. There is much talk about dictionaries of the future.

Lexicography as a field of knowledge has undergone significant evolution. Lexicography has always kept abreast of the newest developments in linguistics and allied sciences, frequently even being ahead of these developments. But the advent of the digital era proved to be the greatest challenge for lexicography, causing revolutionary changes and turning it into one of the most dynamic and rapidly developing fields of knowledge. Printed dictionaries gave way to electronic and online dictionaries, which gradually determined radical rethinking of many theoretical and practical issues. Rapid changes in language technology and artificial intelligence and the demand for the creation of more sophisticated applications compel lexicographers to look ahead and foresee the place of lexicography and lexicographers in these developments.

The EMLex Tbilisi Colloquium will concentrate on the following questions:

- ❖ Is it true that there may be no more need for traditional dictionaries?
- ❖ Is it true that dictionaries and lexicographic data should only be incorporated in different translation or educational applications?
- ❖ What will the role of standalone dictionaries (electronic and printed) be in future?
- ❖ To what extent and how must lexicographic data be restructured so that it can be more flexible and adaptable to different platforms and applications?
- ❖ How can we, as lexicographers, fully realize the demands imposed on us by our ‘digitalized’ young generation?
- ❖ To what extent must traditional dictionary didactics – to the extent that it is practiced at all – turn into a more general didactics of competent/critical usage of everyday language-related IT tools?
- ❖ What should be done to bring together the lexicographic and NLP worlds for the benefit of both communities and the societies they represent?



Plenary Session.		Chair: Stefan Schierholz
9:00 – 10:10	Dictionaries and Other Language Tools for Translators (keynote speech) Pius ten HACKEN, Leopold-Franzens-Universität Innsbruck, Austria	
10:10 – 10:40	Coffee break.	
Morning session.		Chair: Ulrich Heid
10:40 – 11:40	Grasping the Big Picture: A Necessary Reflection on the Past, Present and Future of Lexicography Sven TARP, Centre for Lexicography, Aarhus University, Denmark	
11:40 – 12:20	Reflections on the Slovenian User Study: What Does It Tell Us? Donna M. FARINA, New Jersey City University, USA Alenka VRBINC, Marjeta VRBINC, University of Ljubljana, Slovenia	
12:20 – 13:45	Lunch break	
Afternoon session.		Chair: Idalete Maria da Silva Dias
13:45 – 14:30	The Vila Vigoni Theses on Lexicography (presentation) Stefan SCHIERHOLZ, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany Martina NIED CURCIO, Università degli Studi Roma Tre, Italy	
14:30 – 15:15	Nicht mehr ein Henne-Ei-Problem? Verwendung und Verwertung von Daten sowie Ressourcen aus dem NLP-Bereich und der Lexikographie María José DOMÍNGUEZ VÁZQUEZ, Universidade Santiago de Compostela und Instituto da Lingua Galega, Spain Carlos VALCÁRCEL RIVEIRO, Universidade de Vigo, Spain	

15:15 – 16:00	The Georgian Language in AI-based Translation Models: Cooperation of Lexicographers and NLP specialists Tinatin MARGALITADZE, Ivane Javakhishvili Tbilisi State University, Georgia Zakharia POURTSKHVANIDZE, Goethe University Frankfurt, Germany
16:00 – 16:30	Coffee break
Evening session. Chair: Zita Hollós	
16:30 – 17:00	The Comprehensive Georgian Dialectological Lexicographic Base and the Electronic Atlas of Georgian Dialects Marine BERIDZE, Arn. Chikobava Institute of Linguistics, Tbilisi State University David NADARAIA, Ozorix ltd
17:00 – 17:30	Dictionaries as Tools in Educational Resources (A Web-Based Chrestomathy of Gothic and Anglo-Saxon Written Records) Tinatin MARGALITADZE, Ivane Javakhishvili Tbilisi State University George MELADZE, Ivane Javakhishvili Tbilisi State University
17:30 – 19:00	Round Table Discussion Lexicography at a Crossroads Moderator: Rufus H. GOUWS, Stellenbosch University, South African Republic
20:00	Dinner at the Restaurant Tsiskvili (the Mill) Concert of the Georgian folk songs and dances

Dictionaries and Other Language Tools for Translators

Pius ten HACKEN,

Leopold-Franzens-Universität Innsbruck, Austria

pius.ten-hacken@uibk.ac.at

Though relatively small in numbers, translators have traditionally been an important user group of dictionaries, both because they are heavy users and because they are expert users. The choice of monolingual or bilingual dictionaries is a matter of debate. Translation students generally prefer bilingual dictionaries, but translation teachers want their students to use monolingual dictionaries. This is similar to Bogaards's (2003) observation that language learners choose bilingual dictionaries, whereas their teachers want them to use only monolingual ones.

The requirements on a dictionary for translators are different to the ones for the general public. A translator is never only interested in understanding a text, but always also in producing an appropriate equivalent text in another language. For a long time, dictionary compilers could decide to what extent they wanted to take into account these special needs. There was a level playing field in the sense that competition was only with other dictionaries.

In the past two decades, this situation has changed dramatically. In the 21st century, the use of CAT-tools has become generalized. As outlined in ten Hacken (2017), for many language pairs, machine translation has become a significant practical tool for professional translators. In addition, tools based on aligned bilingual corpora, e.g. Linguee, have become popular.

In this context, the question arises what the role of dictionaries for translators will be in future. Which tasks can be performed better by dictionaries than by other tools and how should dictionaries be designed to perform these tasks?

Grasping the Big Picture: A Necessary Reflection on the Past, Present and Future of Lexicography

Sven TARP,

Centre for Lexicography, Aarhus University, Denmark

st@cc.au.dk

The paper will botanize in the history of lexicography trying to get a deeper understanding of what is happening to the discipline in the framework of the Fourth Industrial Revolution. The objective is to grasp the big picture and suggest possible ways out of the present deadlock which is described as a crisis of existence for the millennial discipline. The point of departure is the still more evident fact that the business model used so far to sustain the compilation of dictionaries has become obsolete. Today, more and more publishing houses are closing down their lexicographical sections due to dramatically reduced sales and a surprising lack of visions.

A short excursion into the history of lexicography will show that a sudden change of the technological base, as the one we are now experiencing, suggests a total revolution of the discipline in all its major dimensions. In order to be successful, such a revolution requires a mental break with past traditions and habits. The paper will therefore outline a new and different business model that corresponds to the current introduction of disruptive technologies. In this perspective, it will argue that recent technological breakthroughs make it both possible and necessary to recover proto-lexicographical traditions largely forgotten.

As a matter of example, the paper will focus on a series of bilingual writing assistants published in 2019 by the Danish company Ordbogen A/S. It will discuss the new challenges posed to lexicography by these and similar tools. It will argue that these challenges cannot be solved by means of traditional user research which is basically retrospective as it unfolds in the framework of an old paradigm. As an alternative, and without excluding other types of user research, the paper will recommend disruptive thinking by means of brainstorm, immersion and contemplation. In this respect, it will provide some examples on how to proceed in order to elegantly fill relatively small pop-up windows with relatively big amounts of lexicographical data without incurring in information overload.

Finally, the paper will problematize the incipient competition between the human lexicographer and the new artificial lexicographer and give a brief account of a possible future redistribution of tasks.

Reflections on the Slovenian User Study: What Does It Tell Us?

Donna M. FARINA, New Jersey City University, USA,
dfarina@njcu.edu

Alenka VRBINC, University of Ljubljana, Slovenia,
alenka.vrbinc@ef.uni-lj.si

Marjeta VRBINC, University of Ljubljana, Slovenia
marjeta.vrbinc@ff.uni-lj.si

Farina, Vrbinc, and Vrbinc (2019) reported on a qualitative study of online dictionary use at the University of Ljubljana, Slovenia, during which students were given look-up tasks with a learner's dictionary and were interviewed as they completed them. Students were questioned about their habits of dictionary use, their look-up experience, and their perceptions of the utility and quality of definitions and illustrative examples.

The study results provide insight into the efficacy of the specific dictionary used. In addition, the study revealed much about how these student-participants regard dictionaries and how they approach their use: what their “relationship” is to the dictionary. In particular, many of the participants had no relationship with dictionaries and no real understanding of their purpose. While we might suspect that the students, though they were quite proficient in the English language, had received little-to-no education on dictionary use during their academic careers, this is contradicted by the curriculum in the Slovenian school system.

The comments of the participants indicated that they are indeed “demanding” users with very firm ideas and high expectations about the type of information they wish to receive in a dictionary and how they prefer to receive it.

This paper will describe the Slovenian user study and discuss what are the takeaways for concerned lexicographers. In particular, it will reflect on how students should be taught about dictionaries today--if we still want them to use dictionaries tomorrow. The paper will add brief remarks on dictionary education in Georgia and what other programs can learn from the Georgian example.

Reference

Farina, D. M. T. Cr., Vrbinc, M., & Vrbinc, A. (2019). Problems in online dictionary use for advanced Slovenian learners of English. *International Journal of Lexicography*, *ecz017*, 1–22 doi: 10.1093/ijl/ecz017

The Vila Vigoni Theses on Lexicography

Stefan SCHIERHOLZ,

Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

stefan.schierholz@fau.de

Martina NIED CURCIO,

Università degli Studi Roma Tre, Italy

martina.nied@uniroma3.it

From 26 to 28 November 2018, 18 experts from the fields of Dictionary Research, Practical Lexicography, German as a Foreign Language, Italian Studies, Translation Science and Empirical Linguistics congregated at the Centro Italo-Tedesco per l'Eccellenza Europea / Deutsch-Italienisches Zentrum für Europäische Exzellenz, Villa Vigoni on Lake Como, for a workshop on the topic of future challenges for lexicography.

Held within this framework of German-Italian cooperation in humanities, the discussion dealt with aspects of the digital society of the future. At the close of the event, they formulated the 15 Villa Vigoni Theses on Lexicography which will be presented at the EMLex-colloquium in Tbilisi.

Nicht mehr ein Henne-Ei-Problem?

Verwendung und Verwertung von Daten sowie Ressourcen aus dem NLP-Bereich und der Lexikographie

María José DOMÍNGUEZ VÁZQUEZ,

Universidade de Santiago de Compostela und Instituto da Lingua Galega, Spain

majo.dominguez@usc.es

Carlos VALCÁRCEL RIVEIRO,

Universidade de Vigo, Spain

carlos.valcarcel@uvigo.es

„Eine wichtige Aufgabe der Lexikographie der digitalen Zukunft“ ist laut der Villa Vigoni-These 7 „die geordnete Zusammenführung von automatisch aus Textkorpora erzeugten und gezielt aufbereiteten Daten sowie einer benutzerorientierten Präsentation.“ Hinzu lässt sich ebenfalls ergänzen, dass die lexikographisch behandelten Daten sowie Forschungsergebnisse zur Bereicherung von verschiedenartigen Informationssystemen und NLP-Tools wieder verwertet werden können. D.h. nicht nur die Lexikographie kann von der NLP profitieren, andersherum ebenso, was nicht häufig zur Sprache kommt. Somit knüpft unsere Arbeit an die Frage des Zusammenbringens der Lexikographie und der NLP an.

Ein für beide gewinnbringender Weg schöpft durchaus aus einer verstärkten Wechselwirkung zwischen den lexikographischen und NLP-Ressourcen aus. Zu diesem Zweck stellt sich eine kombinierte wissenschaftliche Methode als unentbehrlich heraus, die sich zum einem auf die Erkenntnisse von den beiden Wissenschaften stützen und zum anderen Ergebnisse für beide »Welten« mit sich bringen sollte. Die Darstellung dieser Methode, die die Wechselwirkung zwischen den Erkenntnissen aus dem NLP und der Lexikographie sowie der Sprachwissenschaft in den Mittelpunkt stellt, ist der Schwerpunkt unseres Vortrags. Veranschaulicht wird sie mit Hilfe der multilingualen Generatoren *MultiGenera*¹ und *MultiComb*², die lexikographisch aufbereitete sowie multilingual automatisch erzeugte Daten anbieten. Ausgangspunkt für beide Generatoren ist das multilinguale Valenzwörterbuch zur Nominalphrase PORTLEX.

¹ MultiGenera dient zur automatischen Erzeugung von Nominalphrasen –mit ihren Argumenten sowie jeweiligen Realisierungsformen und Kombinatorik.

² MultiComb hat die Aufgabe der Generierung vom phrasalen und satzartigen Rahmen für die von MultiGenera automatisch erzeugten nominalen Argumentstrukturen.

Der Entwicklung unserer Generatoren liegt die Verwendung von Ressourcen ohne eine gezielte lexikographische Behandlung (wie Wordnets oder das Freeling Tagger) und von denjenigen mit einer gezielten lexikographischen Behandlung, wie z.B. verschiedenen Wörterbuchtypen zugrunde. Aus der Abbildung 1. geht auch hervor, dass unsere entwickelten Tools (APIs für das Spanische, Französische und Deutsche, LEMATIZA, COMBINA und XERA) dazu beitragen, aus lexikographischen Daten neuere lexikographische Daten automatisch zu erzeugen, die grundlegende Bestandteile der Generatoren *MultiGenera* und *MultiComb* sind.

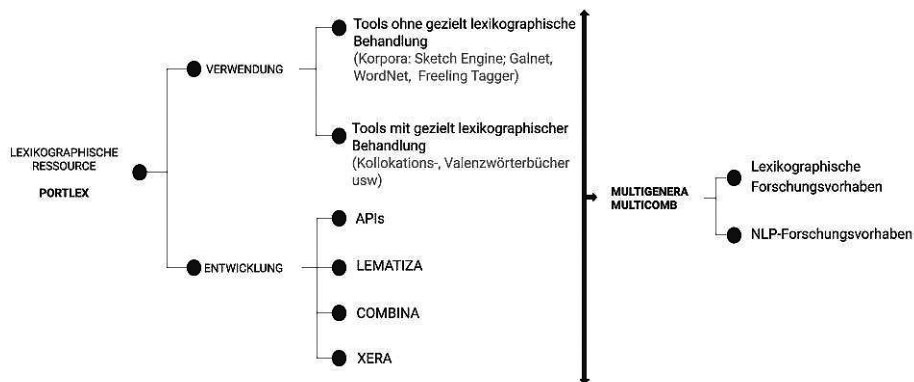


Abb. 1:
Wechselwirkung zwischen der
Lexikographie und dem NLP

Es liegt nahe, dass für die Entwicklung der Generatoren beide »Welten« von Belang sind: zum einen erfolgt die automatische Datenerhebung aus NLP-Ressourcen und -werkzeugen, zum anderen ist eine menschliche lexikographisch fundierte Datenanalyse unentbehrlich.

Wichtig ist bei diesem Wechselwirkungs- und Interoperabilitätsmodell, dass die automatisch generierten Daten bei lexikographischen und NLP-Forschungsvorhaben wieder verwendet und verwertet werden können. Ein Beispiel für die Verwendung von NLP-Tools zugunsten der Lexikographie bilden unsere *Multitools* (LEMATIZA, COMBINA und XERA usw.). Als eine mögliche Anwendung der Ergebnisse aus der Lexikographie seitens NLP-Ressourcen und Informationssystemen lässt sich hier z.B. die Integration der nominalen Argumentenstrukturen und/oder der ontologischen Beschreibungen in

verschiedenartige Informationssysteme sowie die Verwertung von multilingualen Daten in Txt- oder JSON-Format nennen. Die Datenbenutzung seitens der Lexikographie ist auch möglich:

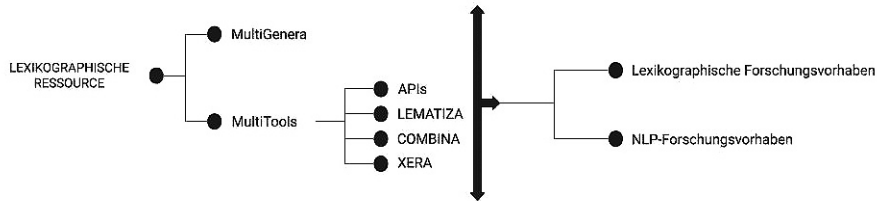


Abb. 2.
Von MultiGenera zu anderen
Forschungsvorhaben

Literaturverzeichnis

Domínguez Vázquez, María José & Valcárcel Riveiro, Carlos & Lindemann, David (2018): “Multilingual generation of noun valency patterns for extracting syntactic-semantic knowledge from corpora (MultiGenera)”, in: *XVIII EURALEX International Congress. Lexicography in Global Contexts*, 17-21 July. Ljubljana: Znanstvena založba, 847-854.

Domínguez Vázquez, María José/Solla Portela, Miguel Anxo/Valcárcel Riveiro, Carlos: “Resources interoperability: exploiting lexicographic data to automatically generate dictionary examples” (im Druck).

MultiGenera: <http://portlex.usc.gal/multigenera-english/>

MultiComb: <http://portlex.usc.gal/multicomb-english/>

Villa Vigoni-Thesen: <http://lingueletteratureculturestraniere.uniroma3.it/bacheca/emlex/villa-vigoni-thesen/>

Tools

API - Spanisch <http://portlex.usc.gal/develop/es/api/>

API - Französisch: <http://portlex.usc.gal/develop/fr/api/>

API - Deutsch: <http://portlex.usc.gal/develop/de/api/>

COMBINA: <http://portlex.usc.gal/develop/combina.php>

LEMATIZA: <http://portlex.usc.gal/develop/lematiza/>

PORTLEX: <http://portlex.usc.gal/develop/>

XERA: <http://portlex.usc.gal/develop/xera.php>

The Georgian Language in AI-based Translation Models: Cooperation of Lexicographers and NLP specialists

Tinatin MARGALITADZE,

Ivane Javakhishvili Tbilisi State University, Georgia

Tinatin.margalitadze@tsu.ge

Zakharia POURTSKHVANIDZE,

Goethe University Frankfurt, Germany

pourtskhvanidze@em.uni-frankfurt.de

The present paper as well as the entire project is inspired by the keynote speech of the past president of EURALEX Lars Trap-Jensen “Lexicography between NLP and Linguistics: Aspects of Theory and Practice” (2018). In it Trap-Jensen discusses how lexicography and natural language processing can mutually benefit from each other and how important it is to have cooperation between them.

It is no coincidence that we are witnessing an increasing need for high-quality lexicographical data. Language technology and artificial intelligence are moving into a phase where the word lists and morphological lexicons developed inside the NLP environment itself are insufficient to meet the demands for developing smarter and more sophisticated products. Automatic content summaries, domain classification and virtual assistants are but a few examples of applications that require ‘knowledge’ or some way of handling the semantics of human language. By far the best existing semantic descriptions of language are dictionaries, and for that reason, it is obvious that existing dictionaries are interesting for developers of such applications (Trap-Jensen, 2018).

Among many relevant issues, Trap-Jensen argues that it is not fair and correct just to demand data from lexicographers for the purposes of NLP. It is important to actively involve them in such projects, as it is only lexicographers who have profound understanding of the nature of the data created by them. We could not agree more with this statement which reminded us of the letter received by the team of the *Comprehensive English-Georgian Online Dictionary* (CEGOD) from the Google

some years ago. The letter asked the editorial board of the CEGOD not only to provide the dictionary data to them (for free), but also to give up all the rights to the Dictionary developed by the team over three decades of hard and dedicated work.

The new project, initiated by the Lexicographic Centre of Tbilisi State University: The Georgian Language in AI-based Translation Models, is based on this principle of cooperation between data developers and NLP specialists. The Lexicographic Centre possesses a database, unique for the Georgian language, in the form of parallel English-Georgian sentences, which is necessary training data for ‘teaching’ Georgian to the artificial intelligence (AI). The database includes two sub-components: the database of the CEGOD and the database of the English-Georgian parallel corpus.

The CEGOD was being created over the time span of 35 years. It contains 110 000 entries. The Dictionary represents the polysemy of English words with optimum adequacy: each polysemous meaning of a word is supplied with illustrative phrases and sentences, translated into Georgian. The method of rendering English meaning into Georgian in the CEGOD is based on the original semantic theory, which underlies the composition of each entry from the CEGOD. The said methodology is described in an article by T. Margalitadze and G. Meladze (2016). As is universally acknowledged, word sense disambiguation is a major challenge for natural language processing and computational lexicography. Therefore, the Dictionary data, created with the due attention to the problem of equivalence between English and Georgian, and providing many Georgian contextual equivalents for each English lexical unit¹, is considered to be the unique training base for the Georgian AI. The implementation of this project will also provide an opportunity to analyse the effectiveness of lexicographic resources created according to the said semantic theory and the theory itself with respect to the development of translation software generally.

Another important aspect of developing Georgian translation program is collection of software platforms and models adapted to the specifics of the Georgian language. As a software prototype for the project, there were selected the researches which are based on the simulation of human abilities within the framework of AI. DeepLearning technology has demonstrated many successful examples of becoming the leading technology and methodological framework. The knowledge of the above-mentioned software will be provided by the specialists of the field.

Thus the present interdisciplinary project aims to interconnect the Deep Learning technology with the high-quality ma-

¹ i.e each polisemous meaning of a word

chine-translation from Georgian and into Georgian. The intended result requires the conduct of complex scientific preliminary work, although the project focuses on the practical use of the developed model: ensuring the technological framework for the automatic Georgian/English, English/Georgian translation of texts of any size and complexity from any genre. The project is based on the close cooperation of the team of the Lexicographic Centre and the NLP specialists of Goethe University Frankfurt in Germany

References:

[CEGOD] *Comprehensive English-Georgian Online Dictionary* (editor-in-chief T. Margalitadze, 2010). Tbilisi : Lexicographic Centre.
www.dict.ge

Trap-Jensen, L. (2018). Lexicography between NLP and Linguistics: Aspects of Theory and Practice. Čibej, Jaka, Gorjanc, Vojko, Kosem, Iztok & Krek, Simon (eds.), 2018. *Proceedings of the XVIII EURALEX International Congress: Lexicography in Global Contexts*. Ljubljana: Ljubljana University Press, Faculty of Arts.
<https://euralex.org/publications/lexicography-between-nlp-and-linguistics-aspects-of-theory-and-practice/>

Margalitadze, T. & Meladze, G. (2016). Importance of the Issue of Partial Equivalence for Bilingual Lexicography and Language Teaching. Margalitadze, Tinatin & Meladze, George (eds.), 2016. *Proceedings of the XVII EURALEX International Congress: Lexicography and Linguistic Diversity*. Tbilisi: Ivane Javakhishvili Tbilisi State University.
<https://euralex.org/publications/importance-of-the-issue-of-partial-equivalence-for-bilingual-lexicography-and-language-teaching/>

The Comprehensive Georgian Dialectological Lexicographic Base and the Electronic Atlas of Georgian Dialects

Marina BERIDZE,

Arnold Chikobava Institute of Linguistics at TSU
marineberidze@yahoo.com

David NADARAIA,

Ozorix Ltd.
david.nadaraia@gmail.com

The Comprehensive Georgian Dialectological Lexicographic Base and the Electronic Atlas of Georgian Dialects were created within the framework of the longstanding project under the umbrella name “Linguistic Portrait of Georgia”. Two corpus resources were published at the previous stages of the project: “The Georgian Dialect Corpus” (GDC) and “The Georgian Scientific Meta-Language Corpus” (SMLC).

The Lexicographic Database of the Georgian Dialects and the System of Cartographic Visualisation were created at the next stage of the Project’s development as the separate components of the GDC.

The Lexicographic Database of the Georgian Dialects is a technological system, a software embedded into the platform of the corpus, which makes it possible to mobilize the lexicographic data, to structure it, to provide it with the linguistic, meta-linguistic, encyclopaedic and other information, and to compile a cumulative dictionary of the Georgian dialects as well as other types of dictionaries based on the latter.

The possibility to cartographically visualize corpus data was another novelty introduced by the Project into the scientific milieu of Georgia.

Nowadays, the lexicographic database includes over 10 comprehensive and minor dictionaries (with up to 60,000 words), of which six are published and freely available (Fereydanian, Ingiloan, Imeretian, Laz, the dialect of the so-called “Chveneburebi” (i.e. ethnic Georgians in Turkey), Tushetian), while others are at different stages of processing, allowing however general search for words or their fragments, as well as for their grammatical, semantic, structural and other characteristics.

Multi-level annotation system enables the user-side configuration of linguistic and meta-characteristics within the lexicographic database. By means of a flexible search tool it is also possible to generate various types of dictionaries of different dialects (e.g. a dictionary of loanwords, dictionary of compound words, a dictionary of the words belonging to certain semantic or grammatical groups, *etc.*).

The idea to set up the Comprehensive Georgian Dialectological Lexicographic Base was an attempt to present the corpus-related and lexicographic components within a single space as a research tool. At the same time, it was meant to carry out cartographic visualisation of corpus data.

Today the Base is an effective tool for the lexicographic presentation of Georgian dialects, whose further development must involve two main aspects, namely the constant enrichment of the material content, and the creation of as many up-to-date lexicographical products as possible.

Dictionaries as Tools in Educational Resources (A Web-Based Chrestomathy of Gothic and Anglo-Saxon Written Records)

Tinatin MARGALITADZE,

Ivane Javakhishvili Tbilisi State University, Georgia

tinatin.margalitadze@tsu.ge

George MELADZE,

Ivane Javakhishvili Tbilisi State University, Georgia

meladzegeorge@yahoo.com

Dictionary article structure is one of the most complicated theoretical issues of lexicography. Each genre of lexicography requires specific treatment of this problem, where both: contemplative as well as transformative approaches are very important, i.e. critical study and generalization of existing dictionary practices and new ideas stemming from linguistic and lexicographic theories (Bergenholtz & Gouws 2012; Gouws, 2014). Dictionary structures changed dramatically while moving from printed to electronic (desktop) and online dictionaries. There is still another important change to be expected in the nearest future: study of dictionary article structures integrated in educational resources.

We came across this problem while working on our new project: a Web-Based Chrestomathy of Gothic and Anglo-Saxon Written Records (with dictionaries and grammatical paradigms). The Chrestomathy was executed at the Lexicographic Centre of Tbilisi State University with the funding of Shota Rustaveli National Science Foundation of Georgia (Grant No. FR17_87).

The Chrestomathy (<https://germanic.ge/en/>) is intended as a complex digital resource which can considerably facilitate the study of the Gothic and Anglo-Saxon (old English) languages, so important for Germanic and Indo-European studies. The texts included in the online Chrestomathy are programmatically integrated with Gothic-Georgian/Gothic-English and Anglo-Saxon-Georgian/Anglo-Saxon-(Modern) English dictionaries and with the morphological paradigms of Gothic and Anglo-Saxon words. The entire resource has its Georgian and English versions, making the Reader accessible to the indi-

viduals interested in philology, linguistics and, especially, in Germanic studies in general, or, in Indo-European studies and comparative linguistics in particular both in Georgia and (thanks to the international status of English) in the entire world.

While working on the Dictionary component of the Chrestomathy, we realized that a dictionary entry integrated in the Chrestomathy needed to be constructed in a different way than an entry in an ordinary bilingual dictionary. In an ordinary bilingual dictionary, one of the challenges of lexicographers is the problem of equivalence, which is to be addressed properly (Adamska-Salaciak 2010; Margalitadze, Meladze 2016). Comparison of the translation of one and the same Gothic word in the Georgian translation of Gospels, reveals that in many cases, a Gothic word has several contextual equivalents in Georgian. For example: meaning of the Gothic verb **gafulljan** is ‘to fill’, in Georgian ავსებდა ‘avseba’. In Luke 1:15 ‘jah **ahmins weihis gafulljada** nauhþan in wambai aiþeins seinaiþos’ (‘and he shall be filled with the Holy Ghost, even from his mother’s womb’), the Gothic verb **gafulljan** is translated by the Georgian verb აღვსებდა aghvseba (lit. ‘to overflow’); in Mark 15:36 ‘þragjands þan ains jah **gafulljands swam akeitis** ...’ (‘And one ran and filled a sponge full of vinegar’), the Gothic verb **gafulljan** is translated by a Georgian verb გაჟღენთა ‘gazghenta’ (lit. ‘to soak, to saturate’).

In a bilingual Gothic-Georgian Dictionary entry of the Gothic verb **gafulljan**, its meaning would be described by the Georgian equivalent ავსებდა ‘avseba’ (lit. ‘to fill’), followed by several illustrative citations from Gospels, where the Gothic verb in question is translated by different Georgian contextual equivalents (‘to overflow’, ‘to soak’; see examples above).

As mentioned above, a different approach was adopted for the dictionaries integrated in the present Chrestomathy. Dictionary entries do not contain illustrative quotations as the Chrestomathy comprises texts from Gospels where Gothic words are attested. As to description of meaning, alongside general Georgian equivalents of Gothic words, contextual equivalents are also provided in some instances, when these contextual equivalents are used in the texts of the Chrestomathy. In the case of the Gothic verb **gafulljan**, discussed above, its dictionary entry in the Chrestomathy contains two meanings: 1. ავსებდა ‘to fill’; 2. გაჟღენთა ‘to soak, to saturate’. The latter is a contextual equivalent of the Gothic verb **gafulljan** (see discussion above), but it is added to the entry as a separate meaning, because this contextual equivalent is attested in Mark 15, one of the texts of the Chrestomathy.

As the Chrestomathy contains texts from old languages, Dictionaries, incorporated in it, include etymologies of words, i.e. cognate words from related Old Germanic (Old English, Old High German, Old Saxon, Old Frisian, Old Norse, Old Icelandic) or other Indo-European languages (Ancient Greek, Latin, Sanskrit, Hittite, Slavic languages, etc.) etymologi-

cally connected with the particular Gothic word/dictionary headword. Thus, the resource gives the user a clear idea of the etymological background of a word, showing at the same time the pattern of development, which the meaning of its root has followed in particular related languages.

The work on the Chrestomathy made us realize that article structure of dictionaries integrated in educational resources is an important issue. It is different from independent dictionary structures and needs special attention, including user studies.

Acknowledgements

We would like to thank our colleagues, participants of the project. These are (in alphabetical order) Malkhaz Abuladze (the compiler of Gothic-Georgian and Anglo-Saxon-Georgian dictionaries included in the Chrestomathy), Maia Davlianidze (technical assistant) and George Kerechashvili (programmer, web developer, software specialist).

References:

Adamska-Salaciak, A. (2010). Examining Equivalence. *International Journal of Lexicography*, 4: 387-409.

Bergenholtz, H. & Gouws, R.H. (2012). What is lexicography? *Lexikos* 22: 31-42.

Gouws, R.H. (2014). Article Structures: Moving from Printed to e-Dictionaries. *Lexikos* 24: 155-177

Margalitadze, T. & Meladze, G. (2016). Importance of the Issue of Partial Equivalence for Bilingual Lexicography and Language Teaching. Margalitadze, Tinatin & Meladze, George (eds.), 2016. *Proceedings of the XVII EURALEX International Congress: Lexicography and Linguistic Diversity*. Tbilisi: Ivane Javakhishvili Tbilisi State University.

<https://euralex.org/publications/importance-of-the-issue-of-partial-equivalence-for-bilingual-lexicography-and-language-teaching/>

