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ANNOTATIONS ABOUT CROATIAN AREAL- DIACHRONIC CORPUS BUILDING

UDK: 811.163.42'32(497.583)
Rukopis primljen za tisak 26. 4. 2023.
Pregledni članak
Survey article

The paper is about the areal-diachronic corpus of the Croatian language. Special attention is given to the data from the corpora of old texts (before the standardisation of Croatian), which would give a complete overview of and insight into the development of the language. The paper also describes the areal-diachronic sub-corpus consisting of works from the Makarska coast.

***Key words:** Croatian corpus linguistics, corpora, Croatian language, Croatian areal-diachronic corpus.*

1. INTRODUCTION

One of the most prominent features of Croatian is, without doubt, its great internal diversity, considering the relatively small geographical area it covers. This diversity is the result of the interplay of several factors:

1. Dialectal composition. Croatian is made up of three macrodialects (which were, arguably, languages of three separate migrational Slavic waves in the early Middle Ages).

2. Political history. From 1102 until the end of World War I what was to become the Croatian nation had been living under foreign rule (although with various levels

of political autonomy), divided into several political entities (the number of which also varied through time). Some regions (such as Istra) were incorporated into the rest of the Croatian ethnic territory only after World War II.

3. Demographic history. In the 15th and 16th centuries, most of the Croatian ethnic territory was affected by the Ottoman military offensives, advance, and eventual conquest, which led to major migrational shifts that had far-reaching consequences for the development of the Croatian language. When the migrational chaos settled down, the area of Čakavian and Kajkavian dialects had become significantly narrowed and the area of Štokavian had significantly expanded.

From the 1830s the Croatian political élite had been enthusiastic about the possibility of the creation of a nation of Southern Slavs – the Yugoslav nation. Among the Southern Slavs (the Bulgarians aside – they had an independent state of their own and did not express the will to unite with the other Southern Slavs), only the Serbs had an independent state (*de jure* from 1835). As a result, they were regarded by the Croats as the prime force to unite the Southern Slaves, which in turn led to an increased inclination towards the Serbian language as a model for creating a new Croatian standard. The influx of elements of the Serbian language (lexicon, morphology, syntax) into Croatian began in 1830s, increased in the 1890s and has lasted to this day. Because of that, the Croatian language changed in the period of 1830 – 2023 probably more than any other European language did.

One way to advance the research of Croatian before the rapid and profound changes it has undergone for almost two centuries now is to build a dialectal and areal corpus that a) covers the period from the earliest evidence up to 1830 – 1890, and b) optimally addresses the problem of the internal diversity of Croatian. The problem of the internal diversity of Croatian could be most conveniently dealt with by dividing the Croatian language territory into areals that reflect the interrelations between its dialectal constitution, political history, and demographic changes. Twentyone areals have been defined.

2. RELATED WORK

There are several on-line Croatian corpora (the best known of these are *The Croatian National Corpus* and *Croatian Linguistic On-line Repository*), however, they are not exclusively diachronically oriented. *Croatian Linguistic On-line Repository* does contain a certain number of works from before 1830, but it is in no way a systematically organized diachronic corpus. The only diachronic corpus of Croatian that is being developed is *Regensburger Diachrones Korpus des Kroatischen (CroDi)*, but it lacks the areal dimension. Moreover, it is syntactically oriented. The

largest extant Croatian corpus is hrWaC, which contains texts crawled from the hr top-level domain, and is therefore purely synchronic.

3. CROATIAN AREAL-DIACHRONIC CORPUS

With an areal-diachronic corpus of the Croatian language, all linguistic data would be accurately allocated according to temporal and areal determinants. The body of preserved Croatian language documents is not infinitely large and, in further perspective, a substantial part of it could be entered into the corpus. Each text would have the following determinants (if known): the author's name, the author's gender, the author's social status, name of the text, date of the original, date of the manuscript, page or verse number (or both). The texts are to be classified a) typologically (e. g. Biblical text, *De imitatione Christi* by T. de Kempis, priest handbook on religion, teachings on religion for common folk, discussions on religion, sermons; each type can be further specified, e. g. sermons on Sunday, holiday, Lent, Advent sermons, etc.), b) based on the rhythmic arrangement of the text (prose or verse), c) based on the script (Latin, Glagolitic, Croatian Cyrillic/Bosnian Cyrillic/bosanica). If a Croatian text is a translation from a foreign language, the original text would be available to the user as the related information. Parts of the Croatian text would be connected to parts of the original text at the sentence level.

The access to the corpus would be two-fold (as usual): the regular user would have the option to search and retrieve the information, and the administrator would have the authority to upload and change the information (with various permissions). General users would be able to post their comments next to the retrieved content, as to help the corpus builders in improving the corpus.

The areal-diachronic corpus is created¹ in the web programme which is composed of three basic parts: A) time axis, B) geographic map, C) search engine (Picture 1):

¹ The corpus was originally programmed by Božidar Štimac and Krešimir Milas under the supervision of professor Mario Essert, Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb.

Geographic distribution of the data, from texts to words or grammatical forms, would reveal mutual strong affinities of certain areals, the cause of which could be traced either upwards (dialectal basis) or downwards (political basis). Political basis implies belonging to the same secular organization (a state) or a religious one (a province – e. g. Bosna Srebrena). Let us take, for illustration, the research possibility of one lexical category, the so-called *verba dicendi*. At a certain time in its history, Croatian had seven core *verba dicendi* (*reći*, *kazati/povidjeti*, **veljeti* (verb without the infinitive form), *diti*, *praviti*, *govoriti*). Today only two remain (*reći* and *kazati* in suppletion and *govoriti*). With the help of an areal-diachronic corpus, it would be possible to reconstruct this in detail:

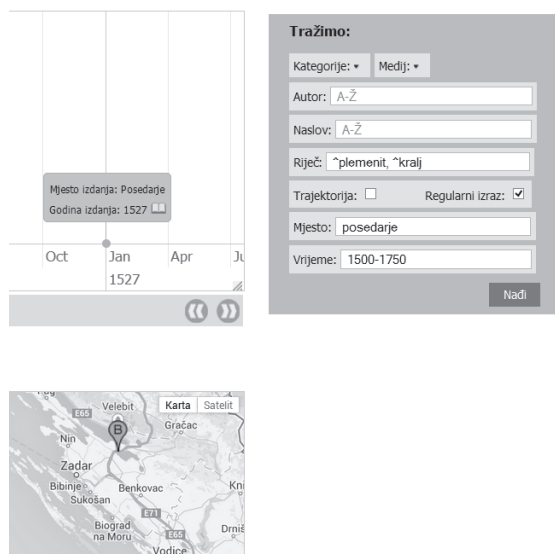
– Areal distribution. E. g. a complementary geographic distribution of the verb *kazati* and *povidjeti* could be described, together with the zone of their overlapping; the relation to the verb *veljeti*, which covered most of the Croatian linguistic space, could be clarified, and also the verb *diti*, characteristic of Čakavian areas; the placement of the verb *praviti* could be determined, which is characteristic of south-western Croatian linguistic space, and so on.

– Historical changes. It would be discernible, for example, how the verbs *praviti* and especially *diti* have been losing their vividness; that in the northern Croatian linguistic space **veljeti* has, to a certain extent, replaced the verb *reći*; that in the north-eastern Croatian linguistic space *kazati* has partly replaced *reći*; that, under the influence of Serbian, *reći* and *kazati* have merged into one suppletive verb, while **veljeti* has been disappearing from use, and so on.

– Semantic nuances. Each of the verbs has its own semantic nuance that would manifest only when it is possible to operate with a large number of occurrences for all seven verbs with a very broad segment of their context.

Eventually, the conditions would be created to answer the question of how it is that Croatian, with seven core *verba dicendi*, which is a lot in the European context, has been reduced to only two of them. Moreover, the changes in the category of *verba dicendi* could be compared with the changes in other semantic categories of Croatian verbs.

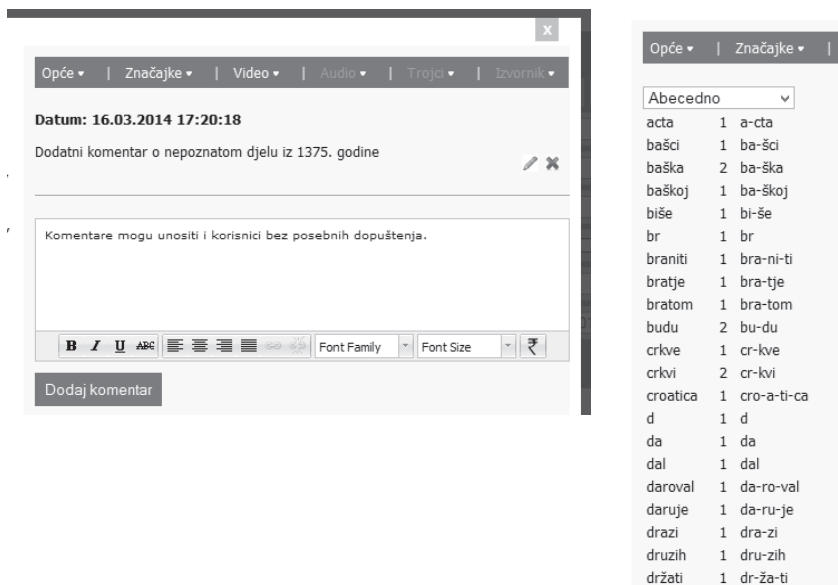
C) Search engine. A search engine has been developed to search the documents by author, title, place, or time, as well as by the word(s) from the document, depending on the chosen category and media in the repository. This type of search engine is designed for all possible combinations of the above research areas.



Picture 2. Example of having defined a) place (Posedarje), b) time span (1500 – 1750), and c) key words (*plemenit* ‘noble’ and *kralj* ‘king’)..

4. BASIC AND ADDITIONAL INFORMATION

The retrieved information, a document in the corpus, opens with a click on the marker on the map (pin) or the marker in the bubble (book) on the time axis. The window with the traced information always has two parts: the main part (on the left) and the additional part (on the right). In the main part, the basic information is displayed (e. g. a text), and on the rightside additional information can be added if needed. The additional information can be user comments, certain components of the main information (e. g. a dictionary with all the words occurring in the text in all their grammatical forms, with the possibility of sorting them by their alphabetical order or by the frequency of their occurrence), audio or video recordings attached to the document, document’s triplestore LLOD – linguistic linked open data and links to the document, saved for example in PDF form or already published elsewhere. Currently, the components of the main text include only the list of words, but in the future the text is going to be visually marked by different criteria, e. g. lemma tagging, syntactic function labelling, sentence structure tagging (bracketing layer), syntactic category annotation, semantic role labelling, sense tagging and similar. A special visual tool, TEIMark, has been designed for these types of operations.

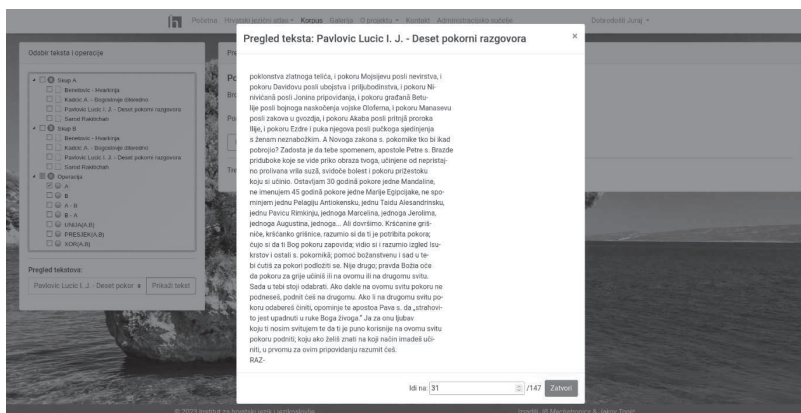


Picture 3. General comments (left) and components (right)

All the materials (main and additional) are placed, replaced or deleted in a simple way; the only thing needed is a WEB-viewer (browser). The uploaded document can be worked on on-line with a tool similar to Word. For the purposes of using Croatian characters with accents, a module is developed for the insertion of any of the UTF-8 symbols.

One of the especially valuable possibilities of the web tool for the tracking of the corpus in space and time are the trajectories of the words – they could also be tracked in these frames, selecting them either in the usual or structured way (via the regular expressions). In that way, the life of the Croatian words through the centuries could be studied: their origin, development, and disappearance.

The black dots on the trajectory refer to the documents (their time coordinate) in which the word appears, and by turning off the option of «trajectory», the user can open the chosen document. It is a powerful tool for monitoring and tracing lexical changes, sometimes very turbulent, which Croatian vocabulary underwent, particularly in the 19th century.



Picture 5. The complete transcribed text is available in the corpus part of the project

In history, the Makarska coast was an enclosed geographical and political unit due to its geographic position. In the North it borders Poljica and in the South the Neretva Valley. This political constellation has existed since ancient times. It correlates to today's dialectological image, in which the dialect of coastal Poljica is Čakavian, the one spoken on Makarska coast is Neo-Štokavian šćakavian, and the Neretva Valley is Neo-Štokavian štakavian.

The idioms of the Makarska area belong to the Neo-Štokavian ikavian. On the south it borders with the Eastern Herzegovinian, i.e. Neo-Štokavian ijekavian, and on the islands just across Makarska's coastal area the local idioms are Southern Čakavian i.e. Čakavian ikavian dialect. On the Pelješac peninsula, the local idioms are separated in a way that the western side of the island is Southern Čakavian while the eastern side is Neo-Štokavian.² The language contact between the Štokavian and Čakavian dialects in the Makarska coast is very interesting. Some characteristics of the Neo-Štokavian dialects of the Makarska coast are found in the South Čakavian dialects, but are not found in the nearby Štokavian dialects (lengthening before sonants, i.e. *sîr*, or consonant cluster simplification, i.e. *kùška*, *màška*). Dialectological data are collected according to the HJA (Croatian linguistic atlas) questionnaire. These data are computer-linked with textual data, which allows the development of a particular language line to be followed over the course of several centuries (Picture 6).

² The most recent work on the local idioms of the Pelješac peninsula is the thesis of M. Tomelić Ćurlin *Jezične posebnosti peljeških govora. Fonologija* (2019).

be broadened by adding the corpus of spoken language (standard language as well as dialects) to complete and frame the obtained picture of the Croatian language.

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Mrežni izvori

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<https://bastina.jezik.hr/gomapri/o_projektu?tip=opci_podatci>

NAPOMENE UZ (IZ)GRADNJU AREALNO-DIJAKRONIJSKOGA KORPUSA HRVATSKOGA JEZIKA

Sažetak

U radu se donosi opis arealno-dijakronijskoga korpusa hrvatskoga jezika. Posebna se pozornost posvećuje podacima iz korpusa starih tekstova nastalih prije standardizacije hrvatskoga jezika, a koji pomažu za cjelovit pregled i uvid u i na razvoj hrvatskoga jezika. Dalje se u radu opisuje iz korpusa izabrani arealno-dijakronijski potkorpus, izgrađen iz pisanih djela i tekstova nastalih na Makarskome primorju.

Ključne riječi: *hrvatska korpusna lingvistika, korpusi, hrvatski jezik, hrvatski arealno-dijakronijski korpus.*

NOTE ALLA COSTRUZIONE DI UN CORPUS AREALE-
DIACRONICO DELLA LINGUA CROATA

Riassunto

Nel lavoro si presenta la descrizione di un corpus areale-diacronico della lingua croata. Si dedica particolare attenzione ai dati dei corpora dei testi antichi risalenti a prima della standardizzazione della lingua croata e che sono d'ausilio per un compendio e una disamina completi dello sviluppo della lingua croata. Nel seguito del lavoro si descrive un sub corpus areale-diacronico, costituito da opere e testi attinenti la Riviera di Makarska.

Parole chiave: *linguistica croata dei corpora, corpora, lingua croata, corpus areale-diacronico croato.*

Podatci o autorima

Dr. sc. Juraj Benić zaposlen je na Fakultetu strojarstva i brodogradnje Sveučilišta u Zagrebu na Katedri za strojarsku automatiku. Njegovo područje rada obuhvaća mrežno programiranje te regulacija mehatroničkih sustava.

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