

Power in Landscape

Geographic and Digital Approaches on Historical Research

herausgegeben von

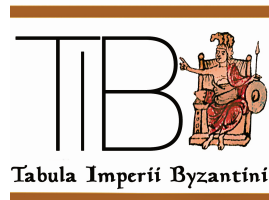
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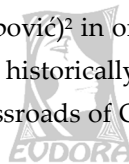
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Illustrating Workflows in Digital Humanities: Byzantine Macedonia in the 13th/14th Centuries and Its “Transformation” from Analogue to Digital¹

Mihailo St. Popović, Rainer Simon (Vienna, Austria)

Introduction

The aim of this article is to illustrate, how source-based data on Byzantine Macedonia, which has been analysed with methods and means of the academic disciplines of Byzantine Studies and Historical Geography, has been processed and visualised with tools deriving from Digital Humanities according to the research aims of the Digital Cluster Project “Digitising Patterns of Power (DPP): Peripheral Mountains in the Medieval World” at the Institute for Medieval Research of the Austrian Academy of Sciences in Vienna. It will be shown, what consecutive steps have been undertaken within the DPP Case Study “The Historical Region of Macedonia (12th–14th Cent.) – The Transformation of a Medieval Landscape” (conducted by Mihailo Popović)² in order to create a digital best practice for the area of research, which is a historically important region in the very heart of the Balkan peninsula at the crossroads of Orthodoxy, Roman Catholicism and Islam.



¹ This article derives from scholarly results achieved within the Digital Cluster Project “Digitising Patterns of Power (DPP): Peripheral Mountains in the Medieval World” [funded by the programme “Digital Humanities: Langzeitprojekte zum kulturellen Erbe” from 2015 to 2018], the FWF – Austrian Science Fund project entitled “Byzantino-Serbian Border Zones in Transition: Migration and Elite Change in pre-Ottoman Macedonia (1282–1355)” [FWF Austrian Science Fund Project P 30384-G28] and the project “The Ethnonym of the Vlachs in the Written Sources and the Toponymy in the Historical Region of Macedonia (11th–16th Cent.)” [Project No. MK 03/2016, Centre for International Cooperation & Mobility (ICM) of the Austrian Agency for International Cooperation in Education and Research (OeAD-GmbH)] at the Institute for Medieval Research of the Austrian Academy of Sciences in Vienna (Austria). We, the authors, are indebted to the Austrian Academy of Sciences, the aforesaid Institute, the FWF – Austrian Science Fund as well as to the Ministry of Education, Science and Research of the Republic of Austria for their support.

² URL: <<https://dpp.oeaw.ac.at/index.php?seite=CaseStudies&submenu=makedonien>>, 21.01.2019.

The integral basis, regarding the sources as well as the secondary literature, for the present DPP Case Study has been provided by the ongoing scholarly research of Mihailo Popović on the volume *Tabula Imperii Byzantini* (TIB) 16 “Macedonia, Northern Part”, which is part of the Long-Term Project *Tabula Imperii Byzantini* (TIB) of the Austrian Academy of Sciences.³ TIB 16 covers the Byzantine province of *Macedonia Secunda* and parts of the provinces *Macedonia Prima*, *Dardania*, *Epirus Nova*, *Praevalitana* and *Dacia Mediterranea*. Since Byzantine Macedonia is today divided between Greece, the Republic of North Macedonia and Bulgaria, the volume “Macedonia, Northern Part” comprises the entire territory of the Republic of North Macedonia and two districts of Bulgaria (namely Kjustendil and Blagoevgrad). Thus, it bridges the gap between the volumes TIB 6 “Thrace” and TIB 11 “Macedonia, Southern Part” (Peter Soustal).⁴

The main part of each volume of the TIB comprises a catalogue of the Byzantine names of towns, settlements, fortresses, churches, monasteries, fields, mountains, rivers and lakes in alphabetical order, which is extracted for each region/province of the Byzantine Empire from four categories of sources. These categories are the written sources from the 4th century AD to the 15th century AD (e.g. charters, historiography, inscriptions etc.), the archaeological evidence (excavation reports, monuments), the toponyms and the physical state of landscapes.⁵

Research on the volume TIB 16 is based on written sources (mainly in Greek, Latin, Old Slavonic and Ottoman), monuments, archaeological reports and a vast variety of toponyms as well as extensive secondary literature, mostly in the South Slavic languages. Surveys in the area of research have been regularly conducted by Mihailo Popović (i.e. in the years 2007, 2008, 2010, 2016, 2017), during which monuments, archaeological remnants (e.g. roads) and toponyms were

³ URL: <<https://tib.oeaw.ac.at/index.php?seite=status&submenu=tib16>>, 21.01.2019.

⁴ Cf. on the definition of Byzantine Macedonia: Johannes Koder, *Macedonians and Macedonia in Byzantine Spatial Thinking*, in: *Byzantine Macedonia. Identity, Image and History. Papers from the Melbourne Conference July 1995*, ed. John Burke/Roger Scott (Byzantina Australiensia 13, Melbourne 2000) 12–28.

⁵ Mihailo Popović, *Mapping Byzantium – The Project “Macedonia, Northern Part” in the Series Tabula Imperii Byzantini (TIB) of the Austrian Academy of Sciences*, in: *Mapping Different Geographies*, ed. Karel Kriz/William Cartwright/Lorenz Hurni (Lecture Notes in Geoinformation and Cartography, Berlin/Heidelberg 2010) 219–234, at 222.

documented with GPS-waypoints and GPS-tracks.⁶ These layers of GPS data are integrated into the present Case Study and the *DPP OpenAtlas Database*. The results, which have been achieved by *TIB* 16, are systematically enriched and expanded by the application of new methods in Historical Geography, such as settlement theories (e.g. the modified Central Place Theory)⁷ and by applications deriving from GIScience (e.g. Historical Geographic Information Systems/HGIS) as well as Digital Humanities. All of these aspects have been elaborated and tested by the author (partly with co-authors) before⁸ – in preparation of *DPP* as well as of the *Digital Tabula Imperii Byzantini (DigTIB)*⁹ – and after as Principal Investigator (PI) of *DPP*.

⁶ See on the history and methodology of the Long-Term Project *Tabula Imperii Byzantini (TIB)* of the Austrian Academy of Sciences: Johannes Koder, Überlegungen zu Konzept und Methode der „Tabula Imperii Byzantini“, in: Österreichische Osthefte 20 (1978) 254–262; Id., Perspektiven der Tabula Imperii Byzantini. Zu Planung, Inhalt und Methode, in: Geographia antiqua 5 (1996) 75–86; Andreas Külzer, Möglichkeiten zur Rekonstruktion historischer Landschaften: Die Historische Geographie, in: Fragmente. Der Umgang mit lückenhafter Quellenüberlieferung in der Mittelalterforschung, ed. Christian Gastgeber/Christine Glassner/Kornelia Holzner-Tobisch/Renate Spreitzer (Wien 2010) 173–184; Mihailo St. Popović, The Project *Tabula Imperii Byzantini (TIB)* of the Austrian Academy of Sciences, in: Ostkirchliche Studien 58/2 (2009) 267–272; Popović, Mapping Byzantium 219–234.

⁷ Cf. the overview on this method in: Johannes Koder, Land Use and Settlement: Theoretical Approaches, in: General Issues in the Study of Medieval Logistics: Sources, Problems and Methodologies, ed. John F. Haldon (History of Warfare 36, Leiden/Boston 2006) 159–183.

⁸ Mihailo St. Popović, Are the Historical Geography of the Byzantine Empire and Digital Humanities a Contradiction Per Se?, in: Bulgaria Mediaevalis 3 (2012) 255–269; Mihailo St. Popović/Markus Breier, Tracing Byzantine Routes – Medieval Road Networks in the Historical Region of Macedonia and Their Reconstruction by Least-Cost Paths, in: Proceedings of the “16th International Conference on Cultural Heritage and New Technologies” (Wien 2011) 464–475; Mihailo St. Popović/Juulson J. Jubanski, On the Function of “Least-Cost Path” Calculations within the Project *Tabula Imperii Byzantini (TIB)* of the Austrian Academy of Sciences: a Case Study on the Route Melnik–Zlatolist (Bulgaria), in: Anzeiger der philosophisch-historischen Klasse der Österreichischen Akademie der Wissenschaften, 145. Jahrgang/2. Halbband (2010) 55–87; Mihailo St. Popović/Bogdan Šandric, Transfer of (Historical) Geographic Knowledge Then and Now. From Static Data to User Oriented Visualization, in: e-Perimetron. International Web Journal on Sciences and Technologies affined to History of Cartography and Maps 7/2 (2012) 50–61; cf. especially the monograph: Mihailo St. Popović, Historische Geographie und Digital Humanities. Eine Fallstudie zum spätbyzantinischen und osmanischen Makedonien (Peleus, Studien zur Archäologie und Geschichte Griechenlands und Zyperns 61, Mainz/Ruhpolding 2014).

⁹ URL: <<https://tib.oeaw.ac.at/index.php?seite=digtib>>, 01.02.2019.

Therefore, the starting point for the present Case Study within DPP (see above) has been the method of the project *TIB* in general and the data on *TIB* 16 in detail. In the following we will systematically lead the readers in seven steps from an analogue starting point in the aforesaid Case Study to its digital transformation and visualisation. This approach will provide a transparent outline of our scholarly research and workflow within DPP in the past four years (i.e. from 2015 to 2018).

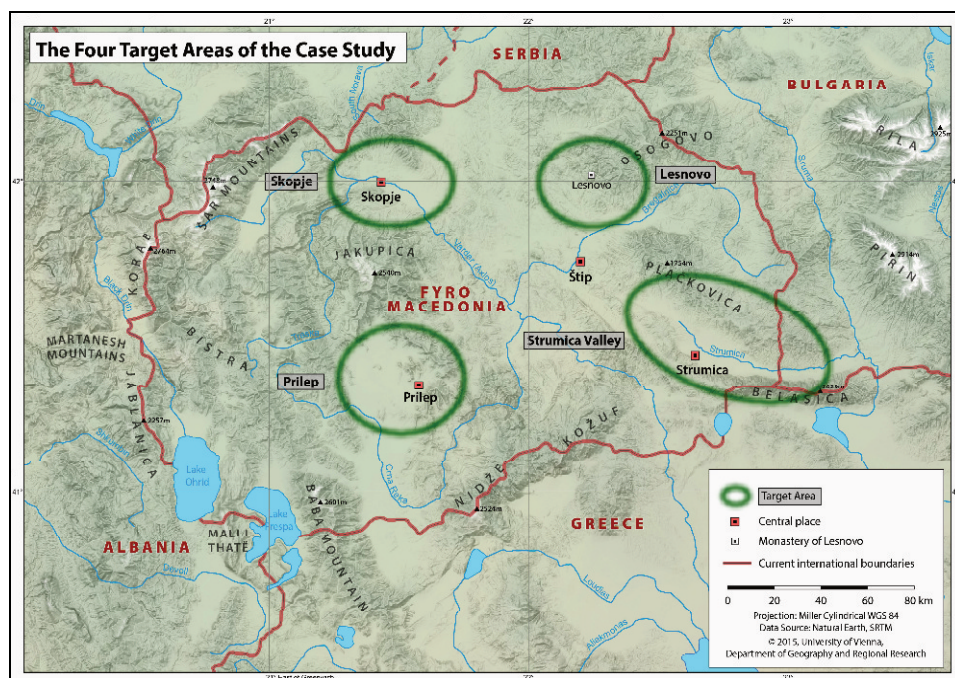


Fig. 1 The Four Target Areas of the Case Study

Step 1

At the beginning we had to define time and space within the Case Study. It was of the utmost importance to select a period in the history of Byzantine Macedonia, which would provide a sufficient amount of written source evidence to be read, analysed and embedded into the envisaged *DPP OpenAtlas Database*. With regard to the area of research we decided to focus on the territory of *TIB* 16 (see above), and again to highlight so-called target areas. This was deemed necessary, because it would have been impossible to cover the entire territory of *TIB*

16 digitally in the four years of DPP's duration. That is why our Case Study decided to draw primarily upon published medieval Serbian, Bulgarian and Byzantine charters from the 13th and 14th centuries and to focus on four target areas, which are as follows: the city of Skopje and its environs, the Monastery of Lesnovo and its landed property, the town of Prilep and its surroundings and the valley of the river Strumica (Fig. 1). This definition has been accomplished before the submission of the project DPP, based on a first evaluation of the corpus of relevant medieval charters on the area of research on the one hand and on the data provided by TIB 16 on the other hand. Moreover, this evaluation of sources by Mihailo Popović and the student assistant David Schmid resulted in a catalogue of catchwords of Serbian (and partly Byzantine and Bulgarian) administrative, settlement, agricultural and economic terminology concerning the area of research.¹⁰ The respective catalogue relates to the five entities in our *DPP OpenAtlas Database* (i.e. the backend of the project DPP; see below), which are as follows: *Source, Event, Actor, Place* and *Reference*.

Step 2

In accordance to the aforesaid four target areas (Skopje, Lesnovo, Prilep and Strumica) four clusters of medieval charters have been assembled, read, excerpted and structured based on the catalogue of catchwords and the five entities in the database. These clusters of charters are in detail:

The Charter Cluster of Skopje

The cluster on the target area of Skopje consists of several sub-groups of charters. The first sub-group is on the Church of the Presentation of the Theotokos in the village of Arhiljevica. Three charters are relevant in this context. The first is a *chrysobull* of the Serbian Emperor Stefan Uroš IV Dušan (reigned 1331–1355), with which he confirmed the foundation of the respective church by *sebastokrator* Dejan and its landed property. The original charter has not come upon us. Its

¹⁰ This catalogue of catchwords is published in: Mihailo St. Popović/Vratislav Zervan, Signs and Maps of Power in Medieval Europe: A Case Study on Byzantine Macedonia (13th/14th Centuries), in: MEMO – Medieval and Early Modern Material Culture Online: MEMO #2 – Digital Humanities & Materielle Kultur [doi: 10.25536/20180206; URL: <<http://memo.imareal.sbg.ac.at/wsarticle/memo/2018-popovic-signs-and-maps-of-power/>>, 22.01.2019].

content is preserved only in two later transcripts (dated to the years 1349 and 1354/55).¹¹ The third charter was issued in 1378/79 by the Serbian Empress Jevdokija and her son Konstantin Dragaš, through which they donated the Church of the Presentation of the Theotokos in the village of Arhiljevica together with its possessions to the Monastery of Chilandar on Mount Athos.¹²

The second sub-group of this cluster comprises the region of Ovče Polje, which is to be found to the South-East of the target area of Skopje. In 1352/53 the Serbian Emperor Stefan Uroš IV Dušan granted the Church of Saint Nicholas on the river Pčinja beneath the fortress of Kožle with a *chrysobull* to the Metropolitan Jakob of Serres. After his death the rights should devolve to the Monastery of the Holy Archangels Michael and Gabriel near Prizren.¹³

The third sub-group is the so-called “Svetoarhandjelovska hrisovulja” in favour of the Monastery of the Holy Archangels Michael and Gabriel near Prizren, which was issued by the Emperor Stefan Dušan in or soon after 1347/48.¹⁴

The most abundant (fourth) sub-group of this cluster are the three charters for the Monastery of St. George-Gorg near Skopje. In the first charter, which is dated to the period from 1258 to 1277, the Bulgarian Tsar Constantine I Asen (reigned 1257–1277) confirmed previous donations of properties and population to the Monastery of St. George-Gorg near Skopje and added his own.¹⁵ The Serbian King Stefan Uroš II Milutin (reigned 1282–1321) issued the second charter after the refurbishment of the Monastery of St. George-Gorg in the year 1300. He confirmed the donations given to the monastery by former Byzantine, Bulgarian

¹¹ Vladimir Aleksić, Dva prepisa potvrdne hrisovulje Stefana Dušana povodom osnivanja Manastira Vavedenje Presvete Bogorodice, zadužbine sevastokratora Dejana, u selu Arhiljevica kod Preševa, in: Stari srpski arhiv 12 (2013) 31–65; Žarko Vujošević, Arhiljevička hrisovulja cara Stefana Dušana, in: Initial. A Review of Medieval Studies 1 (2013) 241–254.

¹² Pavle Dragičević, Povelja „Carice“ Jevdokije i njenog sina Konstantina o darivanju Hilandar u njihove baštinske crkve u Arhiljevici, in: Stari srpski arhiv 10 (2011) 87–102.

¹³ Gramota na Car Dušan za crkvata Sv. Nikola kaj Kožle od 1353 godina (ed. Lidija Slaveva, Spomenici za srednovjekovna i ponovata istorija na Makedonija 3, Skopje 1980) 411–423.

¹⁴ Siniša Mišić/Tatjana Subotin-Golubović, Svetoarhandjelovska hrisovulja (Izvori za srpsku istoriju 3, Beograd 2003) 85–114.

¹⁵ Zbornik srednjovekovnih ćirilčkih povelja i pisama Srbije, Bosne i Dubrovnika. Knjiga I: 1186–1321 (ed. Vladimir Mošin/Sima Ćirković/Dušan Sindik, Izvori za srpsku istoriju knj. 9, Ćirilčki izvori knj. 1, Beograd 2011) 254–258. Cf. on this charter URL: <http://monasterium.net/mom/MedDocBulEmp/1277-xx-xx_taq_Constantine_Tich/charter>, 28.01.2019.

and Serbian rulers. Finally, King Milutin also granted new privileges, landed property and population to the respective monastery.¹⁶ In 1376/77 the Serbian nobleman Vuk Branković donated the Monastery of St. George-Gorg to the Monastery of Chilandar on Mount Athos at the request of his brother Gerasim, who was monk in the latter.¹⁷

The fifth sub-group of this cluster are two charters for the Monastery of Saint Nikita near Skopje. In ca. 1299/1300 (or 1308?) the Byzantine Co-Emperor Michael IX Palaiologos (reigned 1294/95–1320) issued – at the instigation of the Serbian King Stefan Uroš II Milutin – a charter for the Tower of Hrusija of the Monastery of Chilandar, through which the possessions of the Monastery of Saint Nikita near Skopje were confirmed.¹⁸ In May 1308 (?) the Byzantine Emperor Andronikos II Palaiologos (reigned 1282–1328) confirmed – again at the instigation of the Serbian King Stefan Uroš II Milutin – the possessions of the Monastery of Saint Nikita for the Tower of Hrusija.¹⁹ This charter is only preserved in a Serbian translation. It seems plausible that Andronikos II had also issued a Greek charter in the years 1299/1300, because the aforesaid parallel Byzantine charter by Co-Emperor Michael IX Palaiologos is preserved, which was issued most probably in the years 1299/1300 and in which plenty of the mentioned places were also donated.

Finally, the last (sixth) sub-group is comprised by three charters concerning the Chapel of Sveta Petka in the village of T'morane. The Serbian King Stefan Uroš II Milutin donated the chapel with its possessions to the Monastery of Chilandar on Mount Athos. According to Srdjan Pirivatrić, King Milutin conquered the town of Skopje and its surroundings from the Byzantine Empire in the year 1282, but lost it to the Byzantines at some point between 1282 and 1298 and certainly reconquered it before 1298/99. That is why he most probably issued his charter concerning the Chapel of Sveta Petka after his reconquest of

¹⁶ Zbornik srednjovekovnih ćirilčkih povelja i pisama 316–329.

¹⁷ Stanoje Bojanin, Povelja Vuka Brankovića o darovanju Skopskog manastira Svetog Georgija manastiru Hilandaru, in: Stari srpski arhiv 8 (2009) 119–128, at 121.

¹⁸ Gramota na car Mihail IX Paleolog za manastir Sv. Nikita kaj Skopje od 1299 (?), po april (ed. Lidiya Slaveva/Vladimir Mošin, Spomenici za srednovekovnata i ponovata istorija na Makedonija 1, Skopje 1975) 286–292, at 288–292.

¹⁹ Zbornik srednjovekovnih ćirilčkih povelja i pisama 406 f.

Skopje, i.e. in ca. 1299/1300.²⁰ The second charter, which is mentioning the afore-said chapel, was issued by Stefan Uroš II Milutin for the Tower of Hrusija of the Monastery of Chilandar. The original of this *chrysobull* is not preserved. The text of the document is known from an interpolated charter, which was issued between the end of the year 1313 and 26 July 1316, and from a forged charter, which can be dated on the grounds of the used water mark to the period from 1334 to 1336.²¹ The Chapel of Sveta Petka is again mentioned in the so-called “Opšta hrisovulja” (“General Charter”) by the Serbian Emperor Stefan Uroš IV Dušan to the Monastery of Chilandar, through which he confirmed all previous donations and records of the land-inventory of the monastery. Although the charter bears the year 1348 as date, it is with the utmost probability not an original. Lidija Slaveva considers the charter to be a copy, which was written after the year 1365.²²

The Charter Cluster of Lesnovo

The cluster of sources concerning the target area of Lesnovo consists of three pieces of evidence. The first is the foundation charter of the Monastery of Lesnovo, which is a donation inscription in three parts on stone, two parts of which are in Old Serbian and one part in Greek language. The Old Serbian inscription starts on a marble architrave above the Western entrance of the *katholikon* (i.e. on the Eastern wall of the *narthex*) and continues outside above the Southern entrance to the *naos*. This inscription is dated to the year 1341 and calls the *katholikon* a “Church of the High Commander of the Heavenly Armies the Archistratigos Michael” (храмъ великаго воѣводе вѣшнихъ силъ Архистратига Михаила). The donors were the Great Voivode (*Veliki Vojvoda*) Jovan Oliver, his wife Anna Mara (Ana Marija) and his son Kraiko (Krajko) during the reign of the Serbian King Stefan Uroš IV Dušan.²³

²⁰ Charter edited in: Zbornik srednjovekovnih ćirilčkih povelja i pisama 332f. Cf. on the dating: Srdjan Pirivatrić, Hronologija prvih vladarskih akata kralja Milutina izdatih posle osvajanja Skoplja, in: ΠΕΡΙΒΟΛΟΣ – Mélanges offerts à Mirjana Živojinović, Tome I, ed. Dejan Dželebdžić/Bojan Miljković (Beograd 2015) 205–213.

²¹ Zbornik srednjovekovnih ćirilčkih povelja i pisama 437–445.

²² Siniša Mišić/Marija Koprivica, Opšta hrisovulja cara Stefana Dušana Hilandaru, in: Stari srpski arhiv 14 (2015) 65–106.

²³ Gordana Tomović, Morfologija ćirilčkih natpisa na Balkanu (Beograd 1974) 57 (No. 37).

The second source is a charter, which was issued by the Emperor Stefan Dušan in the year 1347. Therein, he founded the Diocese of Zletovo and donated the Monastery of Lesnovo to its territory.²⁴ Finally, the Serbian nobleman Konstantin Dragaš donated the Monastery of Lesnovo to the Monastery of Chilandar on Mount Athos on 15 August 1381.²⁵

The Charter Cluster of Prilep

The town of Prilep and its surroundings comprise the third target area, on which three charters of King Stefan Uroš IV Dušan are preserved (1334/35; 1343/44; 1344/45).²⁶ After the conquest of Prilep King Dušan issued an Old Serbian charter in 1334/35 for the Monastery of Treskavec to the North of the town. He donated villages, settlements, abandoned lands, summer and winter pastures, watermills, metochia and churches and a fair in the town to the monastery. Božidar Ferjančić argued that the second charter (Treskavac 2) for the Monastery of Treskavec is a forgery, while the first and third (Treskavac 1 and 3) are authentic.²⁷ Djordje Bubalo expressed the opinion that the second charter (Treskavac 2) is an unofficial document based on the first and the third charter (Treskavac 1 and 3).²⁸

The Charter Cluster of Strumica

Finally, medieval charters on the valley of the river Strumica were assembled, read and analysed in order to research the fourth target area. At this point we would like to highlight one charter as vivid example. The Serbian Emperor Stefan Uroš V (reigned 1355–1371) confirmed in a *chrysobull* in May 1356, together

²⁴ Siniša Mišić, Hrisovulja cara Stefana Dušana o osnivanju Zletovske episkopije, in: Stari srpski arhiv 13 (2014) 181–206; also cf. Archimandrit Leonid, Hrisovulja Cara Stefana, data u Skoplju 1347 godine, iz crkvenog i državnog sabora, koji bijaše skupljen u to doba, a kojom se osniva episkopska stolica u manastiru Ljesnovskom, in: Glasnik Srpskog Učenog Društva 10 (27) (1870) 287–296.

²⁵ Žarko Vujošević, Povelja Konstantina Dragaša Hilandaru o manastiru Lesnovu, in: Realia Byzantino-Balcanica. Studia in honorem LX annorum Professoris Christi Matanov (Sofija 2014) 453–475.

²⁶ Gramotite na Stefan Dušan za manastir Treskavec (ed. Lidija Slaveva/Vladimir Mošin, Spomenici za srednovjekovna i ponovata istorija na Makedonija 4, Skopje/Prilep 1981) 55–185, at 77–92, 113–126, 143–153.

²⁷ Božidar Ferjančić, O poveljama kralja Stefana Dušana manastiru Treskavcu kod Prilepa, in: Zbornik Radova Vizantološkog Instituta 7 (1961) 161–168.

²⁸ Djordje Bubalo, Za novo, kritičko izdanje treskavačkih hrisovulja kralja Dušana, in: Stari srpski arhiv 7 (2008) 207–229.

with his mother the Empress Jelena-Jelisaveta, the possession of the Church of Saint Nicholas in the town of Melnik with its landed property to the Metropolitan Kiril.²⁹

In total 43 Serbian, Bulgarian and Byzantine charters from the 13th and 14th centuries were read and analysed according to the aforesaid catalogue of catchwords. During this work package within our Case Study a special emphasis was put on the following catchwords, which are related to the “Signs” and “Patterns of Power” (see below): *gradŭ* – *градъ* (town, upper town, fortress); *selo* – *село* (village); *selište* – *селиште, селище* (settlement site *or* abandoned village); *exalimo* – *ежалимо* (escheated property); *trŭgŭ* – *тръгъ* (marketplace, farmer’s market); *panagjurŭ* – *панагюръ* (fair); *manastyri* – *манастирь* (monastery); *crĭkva* – *цръква* (church); *vinogradŭ* – *виноградъ* (vineyard); *vodĕnica* – *водѣница* (water mill).

They were extracted systematically, interpreted in the respective context and embedded as well as linked by Mihailo Popović and David Schmid in the *DPP OpenAtlas Database*.

Step 3

As “space” and its relation to power are an essential part of our research, the spatial representation of the various entities, which are found in our sources is a very important topic in DPP and closely related to the conceptual framework and data model. Where it is possible, the precise location of physical things is recorded in the *DPP OpenAtlas Database*. Technically speaking, this is achieved by using point, line and polygon geometries provided by PostgreSQL’s GIS extension PostGIS. In many cases the medieval written sources are not very accurate, and often it is not possible to determine exactly the spatial position or extent respectively shape of the entity mentioned. This geographical fuzziness and general uncertainty is a remarkable challenge in Digital Humanities and in DPP. However, in order to distinguish various spatial qualities, DPP has developed a

²⁹ Rade Mihaljčić, Hrisovulja cara Uroša melničkom mitropolitu Kirilu, in: *Stari srpski arhiv* 2 (2003) 85–97.

framework for the spatial position of physical things and their representation in the database. In our sources there are mainly three classes of these entities:

- a) Physical things like buildings, settlements, regions, areas etc., which have or originally had a position in space and a certain extent.
- b) Roads/routes/ivers, which have or originally had a position in space and a certain extent.
- c) Spots with no spatial extent, which have only point coordinates.³⁰

Apart from the described spatial model we have applied the “modified Central Place Theory” to the data of our Case Study. The regressive method of the “Central Place Theory” was initially defined by Walter Christaller and modified by Johannes Koder for the Byzantine Empire, i.e. for the needs of Byzantine Studies. Walter Christaller described a hierarchy of three levels of settlements, which he embedded in a hexagonal grid. The highest level consists of the “Central Market Town (CMT)”, followed by the “Intermediate Market Town (IMT)”, and the lowest level is called “Standard Market Town (SMT)”.³¹

Johannes Koder has shown on various examples that a two-level-system has to be applied for the Byzantine Empire (and therefore also to Byzantine Macedonia). According to his calculations the distance between two administrative centres (CMT+IMT) could be 39 to 46km, whereas the distance between an administrative centre and a “Standard Market Town” amounted to 13 to 15km.³²

Unfortunately, we cannot trace the exact delimitations of villages in Byzantine Macedonia, because the aforesaid charters do not contain instructive data on this issue. Nevertheless, Vassiliki Kravari has succeeded in calculating the average extent of a village and its surrounding area in Byzantine Macedonia for

³⁰ Cf. on this issue in detail: Stefan Eichert/Bernhard Koschicek/Mihailo St. Popović, *Digitising Patterns of Power (DPP): A Digital Approach towards Recording, Managing, Analysing and Presenting Archeological and Historical Information based on Case Studies from Eurasian Mountainous Regions*, in: *Acta Archaeologica Carpathica* 51 (2016) 257–283, at 273–277.

³¹ Walter Christaller, *Die zentralen Orte in Süddeutschland. Eine ökonomisch-geographische Untersuchung über die Gesetzmäßigkeit der Verbreitung und Entwicklung der Siedlungen mit städtischen Funktionen* (Jena 1933, reprinted Darmstadt 1968); Id., *Das Grundgerüst der räumlichen Ordnung in Europa. Die Systeme der europäischen zentralen Orte* (Frankfurter Geographische Hefte 24/1, Frankfurt/M. 1950); Id., *How I Discovered the Theory of Central Places: A Report About the Origin of Central Places*, in: *Man, Space and Environment*, ed. Paul Ward English/Robert C. Mayfield (New York 1972) 601–610.

the 13th and 14th centuries, which amounted to approximately 15km².³³ If we apply the formula $A=r^2\pi$, we may deduce that villages in Byzantine Macedonia were surrounded by a radius of ca. 2km of landed property. Of course, village boundaries were neither hexagonal nor circular, i.e. mathematically ideal, at all, because they depended upon the local geographical and geological conditions as well as anthropogenic factors.³⁴

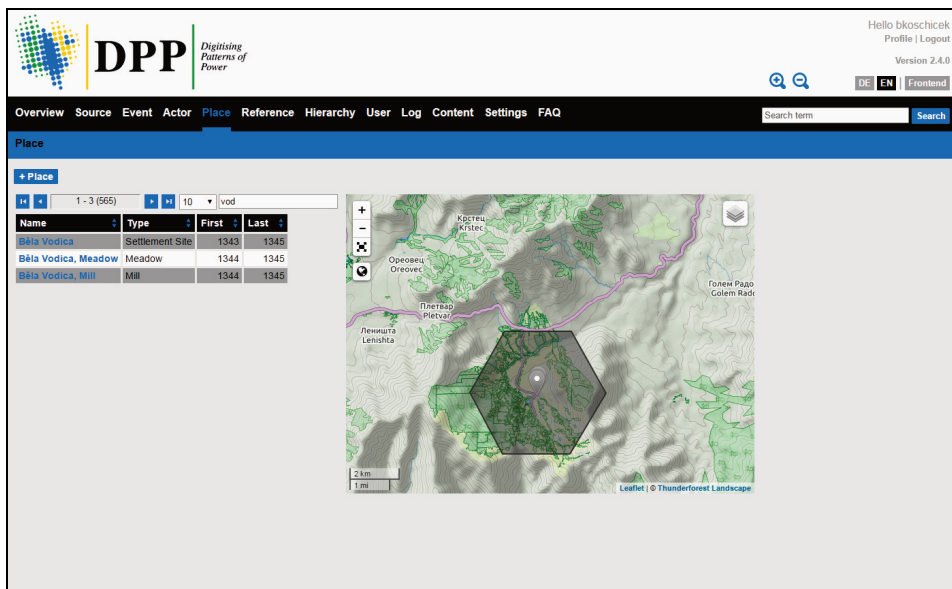


Fig. 2: An Example of a Polygon of Hexagonal Shape in the DPP OpenAtlas Database

For the time being, we have drawn polygons of hexagonal shape around the localised villages within the entity *Place* in the *DPP OpenAtlas Database*, by taking into account distances of 2km according to the aforesaid radius (Fig. 2). This is of course an approximation, because at the moment we do not have the possibility to draw circular (or other) autoforms in our backend. In the near future we will undertake together with Andrei Nacu (Romanian Academy of Sciences, Institute

³² Koder, Land Use and Settlement 159–183.

³³ Vassiliki Kravari, L'habitat rural en Macédoine occidentale (XIIIe–XIVe siècles), in: Byzanz als Raum. Zu Methoden und Inhalten der historischen Geographie des östlichen Mittelmeerraumes, ed. Klaus Belke/Friedrich Hild/Johannes Koder/Peter Soustal (Veröffentlichungen der Kommission für die Tabula Imperii Byzantini 7, Wien 2000) 83–94.

³⁴ Popović, Historische Geographie und Digital Humanities 56 f.

for Social Sciences and Humanities, Sibiu) a cost surface analysis for all the localised villages in order to achieve village boundaries, which are modelled based on the actual landscape and its slope and therefore are closer to reality.

Step 4

DPP states in its project outline that: “A focus will be put on mountainous areas and the interaction of human development of power and natural environment.”³⁵ This approach is mirrored in our aforesaid catalogue of catchwords, which, amongst others, indicates the following related source-based terms: *plarina* – планина (summer pasture); *zimovište* – зимовиште (winter pasture); *katunŭ* – катонъ (a temporary settlement of nomads, specifically Vlachs); respective individuals and / or groups involved (i.e. *Vlachŭ*, *Vlasi* – Влахъ, Власи).

In order to enhance this work package within our Case Study “The Historical Region of Macedonia (12th–14th Cent.) – The Transformation of a Medieval Landscape”, Mihailo Popović and the Ss. Cyril and Methodius University of Skopje (Faculty of Philosophy, Institute for History; Prof. Dr. Toni Filiposki) started a joint scholarly project entitled “The Ethnonym of the Vlachs in the Written Sources and the Toponymy in the Historical Region of Macedonia (11th–16th Cent.)” in 2016, which focused on the interplay between the resident population and the nomads (i.e. the Vlachs) in the area of research from the 11th to the 16th centuries.³⁶ This project (Project No. MK 03/2016) was funded by the Centre for International Cooperation & Mobility (ICM) of the Austrian Agency for International

³⁵ URL: <<https://dpp.oeaw.ac.at/index.php?seite=CaseStudies>>, 30.01.2019.

³⁶ Cf. the following publications on the Vlachs with extensive bibliographies: Mihailo St. Popović, Spätbyzantinische Siedlungen und wlachische Transhumanz in den Flusstälern der Strumica und Kriva Lakavica, in: Südosteuropäische Romania: Siedlungs-/Migrationsgeschichte und Sprachtypologie. Romanistisches Kolloquium XXV (Tübinger Beiträge zur Linguistik 532, Tübingen 2012) 227–240; Id., Das Kloster Hilandar und seine Weidewirtschaft in der historischen Landschaft Mazedonien im 14. Jahrhundert, in: ΠΕΡΙΒΟΛΟΣ – Mélanges offerts à Mirjana Živojinović, Tome I, ed. Dejan Dželebdžić/Bojan Miljković (Beograd 2015) 215–225; Id., Vlachen in der historischen Landschaft Mazedonien im Spätmittelalter und in der Frühen Neuzeit, in: Walchen, Romani und Latini. Variationen einer nachrömischen Gruppenbezeichnung zwischen Britannien und dem Balkan (Forschungen zur Geschichte des Mittelalters 21, Wien 2017) 183–196.

Cooperation in Education and Research (OeAD-GmbH) for two years (1 July 2016–30 June 2018) and formed an additional, new case study within DPP.³⁷

The project has explored manifold written sources related to the Vlachs in Byzantine Macedonia based mainly on medieval Serbian and Byzantine charters as well as Early Modern Ottoman Tax Registers. Relevant toponyms were identified and localised based on Austro-Hungarian (on a scale of 1:200,000) and Yugoslav (on a scale of 1:100,000) maps from the 19th and 20th centuries. Moreover, the Austrian side has built upon the manifold data provided by TIB 16 (see above).³⁸

In addition to identifying and evaluating the aforesaid written sources, journeys to the respective country of the cooperation partner were undertaken in order to bring together the project partners, to strengthen their ties and to enable a thorough discussion of the relevant medieval sources on the Vlachs. The aim was to reach a common level of interpretation and to prepare the respective data for inclusion into the *DPP OpenAtlas Database*.

From the Austrian point of view two important work packages have been successfully accomplished within the framework of the joint scholarly project in the summer of 2017 and 2018. From 17 July until 31 July 2017 Mihailo Popović as the Austrian project leader and Jelena Nikić as scholarly co-worker travelled to Skopje in order to conduct research in the State Archive of the Republic of Macedonia and in the library of the Macedonian Academy of Sciences and Arts concerning the joint research question. Moreover, two surveys *in situ* were accomplished together with Toni Filiposki and Boban Petrovski, namely in the canyon of Matka to the South-West of Skopje and in the Ohrid-Prespa region, where the relevant local toponymy and respective monuments were localised and documented. From 4 June until 10 June 2018 Mihailo Popović and David Schmid as scholarly co-worker travelled to Skopje to continue the aforesaid research based on archival material as well as the published bibliography in the Macedonian archives and libraries. In addition, two surveys were conducted *in situ* in the valley of the river Vardar and the region of Konjuh in North-Eastern Macedonia together with Toni Filiposki and an external expert, the Archaeo-

³⁷ URL: <<https://dpp.oeaw.ac.at/index.php?seite=CaseStudies&submenu=skopje>>, 30.01.2019.

³⁸ URL: <<https://tib.oeaw.ac.at/index.php?seite=status&submenu=tib16>>, 30.01.2019.

logist Prof. Dr. Viktor Lilčikj from the “Ss. Cyril and Methodius” University of Skopje.

Jelena Nikić and David Schmid have input the acquired data and the localised toponymy into the *DPP OpenAtlas Database*. These data sets have also been extracted into a Demo-Version, which may be accessed freely online.³⁹ The input of the data and its visualisation (i.e. digital mapping) has yielded new results and has helped the scholars involved in the project to discern the patterns of distribution of the Vlachs in Byzantine Macedonia through time and space, on which further research has been conducted and published.⁴⁰

Moreover, it has to be stressed that the project “The Ethnonym of the Vlachs in the Written Sources and the Toponymy in the Historical Region of Macedonia (11th–16th Cent.)” has been implemented as the Case Study “Ethnonym of the Vlachs” into the map-based online application (*DPP Mapviewer*, i.e. the frontend of DPP), which will be put online in the summer of 2019 and which will enable the users to query freely the data of this sub-project.

Step 5

Since DPP “focuses on the analysis of the depiction of space in medieval written sources, of the interaction between built and natural environment, of appropriation of space and the emergence of new political, religious and economic structures of power”⁴¹, the embedded data of our Case Study has been and will be used for in-depth studies on manifest “Signs of Power”⁴², like venues of medieval Serbian State Councils or places of imperial presence (i.e. for example of ambulant kingship) in the area of research.

³⁹ URL: <<https://demo-dev.openatlas.eu/>>, 30.01.2019.

⁴⁰ Cf. the article by Toni Filiposki and Boban Petrovski entitled “Vlachs from Macedonia in the Medieval Written Sources: Case Study on Polog” in this volume. See also: Mihailo St. Popović/Jelena Nikić, *Byzantinistik, historische Geographie und Ethnographie in dem Königreich Jugoslawien an dem Beispiel des Professors Milenko S. Filipović und der Philosophischen Fakultät in Skopje (1925–1940)*, in: *Zbornik Radova Vizantološkog Instituta* 55 (2018) 305–324.

⁴¹ URL: <<https://dpp.oeaw.ac.at/>>, 30.01.2019.

⁴² Cf. on the meaning and definition of “Signs of Power” in DPP: Mihailo St. Popović/Veronika Polloczek, *Digitising Patterns of Power (DPP): Applying Digital Tools in the Analysis of Political and Social Transformations in the Historical Region of Macedonia, 12th–14th Centuries*, in: *medieval worlds: comparative & interdisciplinary studies* 5 (2017) 170–194, at 186–189.

Here, we have resorted for example to the itineraries of the Serbian King Stefan Uroš IV Dušan in Byzantine Macedonia, which were reconstructed and published by the Serbian scholar Miodrag A. Purković, and have re-evaluated and augmented them with new methods and data.⁴³ Their visualisation helps us to become aware of the patterns of royal movement in a contested border zone between the Byzantine Empire and the Serbian Kingdom and to understand its role in the appropriation of space through imperial power.

This approach leads us directly to the FWF Austrian Science Fund Project P 30384-G28 “Byzantino-Serbian Border Zones in Transition: Migration and Elite Change in pre-Ottoman Macedonia (1282–1355)”, which is conducted by Mihailo Popović (as Project Leader) and is hosted at the Division of Byzantine Research of the Institute for Medieval Research of the Austrian Academy of Sciences.⁴⁴ Two scholars, namely Vratislav Zervan and Bernhard Koschicek, are engaged in this project, which will last for four years (1 October 2017–30 September 2021).

Although it is a sub-project of the Long-Term Project *Tabula Imperii Byzantini* (TIB), it interacts with DPP concerning several aspects, which are addressed in two distinct work packages, namely “Rivalling Political Concepts – Byzantium and the Medieval Serbian Oecumene” and “Cross-Border Societies and Elite Change in Byzantine Macedonia”. Special attention is given to the analysis of formulations in Byzantine and Serbian charters with regard to the Serbian expansion in the area of research, the acquisition of new territories and their administrative incorporation on the macro-level and to the localisation of conquered settlements with related settlement typologies as well as on the change of local elites on a micro-level. Moreover, tools from Digital Humanities in mapping and visualisation, which were amongst others developed by DPP, are applied in order to communicate the achieved results to the interested public. The

⁴³ Miodrag A. Purković, Itinerar kralja i cara Stefana Dušana, in: Glasnik Skopskog naučnog društva 19 (1938) 239–244. Our article on this issue will be published soon: Bernhard Koschicek/Mihailo St. Popović/Vratislav Zervan, Memories are Made of This: Tracing Ambulant Rulers, Local Elites and Shifting Borders in Byzantine Macedonia (1282–1355), in: Edited Volume in Honor of Predrag Matetić, Columbus, OH [in press].

⁴⁴ URL: <<https://tib.oeaw.ac.at/index.php?seite=sub#borderzone>>, 30.01.2019.

data of this sub-project contributes to our Case Study and also enriches the map-based online application, the *DPP Mapviewer*.

Step 6

In the spring of 2017 Mihailo Popović has accomplished two new scholarly co-operations, firstly with the Hilandar Research Library (HRL) of the Ohio State University⁴⁵ and secondly with the project Pelagios⁴⁶. Thus, the aim to digitise/ to scan selected manuscripts (i.e. Serbian charters), as outlined in the project proposal of DPP, has been implemented. Amongst others, the Hilandar Research Library is archiving and preserving precious Byzantine, Bulgarian and Serbian medieval charters on the monasteries and their landed property in Byzantine Macedonia.

In the present Case Study the scans of the charter, which has been evaluated, was provided generously by the aforesaid Hilandar Research Library (signature HRL, SPEC.HM.SDS.132 and 133), which will lead to a sustainable continuation of the synergy in the future. The researched charter was issued to the Monastery of Saint George-Gorg near Skopje by the Serbian King Milutin in the year 1300 (see above). Its scan was annotated with the help of the software *Recogito*⁴⁷, which was developed by Pelagios.



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⁴⁵ URL: <<https://library.osu.edu/hrl>>, 02.02.2019.

⁴⁶ URL: <<http://commons.pelagios.org/>>, 02.02.2019.

⁴⁷ URL: <<https://recogito.pelagios.org/>>, 02.02.2019.



Fig. 3: Screenshot of the Online Platform Recogito, Example of a Text Annotation

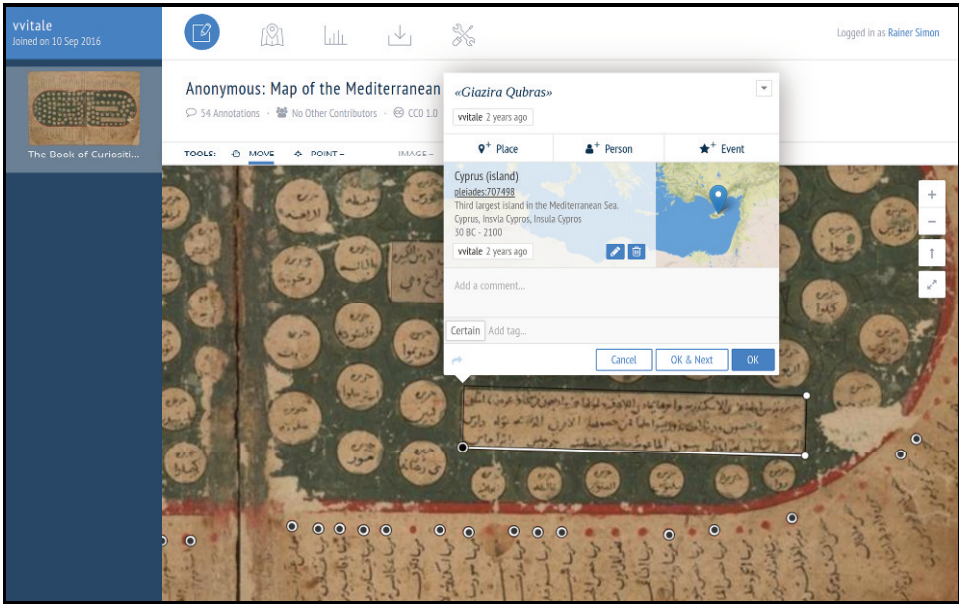


Fig. 4: Screenshot of the Online Platform Recogito, Example of a Map Annotation

Recogito is an online platform for collaborative document annotation (cf. Fig. 3 and Fig. 4).⁴⁸ It provides a personal workspace for uploading, collecting and organising source materials (texts, images and tabular data), and collaborating in their annotation and interpretation. In addition to commentary and tagging, *Recogito* supports *semantic annotation*, i.e. the marking up of Named Entities with identifiers from digital authority files. The use case that is currently implemented to the full extent is *geo-tagging*: by annotating place names in a text or digitised map or manuscript with links to an online gazetteer (such as GeoNames⁴⁹ or the Pleiades Gazetteer of the Ancient World), users can create maps from documents easily, export their data for use in other tools, and connect their work to other data on the Web.

Since its launch in December 2016, *Recogito* has attracted more than 2,200 registered users, with an activity between 200 and 1,500 edits per day on average. We have been receiving favorable feedback about the general usability of the tool, as well as about how the results produced with it yield new perspectives on sources, aid communicating and teaching, how the process of collaborative annotation itself has value for scholarly and educational purposes, and how the annotation of place names or other kinds of geographic entities (such as peoples, regions or natural features) can be an important first step in the analysis of many kinds of historical documents, including travelogues, historiographical accounts and maps.

Currently funded by the Andrew W. Mellon Foundation until the end of 2019, *Recogito*'s development roadmap has been shaped by community involvement and feedback. Our community has also helped to translate the interface and training material into six languages (Dutch, German, Italian, Persian, Spanish, Turkish), and we are working with them to develop further case studies for using *Recogito* in the classroom and in research.

Most recently, we have extended *Recogito* with a functionality for annotating relationships between entities, adding further to what we feel has high potential

⁴⁸ Rainer Simon/Elton Barker/Leif Isaksen/Pau de Soto Cañamares, Linked Data Annotation without the Pointy Brackets: Introducing Recogito 2, in: *Journal of Map and Geography Libraries* 13/1 (2017) 111–132.

⁴⁹ URL: <<https://www.geonames.org/>>, 03.02.2019.

to offer enhanced ways for scholars in the Humanities to interpret and enrich their source material, prepare them for further analysis in other environments, and produce new scholarly results, including interactive formats such as geo-spatial or graph visualisations.

Rainer Simon

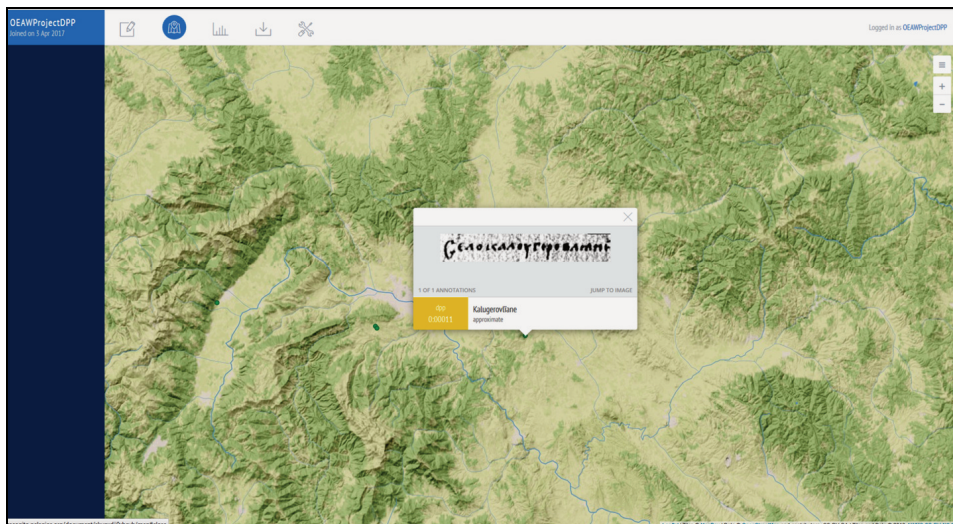


Fig. 5: Screenshot of the Online Platform Recogito, Annotation of the Charter of the Serbian King Milutin from the Year 1300

The places (i.e. villages) in the charter of the Serbian King Milutin from the year 1300 have been identified, extracted and localised by Mihailo Popović and David Schmid. Altogether 32 places in a base map of Pelagios were linked to the respective toponyms in the scans of the charter (Fig. 5).⁵⁰ These entries were again linked to the respective entry in the *DPP OpenAtlas Database* and, thus, to the *DPP Mapviewer* via permalinks.

Step 7

What is more, the analysis and input of data deriving from Serbian, Bulgarian and Byzantine charters from the 13th and 14th centuries in the *DPP OpenAtlas Database* yields new scholarly results concerning Byzantino-Serbian linguistic aspects.

⁵⁰ See the following link in order to browse the pilot study in this field: <<http://recogito.pelagios.org/OEAWProjectDPP>>, 03.02.2019.

As has been mentioned above, the two charters for the Monastery of Saint Nikita form an integral part of the charter cluster on the target area of Skopje. The first charter was issued in Greek language by the Byzantine Co-Emperor Michael IX Palaiologos most probably in 1299/1300, the second is a Serbian translation of a Greek charter by the Byzantine Emperor Andronikos II Palaiologos from 1299/1300 (or 1308?). Both are providing a fascinating insight into the Byzantine and Serbian settlement terminology of the time. From a linguistic point of view a direct comparison of the specific terms for the designation of settlements proves to be most instructive, because it illustrates a cultural transfer in the border zones between the two rivalling domains.

At this point we would like to highlight two examples:

In ca. 1299/1300 a Church of Saint Nicholas was donated by Co-Emperor Michael IX with its vineyards and watermills in the village of Ljuběne to the Monastery of Saint Nikita (θεῖον ναὸν εἰς ὄνομα τιμώμενον τοῦ παμμάκαρος Ἀγίου Νικολάου καὶ διακεῖμενον εἰς τὴν περιοχὴν τῆς Λουμπεανίνης)⁵¹, which was confirmed by Andronikos II – at the instigation of the Serbian King Stefan Uroš II Milutin – in ca. 1299/1300 (or 1308?) [I druga cr(ь)k(o)въ S(ve)t(a)-go Nikoli obrětajušti se vъ naměsti Ljuběni, s vinogradi i sъ voděničijemъ i pročego naměstija eže vъ ōblasti jeg(o)].⁵²

The village of Viništa was given by Michael IX to the Monastery of Saint Nikita (ἕτερον τόπον καλούμενον Βίνισσαν, διήκοντα μέχρι τοῦ ὄχθου τοῦ Σελκόβου).⁵³ In the charter of Andronikos II the donation of the respective village is confirmed (Drugo město Viništa ōpirajušti do brěga Selkova).⁵⁴

Such a data structure enables us to create a catalogue of Byzantine and Serbian settlement terminology with the possibility of direct comparison, e.g.: upper town/fortress: κάστρον – град (grad); lower town: ἐμπόριον – трг (trg) or амборъ (ambor) and προάστειον – подградије (podgradije); old village: παλαιο-

⁵¹ Gramota na car Mihail IX Paleolog za manastirov Sv. Nikita kaj Skopje 288–292.

⁵² Zbornik srednjovekovnih ćirilćkih povelja i pisama 406 f. Cf. on the localisation: Vassiliki Kravari, *Villes et villages de Macédoine occidentale* (Paris 1989) 135; Miodrag Al. Purković, *Popis sela u srednjovekovnoj Srbiji*, in: *Godišnjak Skopskog Filozofskog Fakulteta* 4/2 (1939/40) 53–160, at 114.

⁵³ Gramota na car Mihail IX Paleolog za manastirov Sv. Nikita kaj Skopje 288–292. Cf. on the localisation: Kravari, *Villes et villages* 173 f.

⁵⁴ Zbornik srednjovekovnih ćirilćkih povelja i pisama 406 f.

χώριον, τό = старо село (staro selo; the opposite of a new village); abandoned village: παλαιοχώριον, τό = селиште (selište); settlement site for a new village: селиште (selište); hamlet: ἀγρίδιον, τό = заселк, заселак (zaselk, zaselak) etc.

This research question has evolved in our Case Study during DPP and will be elaborated thoroughly in future projects.

Conclusion

The present contribution sums up the experience gained during our research on the Case Study “The Historical Region of Macedonia (12th–14th Cent.) – The Transformation of a Medieval Landscape” as well as its scholarly and digital outcome. The reader has been guided systematically in seven steps from an analogue starting point in the Case Study to its digital transformation and visualisation. A focus was put on the (digital) how and not on static figures and visualisations alone, because quite often digital projects fail to explain their respective workflow step by step. That is why we have chosen the present transparent and comprehensible approach.

Online publications of written sources and of archaeological data regarding Byzantine Macedonia are very scarce. Both may be found as open access publications in the form of pdf files, but not as structured open data. Up until now there has also not been created a standard or best practice to provide the respective information online. The present Case Study has filled this gap substantially.

By comparing different scholarly editions of the aforesaid clusters of charters and by extracting data from these written sources according to the research questions of DPP, we have established a rich corpus of source-based material, which was then embedded into the *DPP OpenAtlas Database* (Fig. 6). Thus, we have established an online repository with the capability of state of the art dissemination and visualisation. These aims were achieved in close cooperation with the Team Department of Geography and Regional Research of the University of Vienna (Prof. Dr. Karel Kriz).⁵⁵

⁵⁵ Cf. the respective, joint publications: Karel Kriz/Alexander Pucher/Markus Breier, Digitizing Patterns of Power – Cartographic Communication for Digital Humanities, in: Proceedings of the International Cartographic Association 1 (2017) 1–5 [doi: 10.5194/ica-proc-1-62-2018]; Mihailo St. Po-

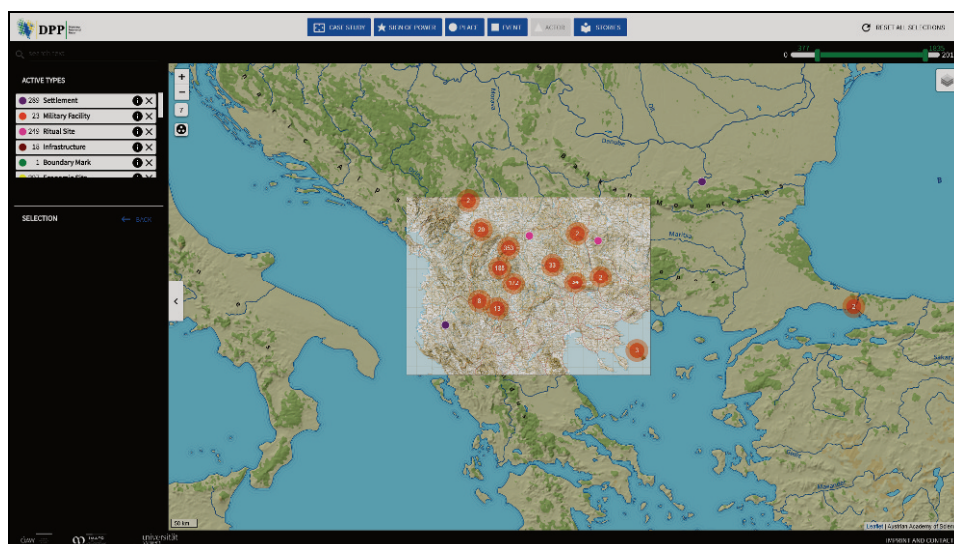


Fig. 6: Screenshot of the DPP Mapviewer with a Georeferenced Layer of the Map *Tabula Imperii Byzantini* (TIB 11 and TIB 16), 1:800,000

Consequently, this Case Study serves as a role model for similar sources and for future projects. In fact, its data forms the nucleus for the online atlas “Maps of Power: Historical Atlas of Places, Borderzones and Migration Dynamics in Byzantium”⁵⁶, which is in preparation by the Long-Term Project *Tabula Imperii Byzantini* (TIB) at the Austrian Academy of Sciences for the summer of 2019 and which is developed by two ongoing sub-projects of the TIB, namely “Byzantino-Serbian Border Zones in Transition: Migration and Elite Change in pre-Ottoman Macedonia (1282–1355)” [FWF Austrian Science Fund Project P 30384-G28] and “The Digital Tabula Imperii Byzantini (Dig-TIB) as Contribution to the World’s Cultural Heritage” [Jubiläumsfonds der Österreichischen Nationalbank, Project No. 17771].⁵⁷

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popović/David Schmid/Markus Breier, From the *Via Egnatia* to Prilep, Bitola and Ohrid: a Medieval Road Map based on Written Sources, Archaeological Remains and GIScience, in: *Space, Landscapes and Settlements in Byzantium* (Vienna/Novi Sad 2017) 289–317, 511–518.

⁵⁶ URL: <<http://oeaw.academia.edu/MapsofPower>>, 03.02.2019); cf. also the article entitled “The Digital Cluster Project ‘Digitising Patterns of Power (DPP)’: Uniting History, Archaeology, Geography and Cartography with Tools from Digital Humanities” of Mihailo St. Popović in this volume.

⁵⁷ URL: <<https://tib.oeaw.ac.at/index.php?seite=sub#digtib>>, 03.02.2019.

Bibliography

Primary Sources

- Acta Conciliorum Oecumenicorum 2, Volume 2, Pt 1, Concilium Constantinopolitanum tertium (680–681) (ed. Rudolf Riedinger, Berlin 1990).
- Actes de Chilandar. Première partie. Actes grecs (ed. Louis Petit/Basile Korablev, St. Petersburg 1911).
- Actes de Chilandar. Deuxième partie. Actes slaves (ed. Louis Petit/Basile Korablev, St. Petersburg 1915).
- Actes de Lavra. Première partie des origines au 1204 (ed. Paul Lemerle/André Guillou/Nicolas Svornos, Archives de l'Athos 5, Paris 1970).
- Actes de Saint-Panteleemon (ed. Gilbert Dagron/Paul Lemerle/Sima Ćirković, Archives de l'Athos 12, Paris 1982).
- Actes de Xéropotamou (ed. Jacques Bompaire, Archives de l'Athos 3, Paris 1964).
- Actes de Docheiariou (ed. Nicolas Oikonomidès, Archives de l'Athos 13, Paris 1984).
- Ansbert, Historia de expeditione Friderici I imperatoris (ed. Anton Chroust, Quellen zur Geschichte des Kreuzzuges Kaiser Friedrichs I., MGH Scriptores rerum Germanicarum V, Berlin 1928).
- Michael Attaleiates, Historia (ed. Immanuel Bekker, Corpus scriptorum historiae Byzantinae, Bonn 1853).
- Marinus Barletius, Scodrensis sacerdotis de vita et gestis Scanderbegi Epirotarum Principis (Straßburg 1537).
- Marinus Barletius, Skenderbeg, životot i delata na epirskiot vladetel (ed. Ljubinka Basotova/Vesna Dimovska-Janjatova, Skopje 2008).
- Basilika, Series A.2 (ed. Herman Jan Scheltema/Nicolaas van der Wal, Groningen 1956).
- The Correspondence of Leo, Metropolitan of Synada and Syncellus (ed. Martha Pollard Vinson, Corpus Fontium Historiae Byzantinae 23, Washington, D.C. 1985).
- Demetri Chomateni, Ponemata Diaphora 316 (ed. Günter Prinzing, Corpus Fontium Historiae Byzantinae – Series Berolinensis 38, Berlin 2002).
- Danilo II, Život kraljice Jelene (Stara srpska književnost II, Novi Sad/Beograd 1970).
- Dušanov zakonik (ed. Biljana Marković, Stara srpska književnost knjiga 8, Beograd 1986).
- Eusebius, Epistula ad Caesarienses (ed. Hans-Georg Opitz, Athanasius Werke 2.1, Berlin 1940).
- The Geography of Ananias of Širak (Ašḫarhac'oyc'). The Long and the Short Recension (ed. Robert H. Hewsen, Wiesbaden 1992).
- Gramota na Car Dušan za crkvata Sv. Nikola kaj Kožle od 1353 godina (ed. Lidija Slaveva, Spomenici za srednovekovnata i ponovata istorija na Makedonija 3, Skopje 1980) 411–423.

- Gramota na car Mihail IX Paleolog za manastirov Sv. Nikita kaj Skopje od 1299 (?), po april (Lidija Slaveva/Vladimir Mošin, Spomenici za srednovjekovna i ponovata istorija na Makedonija 1, Skopje 1975) 286–292.
- Gramoti Treskavec (ed. Lidija Slaveva/Vladimir Mošin, Gramotite na Stefan Dušan za manastirov Treskavec, in: Spomenici za srednovjekovna i ponovata istorija na Makedonija 4, Skopje 1981).
- Gramotite na Stefan Dušan za manastirov Treskavec (ed. Lidija Slaveva/Vladimir Mošin, Spomenici za srednovjekovna i ponovata istorija na Makedonija 4, Skopje/Prilep 1981) 55–185.
- Gregory of Nyssa, *Contra Eunomium* (ed. Werner Jaeger, *Gregorii Nysseni opera*, Leiden 1960).
- Hierokles, *Synekdemos* (ed. Ernest Honigmann, *Le Synekdemus d'Hierokles et l'opus-cule géographique de Georges de Chypre*, Bruxelles 1939).
- Hrisovulja kralja Stefana Uroša III Prizrenskoj episkopiji (ed. Siniša Mišić, in: *Stari srpski arhiv* 8 [2009]) 11–36.
- Hrisovulja kralja Stefana Dušana Htetovskom manastiru (ed. Marija Koprivica, in: *Stari srpski arhiv* 13 [2014]) 143–179.
- Ioannis Cantacuzeni eximperatoris historiarum libri IV. Graece et Latine (ed. Ludwig Schopen, *Corpus Scriptorum Historiae Byzantinae* II, Bonn 1831).
- Ioannis Cantacuzeni eximperatoris historiarum libri IV. Graece et Latine (ed. Ludwig Schopen, *Volumen III*, Bonn 1832).
- Ioannis Scylitzae Synopsis Historiarum (ed. Ioannes Thurn, *Corpus Fontium Historiae Byzantinae – Series Berolinensis* 5, Berlin 1973).
- Inscriptiones Corinthiae saeculorum IV. V. VI. (ed. Erkki Sironen, *Inscriptiones Graecae* 4, *Inscriptiones Argolidis* [Editio altera] 3, Berlin 2016).
- The Itinerary of Benjamin of Tudela. *Travels in the Middle Ages*, translated by Marcus Nathan Adler (Malibu 1987).
- Kekavmen, Soveti i Rasskazi. Poučenie vizantijskogo polkovodca XI veka. Izdanie vtoroe, Prerabotannoe i dopolnennoe. Podgotovka teksta, vvedenie, perevod s grečeskogo i kommentarij (ed. G. G. Litavrina, *Seriya Vizantijskaja biblioteka Istočniki*, Sankt Petersburg 2003).
- Anna Komnene, Alexias (ed. Athanasios Kambylis/Dieter R. Reinsch, *Corpus Fontium Historiae Byzantinae* 40/1, Berlin/New York 2001).
- Končanski praktik (ed. Aleksandar Solovjev, in: *Zbornik radova Vizantološkog instituta* 3 [1955]) 83–108.
- Lex Baioariorum* (ed. Roman Deutinger, Regensburg 2017).
- Litterae Gregorii II papae decretales* (ed. Johannes Merkel, *MGH LL* 3, Hannover 1863).

- Reinhold Lubenau, *Beschreibung der Reisen* (ed. Wilhelm Sahm, *Mitteilungen aus der Stadtbibliothek zu Königsberg i. Pr.* 4–8, Königsberg i. Pr. 1914–1930).
- John Malalas, *Chronographia* (ed. Ludwig Dindorf, Bonn 1831).
- Georgios Monachos, *Short Chronicle* (ed. Jaques Paul Migne, *Patrologiae cursus completus, series Graeca* 110, Paris 1866).
- Nicetae Choniatae *Historia* (ed. Ioannes Aloysius Van Dieten, *Corpus Fontium Historiae Byzantinae – Series Berolinensis* 11, Berlin 1975).
- Notitiae episcopatum ecclesiae Constantinopolitanae. *Texte critique, introduction et notes* (ed. Jean Darrouzès, Paris 1981).
- Notitiae episcopatum ecclesiae Constantinopolitanae (ed. Jean Darrouzès, Paris 1981).
- Eparchikon Biblion (ed. Johannes Koder, CFHB 33, Wien 1991).
- Opšta hrisovulja cara Stefana Dušana Hilandarū (ed. Siniša Mišić/Marija Koprivica, in: *Stari srpski arhiv* 14 [2015]) 65–106.
- Popis na imotite na Htetovski ot manastir od 1343 godina (ed. Lidija Slaveva, in: *Spomenici za srednevekovnata i ponovata istorija na Makedonija* 3, Skopje 1980) 277–299.
- Constantine Porphyrogenitus, *De thematibus* (ed. Agostino Pertusi, *Studi e Testi* 160, Città del Vaticano 1952).
- Povelja cara Stefana Dušane o darovanju sela Leskovljane manastiru Hilandarū (ed. Stanoje Bojanin, in: *Stari srpski arhiv* 4 [2005]) 119–134.
- Procopius, *Bella* (ed. Jacob Haury/Gerhard Wirth, 1, Leipzig 1962).
- Procopius, *De aedificiis* (ed. Jacob Haury/Gerhard Wirth, Leipzig 1964).
- Georgios Sphrantzes, *Memorii 1401–1477* (ed. Vasile Grecu, *Scriptores Byzantini* 5, Bucharest 1966).
- Stari srpski zapisi i natpisi I (ed. Ljubomir Stojanović, Beograd 1902).
- Suda (ed. Ada Adler, 1–4, Leipzig 1928–1935).
- Svetoarhandelovska hrisovulja (ed. Siniša Mišić/Tatjana Subotić-Golubović, Beograd 2003).
- Synod of Aschheim (ed. Albert Werminghoff, *MGH Concilia aevi Karolini* I, Hannover 1906) 56–58.
- Theophanes continuatus (ed. Immanuel Bekker, Bonn 1838).
- Theophanes, *Chronographia* (ed. Carl de Boor, Leipzig 1883).
- Thomas Artsruni, *History of the House of the Artsrunik'* (ed. Robert W. Thomson, Detroit 1985).
- T'ovma Arcruni (ed. K. Patkanean, T'ovmayi vardapeti Arcrunwoy Patmut'iwn tann Arcrunac', St. Petersburg 1887, reprint Tbilisi 1917).
- Die Traditionen des Hochstiftes Freising 1–2 (ed. Theodor Bitterauf, München 1905–1909); URL: <<https://www.bayerische-landesbibliothek-online.de/freisingertraditionen>>.

Vizantijski izvori za istoriju naroda Jugoslavije (ed. Franjo Barišić/Božidar Ferjančić, Vizantološki institut Srpske akademije nauka i umetnosti 18, Beograd 1986).

Willibald, Vita Bonifatii (ed. Reinhold Rau, FSGA IVb, Darmstadt 2011) 450–526.

Zakonik cara Stefana Dušana 1349 i 1354 (ed. Nikola Radojčić, Beograd 1960).

Zbornik srednjovekovnih ćiriličkih povelja i pisama Srbije, Bosne i Dubrovnika I (1186–1321) (ed. Vladimir Mošin/Sima Ćirković/Dušan Sindik, Beograd 2011).

Životi kraljeva i arhiepiskopa srpskih napisao arhiepiskop Danilo i Drugi (ed. Đuro Daničić, Zagreb 1866).



Secondary Literature

- David Abulafia/Nora Berend, *Medieval Frontiers: Concepts and Practices* (Aldershot 2002).
- Jessica C. Aguirre, *The Unlikely History of the Origins of Modern Maps*, Smithsonian.com, 2014, URL: <<https://www.smithsonianmag.com/history/unlikely-history-origins-modern-maps-180951617/>>, 02.10.2018.
- Gilles Albaredes, *A New Approach: User Oriented GIS*, in: *Proceedings of EGIS '92* (München 1992) 830–837.
- Jochen Albrecht, *Key Concepts and Techniques in GIS* (Los Angeles 2009).
- Vladimir Aleksić, *Medieval Vlach Soldiers and the Beginnings of Ottoman Voynuks*, in: *Belgrade Historical Review II* (2011) 105–128.
- Id., *Dva prepisa potvrdne hrsovolje Stefana Dušana povodom osnivanja Manastira Vavedenje Presvete Bogorodice, zadužbine sevastokratora Dejana, u selu Arhiljevica kod Preševa*, in: *Stari srpski arhiv* 12 (2013) 31–65.
- Gerd Althoff, *Die Veränderbarkeit von Ritualen im Mittelalter*, in: *Formen und Funktionen öffentlicher Kommunikation im Mittelalter*, ed. Gerd Althoff (Vorträge und Forschungen 51, Stuttgart 2001) 157–176.
- Id., *Die Ottonen: Königsherrschaft ohne Staat* (Stuttgart 2013).
- Rosa D'Amiko, *Vatikanska ikona Jelene Anžuske i legendarna "ikona cara Konstantina": ikonografski i politički aspekti srpske svetinje u Rimu*, in: *Niš i Vizantija X, Simpozium, Niš 3–5. Jun 2011. Zbornik radova*, ed. Miša Rakocija (Niš 2012) 305–322.
- Karl Amon, *Hans Herzheimer in Wittenberg 1518/19*, in: *Reformatio Ecclesiae. Beiträge zu kirchlichen Reformbemühungen von der Alten Kirche bis zur Neuzeit. Festgabe für Erwin Iserloh*, ed. Remigius Bäumer (Paderborn/Wien 1980) 301–319.
- Anders Andrén, *Between Artifacts and Texts. Historical Archaeology in Global Perspective. Contributions to Global Historical Archaeology* (New York 1998).
- Arnold Angenendt, *Von der Spätantike zum frühen Mittelalter: Kontinuitäten und Brüche, Konzeptionen und Befunde*, ed. Theo Kölzer/Rudolf Schieffer (Vorträge und Forschungen 70, Ostfildern 2009) 101–142.
- Dimităr Angelov, *Agrarnite otnošenija v severna i sredna Makedonija prez XIV vek* (Sofija 1958).
- Dimităr Angelov, *Rost i struktura krupnogo monastyrskogo zemlevladienija v severnoj i srednej Makedonii v XIV v.*, in: *Vizantijskij vremennik* 11 (1956) 135–162.
- Peter Aufgebauer, *Burg – Kloster – Stadt. Zur mittelalterlichen Geschichte des südlichen Niedersachsen*, in: *Concilium medii aevi* 1 (1998) 123–174.
- Alain Auger/Jean Roy, *Expression of Uncertainty in Linguistic Data*, in: *2008 11th International Conference on Information Fusion* (Cologne 2008) 1–8.
- Edward L. Ayers, *Turning Toward Place, Space and Time*, in: *The Spatial Humanities. GIS and the Future of Humanities Scholarship*, ed. David J. Bodehammer/John Corriegan/Trevor M. Harris (Bloomington 2010) 1–13.

- Gordana Babić, Nizovi portreta srpskih episkopa, arhiepiskopa i patrijarha u zidnom slikarstvu XII–XVI veka, in: Sava Nemanjić – Sveti Sava, Istorija i predanje, ed. Vojislav J. Đurić (Beograd 1979) 319–342.
- Geoff Bailey, Site Catchment Analysis, in: *Archaeology: The Key Concepts*, ed. Colin Renfrew/Paul Bahn (London/New York 2005) 172–176.
- Miguel Barcelo/Pierre Toubert (eds.), *L'incastellamento. Actes des recontres de Gérone (26–27 Novembre 1992) et de Rome (5–7 Mai 1994)* (Collection l'École Française de Rome 241, Rome 1998).
- John W. Barker, On the Chronology of the Activities of Manuel II Palaeologus in the Peloponnesus in 1415, in: *Byzantinische Zeitschrift* 55 (1962) 39–55.
- Mark C. Bartusis, Serbian pronioia and pronioia in Serbia: the diffusion of an institution, in: *Zbornik radova Vizantološkog instituta* 48 (2011) 177–216.
- Id., *Land and Privilege in Byzantium. The Institution of Pronioia* (Cambridge 2012).
- Judith Benedix, Zwei frühmittelalterliche Gräberfelder im Vergleich. Eine habitusbasierte Studie (Comparison of two Early Medieval Burial Grounds. A study based on Bordieu's Habitus-Field-Theory), in preparation.
- Brandon Bennett, What is a Forest? On the Vagueness of Certain Geographic Concepts, in: *Topoi* 20 (2002) 189–201.
- Albrecht Berger, Viranşehir (Mokisos), eine byzantinische Stadt in Kappadokien, in: *Istanbuler Mitteilungen* 48 (1998) 349–429.
- Reinhard Bernbeck, *Theorien in der Archäologie* (Tübingen 1997).
- John W. Bernhardt, *Itinerant Kingship and Royal Monasteries in Early Medieval Germany, 936–1075* (Cambridge Studies in Medieval Life and Thought, Cambridge 1993).
- Jacques Bertin/William J. Berg, *Semiology of Graphics: Diagrams, Networks, Maps* (Madison–Wisconsin 1983).
- Felix Biermann, *Archäologische Studien zum Dorf der Ostsiedlungszeit. Die Wüstungen Miltendorf und Damsdorf in Brandenburg und das ländliche Siedlungswesen des 12. bis 15. Jahrhunderts in Ostmitteleuropa* (Forschungen zur Archäologie im Land Brandenburg 12, Zossen 2010).
- Felix Biermann/Thomas Kersting/Anne Klammt (eds.), *Der Wandel um 1000: Beiträge der Sektion zur slawischen Frühgeschichte der 18. Jahrestagung des Mittel- und Ostdeutschen Verbandes für Altertumsforschung in Greifswald, 23. bis 27. März 2009* (Beiträge zur Ur- und Frühgeschichte Mitteleuropas 60, Langenweissbach 2011).
- Felix Biermann/Jiří Macháček, Pennigsberg und Pohansko – vergleichende Untersuchungen zu Landnutzungssystemen und Siedlungsstrukturen im frühmittelalterlichen Ostmitteleuropa, in: *Transformationen und Umbrüche des 12./13. Jh.*, ed. Felix Biermann/Thomas Kersting/Anne Klammt/Thomas Westfalen (Beiträge zur Ur- und Frühgeschichte Mitteleuropas 64, Langenweißbach 2012) 181–190.
- Felix Biermann/Dominik Nowakowski/Normen Posselt, *Mittelalterliche Turmhügel im nordschlesischen Tiefland*, in: *Burgen und Schlösser* 58 (2017) 91–106.

- Lewis Binford, *Archaeology as Anthropology*, in: *American Antiquity* 28 (1962) 217–225.
- Thomas Bittner/John G. Stell, *Vagueness and Rough Location*, in: *GeoInformatica* 6,2 (2002) 99–121.
- Mark Blackburn, *Coin Circulation in Germany during the Early Middle Ages: The Evidence of Single-Finds*, in: *Fernhandel und Geldwirtschaft, Beiträge zum Deutschen Münzwesen in sächsischer und salischer Zeit. Ergebnisse des Dannenberg-Kolloquiums* (Sigmaringen 1993) 37–54.
- Id., *Coin Finds from Kaupang: a Viking Emporium on the North Sea*, in: 13. Congreso Internacional de Numismática 2, ed. Carmen Alfaro/Carmen Marcos/Paloma Otero (Madrid 2003) 1143–1149.
- Id., *Coinage in the Archaeological Context*, in: *The Oxford Handbook of Anglo-Saxon Archaeology*, ed. Helena Hamerow/David Hinton/Sally Crawford (Oxford 2011) 580–599.
- Miloš Blagojević, *Zemloradnja u srednjovekovnoj Srbiji* (Beograd 1973).
- Id., *Državna uprava u srpskim srednjovekovnim zemljama* (Beograd 2001).
- Nils Bock/Georg Jostkleigrewe/Bastian Walter, *Faktum und Konstrukt. Politische Grenzziehungen im Mittelalter: Verdichtung – Symbolisierung – Reflexion* (Symbolische Kommunikation und gesellschaftliche Wertesysteme – Schriftenreihe des Sonderforschungsbereichs 496, 35, Münster 2011).
- David J. Bodenhamer, *The Potential of Spatial Humanities*, in: *The Spatial Humanities. GIS and the Future of Humanities Scholarship*, ed. David J. Bodenhamer/John Corrigan/Trevor M. Harris (Bloomington 2010) 14–30.
- Id., *Beyond GIS: Geospatial Technologies and the Future of History*, in: *History and GIS*, ed. Alexander von Lünen/Charles Travis (Dordrecht 2013) 1–13.
- David J. Bodenhamer/John Corrigan/Trevor M. Harris (eds.), *The Spatial Humanities: GIS and the Future of Humanities Scholarship* (Bloomington/Indianapolis 2010).
- Günther Böhme, *Bildungsgeschichte des frühen Humanismus* (Darmstadt 1984).
- Dimitrije Bogdanović, *Stara srpska književnost* (Beograd 1980).
- Stanoje Bojanin, *Povelja Vuka Brankovića o darovanju Skopskog manastira Svetog Georgija manastiru Hilandaru*, in: *Stari srpski arhiv* 8 (2009) 119–128.
- Milan Boškoski, *Makedonija vo XI i XII vek: Nadvorešni upadi na teritorijata na Makedonija* (Skopje 1997).
- Id., *Vlasite vo Makedonija od X do XII vek*, in: *Zbornik na trudovi od megjunarodniot naučen simpozium: "Vlasite na Balkanot"* (održan na 09–10 noemvri 2001 vo Skopje) (Skopje 2002).
- Id., *Vlasite vo Makedonija i na Balkanot vo XIV i XV vek*, in: *Zbornik na trudovi od megjunarodniot naučen simpozium: "Vlasite na Balkanot"* (održan na 7–8 noemvri 2003 vo Skopje) (Skopje 2005).

- Chryssa Bourbou, *The Biocultural Model Applied: Synthesizing Research on Greek Byzantine Diet (7th–15th c. AD)*, in: *Multidisciplinary Approaches to Food and Foodways in the Medieval Eastern Mediterranean*, ed. Yona Waksman (in press).
- Pierre Bourdieu, *Entwurf einer Theorie der Praxis auf der ethnologischen Grundlage der kabyliischen Gesellschaft* (Frankfurt/Main 1976).
- Id., *Ökonomisches Kapital, kulturelles Kapital, soziales Kapital*, in: *Soziale Welt. Sonderband 2, Soziale Ungleichheiten*, ed. Reinhard Kreckel (Göttingen 1983) 183–198.
- Id., *Sozialer Sinn. Kritik der theoretischen Vernunft* (Frankfurt/Main 1987).
- Id., *Sozialer Raum und "Klassen": 2 Vorlesungen* (Suhrkamp-Taschenbuch Wissenschaft 500, Frankfurt/Main 6¹⁹⁹⁰ [1985]).
- Id., *Die feinen Unterschiede: Kritik der gesellschaftlichen Urteilskraft* (Suhrkamp-Taschenbuch Wissenschaft 658, Frankfurt/Main 24²⁰¹⁴ [1982]).
- Charles Bowlus, *Franks, Moravians, and Magyars. The Struggle for the Middle Danube 788–907* (Philadelphia 1995).
- Ivan Božilov, *Balgarskata arhiepiskopija XI–XII vek. Spisokot na balgarskite arheipiskopi* (Sofija 2011).
- Sebastian Brather, *Ethnische Interpretationen in der frühgeschichtlichen Archäologie. Geschichte, Grundlagen und Alternativen* (Ergänzungsbände zum Reallexikon der germanischen Altertumskunde 42, Berlin 2004).
- Markus Breier, *Getting Around in the Past: Historical Road Modelling*, in: *Understanding Different Geographies*, ed. Karel Kriz/William Cartwright/Michaela Kinberger (Berlin 2013) 215–226.
- Milko Brković, *Srednjovjekovna Bosna i Hum. Identitet i kontinuitet* (Mostar 2²⁰¹⁰).
- Alex Brown/Aleks Pluskowski, *Detecting the Environmental Impact of the Baltic Crusades on a Late-Medieval (13th–15th Century) Frontier Landscape: Palynological Analysis from Malbork Castle and Hinterland, Northern Poland*, in: *Journal of Archaeological Science* 38 (2011) 1957–1966.
- Alex Brown, *Medieval Landscape Transformation in the Southeast and Eastern Baltic: Palaeoenvironmental Perspectives on the Colonisation of Frontier Landscapes*, in: *Archaeologia Baltica* 20 (2013) 24–46.
- Alex Brown et al., *The Ecological Impact of Conquest and Colonization on a Medieval Frontier Landscape: combined Palynological and Geochemical Analysis of Lake Sediments from Radzyń Chełmiński, Northern Poland*, in: *Geoarchaeology* 30 (2015) 511–527.
- Warren Brown, *Unjust Seizure: Conflict, Interest, and Authority in an Early Medieval Society* (Ithaca/London 2001).
- Nina Brundke/Stefan Eichert/Christina Cheung/Michael Richards, *Die arpadenzeitlichen Bestattungen des Oberleiserbergs (Niederösterreich). Erste Ergebnisse der interdisziplinären Analyse*, in: *Acta Archaeologica Carpathica* 52 (in press) 111–149.

- Karl Brunner, Bridging a Dark Age. Szenarien zum historischen Hintergrund, in: Das frühungarische Reitergrab von Gnadendorf (Niederösterreich), ed. Falko Daim/Ernst Lauermann (Mainz 2006) 273–280.
- Đorđe Bubalo, Episkop Prizrenski Georgije (O „prezimenima“ srednjovekovnih arhijereja), in: Istorijski časopis 48 (2001) 45–52.
- Id., O nazivu i vremenu nastanka popisa imanja Htetovskog manastira, in: Stari srpski arhiv 1 (2002) 177–194.
- Id., Vlaho episkop ili Vlahoepiskop, in: Zbornik radova Vizantološkog instituta 39 (2001/2002) 197–220.
- Id., Srpski nomici (Beograd 2004).
- Id., Bubalo, Za novo, kritičko izdanje treskavačkih hrisovulja kralja Dušana, in: Stari srpski arhiv 7 (2008) 207–229.
- Id., Pragmatic literacy in medieval Serbia (Utrecht Studies in Medieval Literacy 29, Turnhout 2014).
- Philippe Buc, The Dangers of Ritual: Between Early Medieval Texts and Social Scientific Theory (Princeton 2001).
- Michael Calore, Historical Map Mashups Turn Cities Into Glass Onions of Time, Web-Monkey 2009, URL: <http://www.webmonkey.com/2009/05/historical_map_mashups_turn_cities_into_glass_onions_of_time/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+wired%2Findex+Wired%3A+Index+3+Top+Stories+2>, seen 21.05.2009.
- Italo Calvino, Invisible Cities (London 1979).
- Pavel Čáp/Petr Dresler/Jiří Macháček/Renáta Přichystalová, Großmährische Kirchen in Pohansko bei Břeclav, in: Frühmittelalterliche Kirchen als archäologische und historische Quelle, ed. Lumir Poláček/Jana Maříková-Kubková (Internationale Tagungen in Mikulčice 8, Brno 2010) 187–204.
- William E. Cartwright/Michael P. Peterson/Georg Gartner (eds.), Multimedia Cartography (Heidelberg 1999).
- Michel de Certeau, The Practice of Everyday Life (Berkeley 1984).
- Nicholas R. Chrisman, What Does 'GIS' Mean?, in: Transactions in GIS 3/2 (1999) 175–186.
- Id., How SYMAP became GIS, Esri Press 2006, URL: <http://www.gsd.harvard.edu/gis/manual/lcgsa/HarvardBLAD_screen.pdf>.
- Andreas Christ/Katharina Meißner/Madlen Reimer/Agatha Rudnik/Lukas Werther/Jana Wolf, Beiträge zur Tagung „Entgrenzte Räume? Konstruktion und Relevanz von Grenzen im Wandel“ an der Otto-Friedrich-Universität Bamberg vom 14. bis 15. Januar 2011 (Bamberg 2012).
- Walter Christaller, Das Grundgerüst der räumlichen Ordnung in Europa. Die Systeme der europäischen zentralen Orte (Frankfurter Geographische Hefte 24/1, Frankfurt/M. 1950).

- Id., Die zentralen Orte in Süddeutschland. Eine ökonomisch-geographische Untersuchung über die Gesetzmäßigkeit der Verbreitung und Entwicklung der Siedlungen mit städtischen Funktionen (Jena 1933, reprinted Darmstadt 1968).
- Id., How I Discovered the Theory of Central Places: A Report About the Origin of Central Places, in: *Man, Space and Environment*, ed. Paul Ward English/Robert C. Mayfield (New York 1972) 601–610.
- Gerardo Cioffari, *Gli zar di Serbia, la Puglia e S. Nicola. Una storia di santità e di violenza* (Memorie e documenti 4, Bari 1989).
- Sima M. Ćirković, Udeo srednjega veka u formiranju etničke karte Balkana, in: *Rabotnici, vojnici, duhovnici. Društva srednjovekovnog Balkana*, ed. Sima M. Ćirković/Vlastimir Gjokić (Beograd 2007) 175.
- James Conolly/Mark Lake, *Geographical Information Systems in Archaeology* (Cambridge Manuals in Archaeology, Cambridge 2006).
- Karen S. Cook, The Historical Role of Photomechanical Techniques In Map Production, in: *Cartography and Geographic Information Science* 29/3 (2002) 137–154.
- Vladimir Ćorović, *Istorija Srba* (Niš 2001).
- Richard Corradini, Art. Landnahme, in: *Reallexikon der Germanischen Altertumskunde* 17 (Berlin/New York 2001) 602–611.
- Charles Coulson, *Castles in Medieval Society: Fortresses in England, France, and Ireland in the Central Middle Ages* (Oxford 2003).
- Id., Freedom to Crenellate by Licence: an Historiographical Revision, in: *Nottingham Medieval Studies* 38 (1994) 86–137.
- Natasha Coveney, *Moated Sites in Medieval England: A Reassessment* (Doctoral Thesis, Leicester 2014).
- Oliver Creighton/Robert Liddiard, Fighting Yesterday's Battle: beyond War or Status in Castle Studies, in: *Medieval Archaeology* 52 (2008) 161–169.
- Oliver Creighton, Castle Studies and the European Medieval Landscape: Traditions, Trends and Future Research Directions, in: *Landscape History* 30/2 (2009) 5–20.
- Id., *Designs Upon the Land. Elite Landscapes of the Middle Ages* (Woodbridge 2009).
- Id., *Early European Castles: Aristocracy and Authority, AD 800–1200* (Bristol 2012).
- James Crow, The Byzantine City and the Archaeology of the Third Millennium, in: *Proceedings of the 23rd International Congress of Byzantine Studies* (Belgrade 2016) 65–143.
- Peter Csendes, Bemerkungen zum comitatus Sigifridi marchionis, in: *Stadt – Land – Burg. Festschrift für Sabine Felgenhauer-Schmiedt zum 70. Geburtstag*, ed. Claudia Theune/Gabriele Scharrer-Liska/Elfriede Huber/Thomas Kühtreiber (Studia Honoraria, Rahden/Westfalen 2013) 111–116.
- Florin Curta, *Southeastern Europe in the Middle Ages, 500–1250* (Cambridge 2006).
- Id., Constantinople and the Echo Chamber: The Vlachs in the French Crusade Chronicles, in: *Medieval Encounters* 22 (2016) 427–462.

- Miloš Cvetković, Uključivanje Slovena i Vlaha u sistem vizantijske provincijske organizacije na jugu Balkana do XI veka. Sličnosti i razlike. Zbornik radova vizantološkog instituta 49 (2012) 19–39.
- Iлона Czamanska, Vlachs and Slavs in the Middle Ages and Modern Era, in: *Res Historica* 41 (2016) 11–24.
- Falko Daim, Heldengrab im Niemandsland. Ein frühungarischer Reiter aus Niederösterreich (Mosaiksteine 2, 2. Edition, Mainz 2007).
- Djuro Daničić, Rječnik iz književnih starina srpskih, I–III (Beograd 1863–1864).
- Angelina Daskalova/Marija Raikova, Gramoti na balgarskite care (Sofija 2005).
- Gertrud Diepolder, Die Orts- und „IN PAGO“-Nennungen im bayerischen Stammesherzogtum zur Zeit der Agilolfinger (*Zeitschrift für Bayerische Landesgeschichte* 20, München 1957) 364–436.
- Sylviane Déderix, Traveling across Archaeological Landscapes: the Contribution of Hierarchical Communication Networks, in: *Keep the Revolution Going*, ed. Stefano Campana et al. (CAA 2015, Oxford 2016) 555–565.
- Peter Demján/Dagmar Dreslerová, Modelling Distribution of Archaeological Settlement Evidence based on Heterogeneous Spatial and Temporal Data, in: *Journal of Archaeological Science* 69 (2016) 100–109.
- Dužanka Dinić-Knežević, Vlasi, in: *Leksikon srpskog srenjeg veka*, ed. Sima Ćirković/Rade Mihaljčić (Beograd 1999) 86–87.
- Anton Distelberger, Das awarische Gräberfeld von Mistelbach (Niederösterreich) (Monographien zur Frühgeschichte und Mittelalterarchäologie 3, Innsbruck 1996).
- Franz Dölger, Regesten der Kaiserurkunden des oströmischen Reiches, 2. Teil. Regesten 1025–1204 (München/Berlin 1925).
- Jörg Döring/Tristan Thielmann, Einleitung: Was lesen wir im Raume? Der Spatial Turn und das Geheime Wissen der Geographen, in: *Spatial Turn. Das Raumparadigma in den Kultur- und Sozialwissenschaften*, ed. Jörg Döring/Tristan Thielmann (Bielefeld 2008) 7–48.
- Zorica Đoković, Stanovništvo istočne Makedonije u prvoj polovini XIV veka, in: *Zbornik radova Vizantološkog instituta* 40 (2003) 97–244.
- Nela Doláková/Alena Roszková/Antonín Přichystal, Palynology and Natural Environment in the Pannonian to Holocene Sediments of the Early Medieval Centre Pohansko near Breclav (Czech Republic), in: *Journal of Archaeological Science* 37 (2010) 2538–2550.
- Jennifer Dorman, Agency and Archaeology. Past, Present, and Future Directions, in: *Journal of Archaeological Method and Theory* 9/4 (2002) 303–329.
- Bořivoj Dostál, Břeclav – Pohansko IV: Velkomoravský velmožský dvorec (Opera Universitatis Purkynianae Brunensis, Facultas Philosophica 208, Brno 1975).
- Id., K časné slovanskému osídlení Břeclavi-Pohanska. Studie Archeologického ústavu v Brně (Praha 1982).

- Id., Kulturkontakte im mährisch-böhmisch-niederösterreichischen Raum während des Frühmittelalters (6.–10. Jahrhundert), in: Kontakte und Konflikte. Böhmen, Mähren und Österreich. Aspekte eines Jahrhunderts gemeinsamer Geschichte, ed. Thomas Winkelbauer (Waidhofen an der Thaya 1993) 19–26.
- Pavle Dragičević, Povelja „Carice“ Jevdokije i njenog sina Konstantina o darivanju Hilandaru njihove baštinske crkve u Arhiljevici, in: Stari srpski arhiv 10 (2011) 87–102.
- Petr Dresler/Jiří Macháček/Renáta Přichystalová, Die Vorburgen des frühmittelalterlichen Zentralortes in Pohansko bei Břeclav, in: Burg – Vorburg – Suburbium: Zur Problematik der Nebenareale frühmittelalterlicher Zentren, ed. Ivana Boháčová/Lumir Poláček (Internationale Tagungen in Mikulčice 7, Brno 2008) 229–270.
- Dagmar Dreslerová, Modelování přírodních podmínek mikroregionu na základě archeologických dat, in: Archeologické rozhledy 48 (1996) 605–614.
- Matthew Driscoll/Elena Pierazzo (eds.), Digital Scholarly Editing. Theory, Practice and Future Perspectives (Cambridge 2016).
- Jörg Dünne/Stephan Günzel (eds.), Raumtheorie (Grundlagentexte aus Philosophie und Kulturwissenschaften 9, Frankfurt am Main 2018).
- Tomáš Durdík, Ilustrovaná encyklopedie českých hradů (Praha 2009).
- Francis Dvornik, Byzantine Mission among the Slavs. SS. Constantine-Cyril and Methodius (Rutgers Byzantine Series, New Brunswick 1970).
- Id., The Making of Central and Eastern Europe (The Central and East European Series 3, Gulf Breeze 1974).
- Gillian Eadie, Detecting Privacy and Private Space in the Irish Tower House, in: Château Gaillard 24 (2010) 69–75.
- Id., Reflections of a Divided Country? The Role of Tower Houses in Late-Medieval Ireland, in: Château Gaillard 26 (2014) 135–147.
- Id., Identifying Functions in Castles: a Study of Tower Houses in Ireland, in: A House Such as Thieves Might Knock at, ed. Richard Oram (Donington 2015) 2–18.
- Ben Edwards, The Never-Before-Told Story of the World's First Computer Art (It's a Sexy Dame), see URL: <<https://www.theatlantic.com/technology/archive/2013/01/the-never-before-told-story-of-the-worlds-first-computer-art-its-a-sexy-dame/267439/>>, 2.10.2018.
- Florian Eibl, Zum Stand der Erforschung von Turmhügelburgen und verwandter Denkmäler in Altbayern südlich der Donau, in: Fines Transire 21 (2012) 255–289.
- Stefan Eichert, Frühmittelalterliche Strukturen im Ostalpenraum. Studien zu Geschichte und Archäologie Karantaniens (Forschung und Kunst 39, Klagenfurt 2012).
- Stefan Eichert/Bernhard Koschicek/Mihailo St. Popović, Digitising Patterns of Power (DPP): A Digital Approach towards Recording, Managing, Analysing and Presenting Archeological and Historical Information based on Case Studies from Eurasian Mountainous Regions, in: Acta Archaeologica Carpathica 51 (2016) 257–283.
- Monika Eigmüller/Georg Vobruba, Grenzsoziologie: Die Politische Strukturierung des Raumes (Wiesbaden 2006).

- Martin Eggers, „Das Großmährische Reich“ – Realität oder Fiktion? Eine Neuinterpretation der Quellen zur Geschichte des mittleren Donauraumes im 9. Jahrhundert (Stuttgart 1995).
- Anthony Emery, *Greater Medieval Houses of England and Wales 1300–1500* (New York 1996–2006).
- Stefan Esders/Heike Johanna Mierau, *Der althochdeutsche Klerikeid. Bischöfliche Diözesangewalt, kirchliches Benefizialwesen und volkssprachliche Rechtspraxis im frühmittelalterlichen Baiern* (Hannover 2000).
- ETH, 2007, *A Literary Atlas of Europe – Towards a Geography of Fiction* [online URL: <<http://www.karto.ethz.ch/content/specialinterest/baug/institute-ikg/institute-ikg/de.html>>, 03.10.2018].
- Fast Company, *These Pretty City Maps Were Drawn By Our Paths Through Them*, 2015, URL: <<https://www.fastcompany.com/3045458/these-pretty-city-maps-are-drawn-by-our-movements>>, 02.10.2018.
- Denis Feissel, *Notes d'épigraphie chrétienne VII. Cyriaque d'Ancône à l'Isthme de Corinthe*, *Bulletin de la Correspondance Hellénique* 101 (1977).
- Božidar Ferjančić, *O poveljama kralja Stefana Dušana manastiru Treskavcu kod Prilepa*, in: *Zbornik Radova Vizantološkog Instituta* 7 (1961) 161–168.
- Toni Filiposki, *Nekolku podatoci za prisustvoto na nomadi i blagorodnici od albansko poteklo vo Makedonija vo XIV vek*, in: *Glasnik na Institutot za nacionalna istorija* 47/1–2 (2003) 175–187.
- Marie-Josée Fortin/ Mark R. T. Dale, *Spatial Analysis: A Guide for Ecologists* (Cambridge 2005).
- Andrew U. Frank/Martin Raubal/Maurits van der Vlugt, *PANEL-GI Compendium – A Guide to GI and GIS* (Geographical Information Systems International Group (GISIG) & European Commission, Genua 2000).
- Free Our Data: the Blog, Ed Parsons, *ex-Ordnance Survey: 'Data Belongs to Citizens'*, 8 April 2007, URL: <<http://www.freeourdata.org.uk/blog/?p=96>>, 25.05.2009.
- Stephan Freund, *Von den Agilolfingern zu den Karolingern. Bayerns Bischöfe zwischen Kirchenorganisation, Reichsintegration und Karolingischer Reform (700–847)* (Schriftenreihe zur bayerischen Landesgeschichte 144, München 2004).
- Scott Freundschuh/Mark Blades, *The Cognitive Development of the Spatial Concepts NEXT, NEAR, AWAY and FAR*, in: *Cognitive and Linguistic Aspects of Geographic Space*, ed. Martin Raubal/David M. Mark/Andrew U. Frank (Berlin/Heidelberg 2013) 43–62.
- Smiljka Gabelić, *Manastir Lesnovo. Istorija i slikarstvo* (Beograd 1998).
- Luděk Galuška, *Die großmährische Siedlungsagglomeration Staré Město-Uherské Hradiště und ihre Befestigungen*, in: *Frühmittelalterlicher Burgenbau in Mittel- und Ost-*

- europa. Tagung Nitra vom 7. bis 10. Oktober 1996, ed. Joachim Henning/Alexander Ruttkey (Bonn 1998) 341–348.
- Id., Early Medieval Agglomeration Staré Město-Uherské Hradiště – Great Moravian Veligrad, in: *Quaestiones Medii Aevi Novae* 13 (2008) 45–61.
- Id., Die großmährische Siedlungsagglomeration von Staré Město-Uherské Hradiště (Mähren): Uherské Hradiště-Sady, Kirchenkomplex und Erzbischofsitz, in: *Die frühmittelalterlichen Wandmalereien Mährens und der Slowakei. Archäologischer Kontext und herstellungstechnologische Analyse*, ed. Martina Pippal/Falko Daim (Innsbruck 2008) 47–62.
- Id., Staré Město und Uherské Hradiště – von der frühslawischen Siedlung zur zentralen großmährischen Machttagglomeration Veligrad, in: *Frühgeschichtliche Zentralorte in Mitteleuropa*, ed. Jiří Macháček/Šimon Ungerman (Studien zur Archäologie Europas 14, Bonn 2011) 245–257.
- Milutin Garašanin, Nastanak i poreklo Ilira; Zaključna razmatranja, in: *Iliri i Albanci. SANU Naučni skupovi XXXIX. Odeljenje istorijskih nauka* 10 (Beograd 1988) 9–80.
- Günther Garbrecht, Historische Wasserbauten in Ostanatolien – Königreich Urartu, 9.–7. Jh. v. Chr., in: *Wasserbauten im Königreich Urartu und weitere Beiträge zur Hydrotechnik der Antike*, ed. Christoph Ohlig (Siegburg 2004) 1–104.
- Ken Garland, *Mr Beck's Underground Map* (London 1994).
- Verena Gassner/Sonja Jilek/Sabine Ladstätter, Am Rande des Reichs, die Römer in Österreich, *Österreichische Geschichte* 15 v. Chr.–378 n. Chr. (Wien 2002).
- Nancy Gauthier, Le Réseau de Pouvoirs de L'Évêque dans la Gaule du Haut Moyen-Âge, in: *Towns and Their Territories between Late Antiquity and the Early Middle Ages*, ed. Gian Pietro Brogiolo/Nancy Gauthier/Neil Christie (The Transformation of the Roman World 9, Leiden 2000).
- Ernest Geiß, Geschichte des Schlosses Herzheim und seiner Bewohner, in: *Oberbayerisches Archiv für vaterländische Geschichte*, Band 7 (München 1846) 186–237.
- Boris Gerov, Die lateinisch-griechische Sprachgrenze auf der Balkanhalbinsel, in: *Die Sprachen im Römischen Reich der Kaiserzeit*, ed. Günter Neumann (Köln/Bonn 1981) 147–165.
- James J. Gibson, *The Ecological Approach to Visual Perception* (New Jersey 1986).
- Tony Gill, Building Semantic Bridges between Museums, Libraries and Archives: The CIDOC Conceptual Reference Model, URL: <<http://journals.uic.edu/ojs/index.php/fm/article/view/1145/1065>>, 27.02.2018.
- Mark Gillings, Mapping Liminality: Critical Frameworks for the GIS-based Modelling of Visibility, in: *Journal of Archaeological Science* 84 (2017) 121–128.
- Eric Goldberg, *Struggle for Empire: Kingship and Conflict under Louis the German 817–876. Conjunctions of Religion and Power in the Medieval Past* (Ithaca 2006).
- Michael F. Goodchild, Geographical Information Science, in: *International Journal of Geographical Information Systems* 6/1 (1992) 31–45.

- Klaus Graf, Adel als Leitbild – zur Geschichte eines Grundwerts in Spätmittelalter und früher Neuzeit, in: *Gelungene Anpassung? Adelige Antworten auf gesellschaftliche Wandlungsvorgänge vom 14.–16. Jahrhundert*, ed. Horst Carl/Sönke Lorenz (Schriften zur südwestdeutschen Landeskunde 53, Ostfildern 2005) 67–82.
- Klaus Grebe, Die slawische Siedlung von Brandenburg (Havel) – Neuendorf (Vorbericht) (Ausgrabungen und Funde. Nachrichtenblatt für Vor- und Frühgeschichte 11, 1966) 157–166.
- Tim Greenwood, T'ovma Artsruni, in: *Christian-Muslim Relations 600–1500*, ed. David Thomas, URL: <http://dx.doi.org/10.1163/1877-8054_cmri_COM_24278>, 27.02.2018.
- Ian N. Gregory/Paul S. Ell (eds.), *Historical GIS. Technologies, Methodologies and Scholarship* (Cambridge 2007).
- Lynn Greiner, Putting Canada on the Map, URL: <<https://www.theglobeandmail.com/technology/putting-canada-on-the-map/article1092101/>>, 18.12.2018.
- Sam Griffiths, GIS and Research Into Historical “Spaces of Practice”: Overcoming the Epistemological Barriers, in: *History and GIS*, ed. Alexander von Lünen/Charles Travis (Dordrecht 2013) 153–171.
- Milica Grković, *Rečnik ličnih imena kod Srbije* (Beograd 1977).
- Id., *Imena u Dečanskim hrisovuljama* (Novi Sad 1983).
- Radoslav M. Grujić, Pološko-tetovska eparhija i manastir Lešak, in: *Glasnik Skopskog Naučnog Društva* 12 (1933) 33–77.
- Aron Jakovlevič Gurevič, Feudalismus před soudem historiků aneb o středověké „rolnické civilizaci“, in: *Dějiny – teorie – kritika* 1/2008 (2008) 7–38.
- Janin Hadlaw, The London Underground Map: Imagining Modern Time and Space, in: *Design Issues* 19/1 (Winter 2003) 25–35.
- Carl Hammer, *Huosiland: A Small Country in Carolingian Europe* (2018).
- Martin Hansson, *Aristocratic Landscape: The Spatial Ideology of the Medieval Aristocracy* (Lund Studies in Historical Archaeology 2, Malmö 2006).
- Id., The Medieval Aristocracy and the Social Use of Space, in: *Reflections: 50 Years of Medieval Archaeology, 1957–2007*, ed. Roberta Gilchrist/Andrew Reynolds (Leeds 2009) 435–452.
- Chico Harlan, Does MapQuest still exist? Yes, it does, and it's a profitable business, *The Washington Post* 2015, URL: <https://www.washingtonpost.com/business/economy/does-mapquest-still-exist-as-a-matter-of-fact-it-does/2015/05/22/995d2532-fa5d-11e4-a13c-193b1241d51a_story.html?noredirect=on&utm_term=.cd591eef76cf>, 02.10.2018.
- Günther Haseloff, *Email im frühen Mittelalter. Frühchristliche Kunst von der Spätantike bis zu den Karolingern* (Marburg 1990).
- Donald A. Heald Rare Books, Prints and Maps, URL: <<https://www.donaldheald.com/pages/books/20863/abraham-ortelius/theatrum-orbis-terrarum>>, 02.10.2018.
- Kilian Heck, *Genealogie als Monument und Argument. Der Beitrag dynastischer Wappen zur politischen Raumbildung der Neuzeit* (München 2002).

- Antonín Hejna, K metodice studia počátků knížecích a velmožských sídel v Čechách, in: *Archeologické rozhledy* 21 (1969) 535–546.
- Tomislav Hengl, Visualisation of Uncertainty Using the HSI Colour Model: Computations with Colours, in: *Proceedings of the 7th International Conference on GeoComputation*, University of Southampton, United Kingdom, 8–10 September 2003 (Southampton 2003), URL: <http://www.geocomputation.org/2003/Papers/Hengl_Paper.pdf>, 16.07.2018.
- Irmela Herzog, The Potential and Limits of Optimal Path Analysis, in: *Computational Approaches to Archaeological Spaces*, ed. Andrew Bevan/Mark Lake (Walnut Creek 2013) 179–211.
- Robert H. Hewsen, “Van in this World, Paradise in the next”. The Historical Geography of Van/Vaspurakan, in: *Armenian Van/Vaspurakan*, ed. Richard G. Hovannisian (Costa Mesa–CA 2000) 13–42.
- Ian Heywood, Geographic Information Systems in the Social Sciences, in: *Environment and Planning A: Economy and Space* 22/7 (1990) 849–854.
- Robert Higham/Philip Barker, *Timber Castles* (London 1992).
- Volker Hilberg, Silver Economies of the Ninth and Tenth Centuries AD in Hedeby, in: *Silver Economies, Monetisation and Society in Scandinavia, AD 800–1100*, ed. James Graham-Campbell/Søren Sindbæk/Gareth Williams (Aarhus 2011) 203–226.
- Friedrich Hild, Das byzantinische Straßensystem in Kappadokien (Veröffentlichungen der Kommission für die Tabula Imperii Byzantini 2, Wien 1977).
- Id., Karien in Portulanen und Portulankarten von der Antike bis in die frühosmanische Zeit (Veröffentlichungen zur Byzanzforschung 43, Wien 2019).
- Friedrich Hild/Marcell Restle, Kappadokien (Kappadokia, Charsianon, Sebasteia und Lykandos) (Tabula Imperii Byzantini 2, Wien 1981).
- Ian Hodder, *Entangled. An Archaeology of the Relationships between Humans and Things* (Chichester 2012).
- Id., *Studies in Human-Thing Entanglement* (2016) [URL: <<http://www.ian-hodder.com/books/studies-human-thing-entanglement>>, 27.08.2018].
- Meghan C. L. Howey/Marieka Brouwer Burg, Assessing the State of Archaeological GIS Research: Unbinding Analyses of Past Landscapes, in: *Journal of Archaeological Science* 84 (2017) 1–9.
- Vilém Hrubý, *Staré Město. Velkomoravské Pohřebiště “Na valách”* (Praha 1955).
- Id., *Staré Město. Velkomoravský Velehrad* (Monumenta archaeologica 14, Praha 1965).
- Krasimira Ilievska, Od toponimijata na Polog spored vladetelskite povelbi od XIII i XIV vek, in: *Bigorski naučno-kulturni sobiri. IV Naučen sobir: Polog niz vekovite* (Skopje 1980) 13–22.
- Neven Isailović, *Vladarske kancelarije u srednjovekovnoj Bosni* (manuscript of the Doctoral Thesis, Belgrade 2014).
- Jordan Ivanov, *Balgarski starini iz Makedonija* (Sofija 1970).

- Sergey A. Ivanov, *L'âge d'or de l'hagiographie byzantine*, in: *Proceedings of the 23rd International Congress of Byzantine Studies* (Belgrade 2016) 1–62.
- Pavle Ivić, *Balkan Slavic Migrations in the Light of South Slavic Dialectology*, in: *Aspects of the Balkans. Continuity and Change. Contributions to the International Balkan Conference held at UCLA, October 23–28, 1969*, ed. Henrik Birnbaum/Speros Vryonis (Berlin/Boston 1972) 66–86.
- David Jacoby, *An Unpublished Medieval Portolan of the Mediterranean in Minneapolis*, in: *Shipping, trade and crusade in the medieval Mediterranean. Studies in honour of John Pryor*, ed. Ruthy Gertwagen/Elizabeth Jeffreys (Farnham 2012) 65–83.
- Joachim Jahn, *Ducatus Baiuvariorum. Das bairische Herzogtum der Agilolfinger* (Monographien zur Geschichte des Mittelalters 35, Stuttgart 1991).
- Eva Jarmichová et al., *Human Impact on Open Temperate Woodlands during the Middle Holocene in Central Europe*, in: *Review of Palaeobotany and Palynology* 245 (2017) 55–68.
- Marija Janković, *Episkopije i mitropolije srpske crkve u srednjem veku* (Beograd 1985).
- Herbert Jankuhn, *Einführung in die Siedlungsarchäologie* (Berlin/New York 1977).
- Lutz Jansen/Thomas Otten/Bernd Päffgen, *Dorfarchäologie des Mittelalters und der Neuzeit in Elfen und Belmen. Die Ausgrabungen in der Pfarrkirche Sankt Georg und den Kölner Lehenshöfen* (Rheinische Ausgrabungen 68, Darmstadt 2014).
- Constantin Jireček, *Das Gesetzbuch des serbischen Caren Stephan Dušan*, in: *Archiv für slavische Philologie* 22 (1900) 144–214.
- Id., *Staat und Gesellschaft im Mittelalterlichen Serbien. Studien zur Kulturgeschichte des 13.–15. Jahrhunderts. I–IV* (Denkschriften der kaiserlichen Akademie der Wissenschaften in Wien, Philosophisch-Historische Klasse, Band 56, 58, 64, Wien 1912–1919, Fotomechanischer Nachdruck Leipzig 1974).
- Constantin Jireček/Jovan Radonjić, *Istorija Srba II* (Beograd 1952).
- Lynn Jones, *Between Islam and Byzantium. Aght'amar and the Visual Construction of Medieval Armenian Rulership* (Aldershot 2007).
- Sian Jones, *The Archaeology of Ethnicity: Constructing Identities in the Past and Present* (London/New York 1997).
- Reinhold Kaiser, *Bischofsherrschaft zwischen Königtum und Fürstenmacht. Studien zur bischöflichen Stadtherrschaft im westfranzösischen Reich im frühen und hohen Mittelalter* (Pariser historische Studien 17, Bonn 1981).
- Id., *Churrätien im frühen Mittelalter. Ende 5. bis Mitte 10. Jahrhundert* (Basel 2008).
- František Kalousek, *Velkomoravské pohřebiště u kostela: Břeclav-Pohansko. Archeologické prameny z pohřebiště* (Opera Universitatis Purkynianae Brunensis, Facultas Philosophica 169, Brno 1971).
- Tomáš Karel/Vilém Knoll, *Hrady na Chebsku jako reprezentanti moci*, in: *Castellologica Bohemica* 16 (2016) 153–178.

- Milan Kašanin, *Srpska književnost u srednjem veku* (Beograd 2002).
- Alexander P. Kazhdan, *Brebion*, in: *The Oxford Dictionary of Byzantium*. Volume 1, ed. Alexander P. Kazhdan/Alice-Mary Talbot/Anthony Cutler/Timothy E. Gregory (New York/Oxford 1991) 321.
- Julia Kelemen/Irene Oberleitner, *Fließende Grenzen. Lebensraum March-Thaya Auen* (Wien 1999).
- Lorenz Kemethmüller, *The History of the Castle Landscape in the German Spessart*, in: *Concilium medii aevi* 14 (2011) 93–99.
- Daniela Kern, *Der Oberleiserberg in der Bronzezeit*, in: *Beiträge zum Tag der Niederösterreichischen Landesarchäologie 2012*, ed. Ernst Lauermaun/Peter Trebsche (Asparn an der Zaya 2012) 34–39.
- Christoph Kinkeldey/Alan M. MacEachren/Jochen Schiewe, *How to Assess Visual Communication of Uncertainty? A Systematic Review of Geospatial Uncertainty Visualisation User Studies*, in: *The Cartographic Journal* 51, 4 (2014) 372–386.
- Zdenek Klanica, *Předveikomoravské pohřebiště v Dolních Dunajovicích. Příspěvek k otázce vzájemných vztahů Slovanů a Avarů v Podunají* (Vorgroßmährisches Gräberfeld in Dolní Dunajovice. Beitrag zur Frage über die gegenseitigen Beziehungen der Slawen und Awaren im Donaugebiet) (Stud. Arch. Ústavu u Českosl. Ak. Věd v Brno I/I, Brno 1972).
- Jan Klápště, *Paměť krajiny středověkého Mostecku* (Most 1994).
- Id., *Proměna českých zemí ve středověku* (Praha 2005).
- Ernst Klebel, *Die Ostgrenze des Karolingischen Reiches*, in: *Jahrbuch für Landeskunde von Niederösterreich* 21 (1928) 348–380.
- Anne Kelly Knowles, *GIS and History*, in: *Placing History. How Maps, Spatial Data, and GIS Are Changing Historical Scholarship*, ed. Anne Kelly Knowles/Amy Hillier (Redlands 2008) 1–25.
- Johannes Koder, *Überlegungen zu Konzept und Methode der „Tabula Imperii Byzantini“*, in: *Österreichische Osthefte* 20 (1978) 254–262.
- Id., *Προβλήματα της σλαβικής εποίκησης και τοπωνυμίας στη μεσαιωνική Ήπειρο*, in: *Epeirotika Chronika* 24 (1982) 9–35.
- Id., *Ein inschriftlicher Beleg zur „justinianischen“ Pest in Zora (Azra‘a)*, in: *STEPHANOS. Festschrift Vladimír Vavřínek = Byzantinoslavica* 66 (1995) 13–18.
- Id., *Perspektiven der Tabula Imperii Byzantini. Zu Planung, Inhalt und Methode*, in: *Geographia antiqua* 5 (1996) 75–86.
- Id., *Macedonians and Macedonia in Byzantine Spatial Thinking*, in: *Byzantine Macedonia. Identity, Image and History. Papers from the Melbourne Conference July 1995*, ed. John Burke/Roger Scott (*Byzantina Australiensia* 13, Melbourne 2000) 12–28.
- Id., *Historical Geography*, in: *XXe Congrès International des Études Byzantines, Pré-Actes I. Séances Plénières* (Paris 2001) 345–350.

- Id., *Der Lebensraum der Byzantiner. Historisch-geographischer Abriss ihres mittelalterlichen Staates im östlichen Mittelmeerraum* (Wien 2001).
- Id., *Land Use and Settlement: Theoretical Approaches*, in: *General Issues in the Study of Medieval Logistics: Sources, Problems and Methodologies*, ed. John F. Haldon (*History of Warfare* 36, Leiden/Boston 2006) 159–183.
- Id., *Überlegungen zur ländlichen Siedlungsterminologie der Byzantiner, insbesondere zu chorion, kome und verwandten Termini*, in: *Studies in honor of Professor Vassil Gjuzelev* (*Bulgaria Mediaevalis* 2, Sofia 2011) 3–14.
- Id., *Regional Networks in Asia Minor during the Middle Byzantine Period (Seventh-Eleventh Centuries). An Approach*, in: *Trade and Markets in Byzantium*, ed. Cécile Morrisson (*Dumbarton Oaks Byzantine symposia and colloquia*, Washington, D.C. 2012) 147–175.
- Id., 8.1. *Landschaft und Klima*, in: *Byzanz. Historisch-kulturwissenschaftliches Handbuch*, ed. Falko Daim (*Der neue Pauly, Supplementband* 11, Stuttgart 2016) 617–624.
- Id., 8.2. *Veränderungen der Umwelt*, in: *Byzanz. Historisch-kulturwissenschaftliches Handbuch*, ed. Falko Daim (*Der neue Pauly, Supplementband* 11, Stuttgart 2016) 624–628.
- Id., *Historical Geography*, in: *The Archaeology of Byzantine Anatolia. From Late Antiquity until the Coming of the Turks*, ed. Philipp Niewöhner (Oxford 2017) 9–27.
- Id., *Anmerkungen zum Awaren-Sgraffito von Sirmium. Mit einem archäologischen Kommentar von Reinhold Wedenig*, in: *Lebenswelten zwischen Archäologie und Geschichte. Festschrift für Falko Daim zu seinem 65. Geburtstag*, ed. Jörg Drauschke et al. (*Monographien des Römisch-Germanischen Zentralmuseums Mainz* 150, Mainz 2018) 733–740.
- Thomas Kohl, *Lokale Gesellschaften. Formen der Gemeinschaft in Bayern vom 8. bis zum 10. Jahrhundert* (*Mittelalter Forschungen* 29, Ostfildern 2010).
- Jan Kolář et al., *Archaeology and Historical Ecology: the Archaeological Database of the Longwood ERC Project*, in: *Archäologisches Korrespondenzblatt* 46 (2016) 539–554.
- Marija Koprivica, *Popovi i protopopovi Srpske crkve u srednjem veku* (Niš 2012).
- Id., *Polog pod srpskom vlašću u srednjem veku (istorijsko-geografski pregled)*, in: *Sopomenica akademika Miloša Blagojevića (1930–2012)*, ed. Siniša Mišić/Jelena Mrgić (Beograd 2015) 65–93.
- Dušan Korać, *Povelja kralja Stefana Dušana manastiru Svete Bogorodice u Tetovu. Prilog srpskoj diplomatici i sfragistici*, in: *Zbornik radova Vizantološkog instituta* 23 (1984) 141–165.
- Marija Korobar-Velčeva, *Antroponimite vo popisot na imotite na Htetovskioj manastir od 1343 godina*, in: *Zbornik referata i materijala v jugoslovenske onomastičke konferencije* (Posebna izdanja knjiga 52, Odjeljenje društvenih nauka knjiga 13, Akademija nauka i umjetnosti Bosne i Hercegovine, Sarajevo 1985) 267–271.

- Bernhard Koschicek/Mihailo St. Popović/Vratislav Zervan, *Memories are Made of This: Tracing Ambulant Rulers, Local Elites and Shifting Borders in Byzantine Macedonia (1282–1355)*, in: Edited Volume in Honor of Predrag Matejić, Columbus, OH [in press].
- Desanka Kovačević-Kojić, Katun, in: *Leksikon srpskog srednjeg veka*, ed. Sima Ćirković/Rade Mihaljčić (Beograd 1999) 286–287.
- Id., Stan, in: *Leksikon srpskog srednjeg veka*, ed. Sima Ćirković/Rade Mihaljčić (Beograd 1999) 696.
- Daniel Kovář, Panská sídla nejnižší kvalitativní úrovně v raném novověku na Českobudějovicku, in: *Catellologica bohemia* 12 (2010) 55–68.
- Adelheid Krah, Die Handschrift des Cozroh. Einblicke in die kopiale Überlieferung der verlorenen ältesten Archivbestände des Hochstifts Freising, in: *Archivalische Zeitschrift* 89 (2007) 407–431.
- Vassiliki Kravari, *Villes et villages de Macédoine occidentale* (Paris 1989).
- Id., L'habitat rural en Macédoine occidentale (XIII^e–XIV^e siècles), in: *Byzanz als Raum. Zu Methoden und Inhalten der historischen Geographie des östlichen Mittelmeerraumes*, ed. Klaus Belke/Friedrich Hild/Johannes Koder/Peter Soustal (Veröffentlichungen der Kommission für die Tabula Imperii Byzantini 7, Wien 2000) 83–94.
- Karel Kriz, Maps and Design – Influence of Depiction, Space and Aesthetics on Geocommunication, in: *Understanding Different Geographies*, ed. Karel Kriz/William Cartwright/Michaela Kinberger (Berlin 2013) 9–24.
- Karel Kriz/Alexander Pucher/Markus Breier, Digitizing Patterns of Power – Cartographic Communication for Digital Humanities, in: *Proceedings of the International Cartographic Association 1* (2017) 1–5 [doi: 10.5194/ica-proc-1-62-2018].
- Karel Kriz/Alexander Pucher/Michaela Kinberger/David Schobesberger, Mapping Cultural History of the Western Himalayas, in: *Proceedings of 24th International Cartographic Conference*, URL: <http://www.mountaincartography.org/publications/papers/ica_cmc_sessions/6_Santiago_Session_Mountain_Carto/santiago_kriz.pdf>, 03.10.2018.
- Jiří Kubeš, Vývoj obytné jednotky v sídlech vyšší šlechty z českých zemí (1550–1750), in: *Svorník* 6 (2008) 79–90.
- Karel Kuča, CZ_RETRO: Retrospektivní sídelní databáze a geografický informační systém Čech, Moravy a Slezska. Uživatelská příručka (Praha 2017).
- Andreas Külzer, *Ostthrakien (Eurōpē)* (Tabula Imperii Byzantini 12, Wien 2008).
- Id., Möglichkeiten zur Rekonstruktion historischer Landschaften: Die Historische Geographie, in: *Fragmente. Der Umgang mit lückenhafter Quellenüberlieferung in der Mittelalterforschung*, ed. Christian Gastgeber/Christine Glassner/Kornelia Holzner-Tobisch/Renate Spreitzer (Wien 2010) 173–184.
- Martin Kuna, Burial Mounds in the Landscape, in: *Archaeology of Burial Mounds*, ed. Ladislav Šmejda (Pilsen 2006) 83–97.
- Martin Kuna/Alžběta Danielisová, Geomorfometrie a analýza reliéfu v archeologii, in: *Živá archeologie* 10 (2009) 1–5.

- Martin Kuna/Dana Adelsbergerová, Prehistoric Location Preferences: an Application of GIS to the Vinořský potok Project, Bohemia, the Czech Republic, in: *Archaeology and Geographical Information Systems: A European Perspective*, ed. Gary Lock/Zoran Stančič (London 1995) 117–131.
- Ernst Robert Kurcijus, *Evropska književnost i latinski srednji vek* (Beograd 1996).
- Christian Lackner, Adel und Studium – Adelige Studenten aus den habsburgischen Ländern an der Universität Wien im 15. Jahrhundert, in: *Heide Dienst zum 65. Geburtstag*, ed. Anton Eggendorfer (St. Pölten 2004) 71–92.
- Angeliki E. Laiou-Thomadakis, *Peasant Society in the Late Byzantine Empire. A Social and Demographic Study* (Princeton–New Jersey 1977).
- Geoffrey W. H. Lampe, *A Patristic Greek Lexicon* (Oxford 1961).
- Michel Lauwers, Territorium non facere diocesim ... Conflits, limites et représentation territoriale du diocèse (V^e–XIII^e siècle), in: *L'espace du diocèse: Genèse d'un territoire dans l'Occident médiéval*, ed. Florian Mazel (Rennes 2008) 23–65.
- Filip Laval, Fragen nach der Erkennung von Festen in der tschechischen Archäologie: kurzer Überblick, nebulöser Ausblick, in: *Tradition – Umgestaltung – Innovation: Transformationsprozesse im Hohen Mittelalter*, ed. Eike Gringmuth-Dallmer/Jan Klápště/Jan Hasil (Praehistorica 31/2, Prag 2014).
- Id., Co je kostel? K počátkům šlechtických sídel českého středověku, in: *Archeologické rozhledy* 68 (2016) 47–90.
- Georgios A. Lebeniotes, Η πολιτική κατάρρευση του Βυζαντίου στην Ανατολή. Το ανατολικό σύνολο και η κεντρική Μικρά Ασία κατά το β' ήμισυ του 11ου αι (Thessalonica 2007).
- Václav Ledvinka, Rozmach feudálního velkostatku, jeho strukturální proměny a role v ekonomice Českých zemí v předbělohorském období, in: *Folia Historica Bohemica* 11 (1987) 103–132.
- Jacques Lefort et al. (eds.), *Géométries du fisc byzantin* (Réalités byzantines 4, Paris 1991).
- Alexander Lenger/Christian Schneickert/Florian Schuhmacher, Pierre Bourdieus Konzept des Habitus, in: *Pierre Bourdieus Konzeption des Habitus: Grundlagen, Zugänge, Forschungsperspektiven*, ed. Alexander Lenger/Christian Schneickert/Florian Schumacher (Wiesbaden 2013) 13–41.
- Archimandrit Leonid, Hrisovulja Cara Stefana, data u Skoplju 1347 godine, iz crkvenog i državnog sabora, koji bijaše skupljen u to doba, a kojom se osniva episkopska stolica u manastiru Ljesnovskom, in: *Glasnik Srpskog Učenog Društva* 10 (27) (1870) 287–296.
- Judith E. Lenzinger, *Philologische Untersuchungen mittellateinsicher Vers-Epitaphien mit ausgewählten Beispielen aus römischen Kirchen* (Doctoral Thesis, Wien 1994).
- Martijn van Leusen, *Pattern to Process: Methodological Investigations into the Formation and Interpretation of Spatial Patterns in Archaeological Landscapes* (Utrecht 2002).
- Carenza Lewis, Test pit excavation within occupied settlements in East Anglia in 2013, in: *Medieval Settlement Research Group Annual Report* 29 (2014) 78–89.

- Lexikon zur byzantinischen Gräzität besonders des 9.–12. Jahrhunderts, ed. Erich Trapp et al. 1. Band A–K (Wien 2001).
- Lexikon zur byzantinischen Gräzität besonders des 9.–12. Jahrhunderts. ed. Erich Trapp et al. 2. Band Λ–Ω, 1. Teil (λ- προσπελαγίζω) (Wien 2017).
- Library of Congress, Ortelius Atlas, URL: <<https://www.loc.gov/collections/general-maps/articles-and-essays/general-atlases/ortelius-atlas/>>, 02.10.2018.
- Library of Congress, Theatrum orbis terrarum, URL: <<https://www.loc.gov/item/2003683482/>>, 02.10.2018.
- Robert Liddiard (ed.), *Late Medieval Castles* (Woodbridge 2016).
- Dmitrij S. Lihačov, *Poetika stare ruske književnosti* (Beograd 1972).
- Thomas Litt et al., A 600,000 Year Long Continental Pollen Record from Lake Van, Eastern Anatolia (Turkey), in: *Quaternary Science Reviews* 104 (2014) 30–41.
- Marcos Llobera, Building Past Landscape Perception with GIS: Understanding Topographic Prominence, in: *Journal of Archaeological Science* 28 (2001) 1005–1014.
- Id., Extending GIS-based Visual Analysis: the Concept of Visualscapes, in: *International Journal of Geographical Information Science* 17 (2003) 25–48.
- Marcos Llobera et al., Order in Movement: a GIS Approach to Accessibility, in: *Journal of Archaeological Science* 38 (2011) 843–851.
- Gary Lock/John Pouncett, Spatial Thinking in Archaeology: Is GIS the Answer?, in: *Journal of Archaeological Science* 84 (2017) 129–135.
- Aleksandar Loma, *Toponimija Banjske hrisovulje. Ka osmišljenju starosrpskog toponomastičkog rečnika i boljem poznavanju opšteslovenskih imenoslovnih obrazaca* (Beograd 2013).
- Paul Longley, *Geographic Information Systems & Science* (Hoboken–New Jersey 2011).
- Andrew G. Lowerre, A GIS Analysis of the Location of Late-Eleventh-Century Castles in the Southeastern Midlands of England, in: *Digital Discovery. Exploring New Frontiers in Human Heritage*, ed. Jeffrey T. Clark/Emily M. Hagemeister (CAA2006, Budapest 2007) 239–252.
- Id., Why Here and Not There? The Location of Early Norman Castles in the South-Eastern Midlands, in: *Proceedings of the Battle Conference 2006*, ed. Christopher P. Lewis (Anglo-Norman Studies 29, Woodbridge 2008) 121–144.
- Alexander Lünen/Charles Travis (eds.), *History and GIS. Epistemologies, Considerations and Reflections*, (Dordrecht 2013).
- Axel Lungershausen, *Buntmetallfunde und Handwerk des Mittelalters und der frühen Neuzeit aus archäologischen Untersuchungen in Braunschweig (Materialhefte zur Ur- und Frühgeschichte Niedersachsens Band 34, Rahden Westfalen 2004).*
- Alan M. MacEachren, Visualizing Uncertain Information, in: *Cartographic Perspectives* 13 (1992) 10–19.
- Id., *How Maps Work: Representation, Visualization, and Design* (New York 1995).

- Alan M. MacEachren/Anthony Robinson/Susan Hopper/Steven Gardner/Robert Murray/Mark Gahegan/Elisabeth Hetzler, Visualizing Geospatial Information Uncertainty: What We Know and What We Need to Know, in: *Cartography and Geographic Information Science* 32, 3 (2005) 139–160.
- Alan M. MacEachren/Robert E. Roth/James O'Brien/Bonan Li/Derek Swingley/Mark Gahegan, Visual Semiotics & Uncertainty Visualization: An Empirical Study, in: *IEEE transactions on visualization and computer graphics* 18,12 (2012) 2496–2505.
- Jiří Macháček, Pohansko bei Břeclav. Ein frühmittelalterliches Zentrum als sozialwirtschaftliches System (Studien zur Archäologie Europas 5, Bonn 2007).
- Id., Disputes over Great Moravia: Chiefdom or State? The Morava or the Tisza River?, in: *Early Medieval Europa* 17/3 (2009) 248–267.
- Id., Fünfzig Jahre archäologische Ausgrabungen in Pohansko bei Břeclav, in: *Frühgeschichtliche Zentralorte in Mitteleuropa. Internationale Konferenz und Kolleg der Alexander-von-Humboldt-Stiftung zum 50. Jahrestag des Beginns archäologischer Ausgrabungen in Pohansko bei Břeclav, 5.–9.10.2009, Břeclav, Tschechische Republik.* ed. Jiří Macháček/Šimon Ungermann (Studien zur Archäologie Europas 14, Bonn 2011) 15–33.
- Id., Great Moravian Central Places and their Practical Function, Social Significance and Symbolic Meaning, in: *Zentrale Orte und Zentrale Räume des Frühmittelalters in Süddeutschland (RGZM Tagungen 18, Mainz 2013)* 235–248.
- Id., Klappwaagen, Gewichte und Münzen. Eine Studie zum mährischen-niederösterreichischen Grenzraum im frühen Mittelalter, in: *Stadt – Land – Burg. Festschrift für Sabine Felgenhauer-Schmiedt zum 70. Geburtstag*, ed. Claudia Theune/Gabriele Scharer-Liška/Elfriede H. Huber/Thomas Kührtreiber (Studia Honoraria 34, Rahden/Westfalen 2013) 365–376.
- Jiří Macháček/Nela Doláková/Petr Dresler/Pavel Havlíček/Šárka Hladilová/Antonín Přichystal/Alena Roszková/Libuše Smolíková, Raně středověké centrum na Pohansku u Břeclavi a jeho přírodní prostředí, in: *Archeologické rozhledy* 59 (2007) 278–314.
- Jiří Macháček/Jan Videman, Monetisation of Early Medieval Moravia in the Light of New Archaeological Discoveries in the Lower Dyje Region (Czech Republic), in: *Economies, Monetisation and Society in the West Slavic Lands 800–1200 AD*, ed. Mateusz Bogucki/Marian Rębkowski (Wolińskie Spotkania Mediewistyczne II, Szczecin 2013) 177–201.
- Jiří Macháček/Adéla Balcárková/Petr Dresler/Peter Milo, Archeologický výzkum raně středověkého sídliště Kostice – Zadní hrúd v letech 2009–2011, in: *Archeologické rozhledy* (2013) 735–775.
- Jiří Macháček/Petr Dresler/Ernst Lauermann/Peter Milo/Friedel Stratjel, Das neu entdeckte Hügelgrab in Bernhardsthal/Föhrenwald-Pfoarwiesn im Kontext der archäologischen Forschung am Zusammenfluss von March und Thaya, in: *Beiträge zum Tag der Niederösterreichischen Landesarchäologie*, ed. Ernst Lauermann/Peter Trebsche (Asparn an der Zaya 2013) 76–80.

- Alexandru Madgearu, Vlach Military Units in the Byzantine Army, in: Samuel's State and Byzantium: History, Legend. Tradition. Heritage (Proceedings of the International Symposium "Days of Justinian I", Skopje, 17–18 October 2014), ed. Mitko B. Panov (Skopje 2015) 47–55.
- Ljubomir Maksimović, The Byzantine Provincial Administration under the Palaiologoi (Amsterdam 1988).
- Id., Das Kanzleiwesen der serbischen Herrscher, in: Kanzleiwesen und Kanzleisprachen im östlichen Europa, ed. Christian Hannick (Archiv für Diplomatik, Schriftgeschichte, Siegel- und Wappenkunde, Beiheft 6, Köln/Weimar/Wien 1999) 25–54.
- Phaidon Malinkudes, Σλάβοι στη Μεσαιωνική Ελλάδα (Thessalonike 2013).
- Vasilije Marković, Pravoslavno monaštvo i manastiri u srednjevekovnoj Srbiji (Sremski Karlovci 1920).
- Doris Marth, Der sogenannte „Antiquus Austriacus“ und weitere auctores antiquissimi. Zur ältesten Überlieferung römischer Inschriften im österreichischen Raum (Wien 2016).
- James R. Mathieu, New Methods on Old Castles: Generating New Ways of Seeing, in: Medieval Archaeology 43 (1999) 115–142.
- M. Matic, Ikona apostola Petra i Pavla u Vatikanu, in: Zograf II (1967) 11–16.
- Florian Mazel, Introduction, in: L'espace du diocèse: Genèse d'un territoire dans l'Occident médiéval, ed. Florian Mazel (Rennes 2008) 11–21.
- Id., L'Évêque et le territoire. L'invention médiévale de l'espace (V^e–XIII^e siècle) (Paris 2016).
- John Kennington McCarthy, Castles in Space. An Exploration of the Space in and around the Tower Houses of South-East Kilkenny (Master Thesis, Belfast 2007).
- Rosamond McKitterick, Geschichte und Memoria im Frühmittelalter, in: Bücher des Lebens – Lebendige Bücher, ed. Peter Erhart/Jakob Kuratli Hübli (St. Gallen 2010) 13–30.
- Lisa Karen McManama-Kearin, The Use of GIS in Determining the Role of Visibility in the Siting of Early Anglo-Norman Stone Castles in Ireland (Oxford 2013).
- Petr Meduna, Curia Radonice – výjimka nebo pravidlo? Stručné zamyšlení nad knížecími dvory v raném středověku, in: Vladislav II., druhý král z Přemyslova rodu, ed. Michal Mašek/Petr Sommer/Josef Žemlička et al. (Praha 2009) 203–211.
- Dobroslava Menclová, České hrady (Praha 1976).
- Zdeněk Měřínský/Eva Zumpfe, Die süd-mährische Grenze – verbindend und trennend (Thesen), in: Archaeologia historica 29/04 (2004) 77–92.
- Outi Merisalo/Päivi Pahta, Frontiers in the Middle Ages. Proceedings of the Third European Congress of Medieval Studies (Jyväskylä, 10–14 June 2003) (Textes et études du Moyen Âge 35, Louvain-la-Neuve 2006).

- Werner Meyer, Die Burg als repräsentatives Statussymbol. Ein Beitrag zum Verständnis des mittelalterlichen Burgenbaues, in: Zeitschrift für Schweizerische Archäologie und Kunstgeschichte 33 (1976) 173–181.
- Rade Mihaljević, Arbanas, in: Leksikon srpskog srenjeg veka, ed. Sima Ćirković/Rade Mihaljević (Beograd 1999).
- Id., Hrisovulja cara Uroša melničkom mitropolitu Kirilu, in: Stari srpski arhiv 2 (2003) 85–97.
- Ivan Mikulčik, Srednovekovni gradovi i tvrdini vo Makedonija (Skopje 1996).
- Jiří Militký, Die Fundmünzen vom Oberleiserberg, in: Beiträge zum Tag der Niederösterreichischen Landesarchäologie 2012, ed. Ernst Lauermaun/Peter Trebsche (Asparn an der Zaya 2012) 49–55.
- Jiří Militký/Hubert Emmerig, Funde frühmittelalterlicher Münzen vom Oberleiserberg (Niederösterreich) (Numismatický sborník (2014) 28, 2016) 205–221.
- Peter Milo, Frühmittelalterliche Siedlungen in Mitteleuropa. Eine vergleichende Strukturanalyse durch Archäologie und Geophysik (Studien zur Archäologie Europas 21, Bonn 2014).
- Siniša Mišić/Tatjana Subotin-Golubović, Svetoarhandjelovska hrisovulja (Izvori za srpsku istoriju 3, Beograd 2003) 85–114.
- Siniša Mišić, Hrisovulja cara Stefana Dušana o osnivanju Zletovske episkopije, in: Stari srpski arhiv 13 (2014) 181–206.
- Siniša Mišić/Marija Koprivica, Opšta hrisovulja cara Stefana Dušana Hilandaru, in: Stari srpski arhiv 14 (2015) 65–106.
- Herbert Mitscha-Märheim, Oberleiserberg, in: Fundberichte aus Österreich 1, 1920/33 (1930–1934) 41–78.
- Id., Der Oberleiserberg und seine Bedeutung als Siedlungsplatz im Laufe der Jahrtausende. Ergebnisse der Ausgrabungen (Ebendorf 1937).
- Id., Oberleis, Niederleis, von der Urzeit zum Mittelalter, in: Jahrbuch für Landeskunde von Niederösterreich 32 (1955–56) 25–47.
- Herbert Mitscha-Märheim/Ernst Nischer-Falkenhof, Der Oberleiserberg. Ein Zentrum vor- und frühgeschichtlicher Besiedlung (Mitteilungen der prähistorischen Kommission der Akademie der Wissenschaften Band 2, Nummer 5, Wien 1929).
- Cécile Morrisson, Trading in Wood in Byzantium. Exchange and Regulations, in: Trade in Byzantium. Papers from the 3rd International Sevgi Gönül Byzantine Studies Symposium, ed. Paul Magdalino/Nevra Necipoğlu/Ivana Jeftić (Istanbul 2016) 105–127.
- Vladimir Alekseevič Mošin, Spomenici za srednovekovnata i ponovata istorija na Makedonija (Arhiv na Makedonija, Skopje 1975).
- František Musil, Úvod do kastelologie (Hradec Králové 2006).
- Evžen Neustupný, Metoda archeologie (Plzeň 2007).
- Id., Teorie archeologie (Plzeň 2010).

- Violaine Nicolas/Frédéric Surmely/Yannick Miras, L'évolution des paysages et des architectures sur la planèze sud du Plomb du Cantal du XI^e au XIX^e siècle: apport des données archéologiques, paléoenvironnementales et archivistiques, in: *Le paysage rural au Moyen Âge. Collection Actes des congrès des sociétés historiques et scientifiques*, ed. Christian Guilleré (Paris 2012) 79–105.
- Milica Nikolić, Vlastelinstvo Svete Bogorodice na Ljeviši, in: *Istorijski časopis* 23 (1976) 39–50.
- Aleksandar Nikolov, Vtoroto blgarsko carstvo i vlaho-blgarskite dilemi, in: *Velikite Ase-nevci: Sbornik s dokladi ot konferencija, posvetena na 830 godini od vstanieto na brat-jata Petar i Asen, načaloto na vtoroto blgarsko carstvo i objavjavanjeto na Trnovo za stolica na Blgarija i 780 godini ot legitimnoto vzobnovjavane na Blgarskata patrijaršija* (Veliko Trnovo 2016) 100–106.
- Ernst Nischer-Falkenhof/Herbert Mitscha-Märheim, Die römische Station bei Niederleis und abschließende Untersuchungen auf dem Oberleiserberge (Mitteilungen der prähistorischen Kommission der Akademie der Wissenschaften 6, Band 2, Wien 1931).
- Ernst Nischer-Falkenhof/Herbert Mitscha-Märheim, Oberleiserberg, in: *Fundberichte aus Österreich* 2, 1934/37 (1935–1938) 61–106.
- Rudolf Noll, Ein Ziegel als sprechendes Zeugnis einer historischen Katastrophe. Zum Untergang Sirmiums 582 n. Chr. (*Anzeiger der philosophisch-historischen Klasse der Österreichischen Akademie der Wissenschaften* 126, Wien 1989) 139–154.
- William Norton, *Historical Analysis in Geography* (London/New York 1984).
- Stojan Novaković, *Zakonski spomenici srpskih država srednjega veka* (Beograd 1912).
- David Novák, Drobná vrchnostenská sídla 13.–17. století v kontextu krajiny Křivoklátska a širšího okolí, in: *Archaeologia Historica* 38 (2013) 463–489.
- Id., From Single Feature to Settlement Pattern, Landscape and Society: a Methodological Approach to Castellological Research, in: *Student Archaeology in Europe*, ed. Petr Křišťuf/David Novák/Peter Tóth/Dagmar Vokounová Franzeová (Pilsen 2014) 134–143.
- Id., České „tvrze“. Kritická analýza současného stavu poznání, in: *Castellologica Bohe-mica* 16 (2016) 123–152.
- Id., Drobná vrchnostenská sídla a vrchnostenské dvory 13.–17. století (Doctoral Thesis, Plzeň 2018).
- Id., Wykorzystanie ALS do zautomatyzowanej analizy krajobrazu, in: *Lotnicze skanowanie laserowe jako narzędzie archeologii*, ed. Martin Gojda/Zbigniew Kobyliński (*Archaeologica Hereditas* 11, Warszawa 2018) 69–84.
- Stojan Novaković, Vizantijski činovi i titule u srpskim zemljama XI–XV veka, in: *Glas srpske kraljevske akademije* 78 (1908) 178–279.
- Elisabeth Novotny, Thunau am Kamp: Das frühmittelalterliche Gräberfeld auf der Oberen Holzweise (Mitteilungen der Prähistorischen Kommission 86, Wien 2018).
- Peter Nowotny, Vereinödung im Allgäu und angrenzenden Gebieten (*Allgäuer Heimatbücher* 82, Kempten 1984).

- Martin Obenaus, Ostösterreich – ein Grenzraum im 9. und 10. Jahrhundert aus archäologischer Sicht, in: *Im Schnittpunkt frühmittelalterlicher Kulturen. Niederösterreich an der Wende vom 9. zum 10. Jahrhundert*, ed. Roman Zehetmayer (NÖLA – Mitteilungen aus dem Niederösterreichischen Landesarchiv 13, St. Pölten 2008) 194–217.
- Georgije Ostrogorski, *Serska oblast posle Dušanove smrti* (Beograd 1965).
- Alex Pang, Visualizing Uncertainty in Geo-spatial Data, in: *Proceedings of the Workshop on the Intersections between Geospatial Information and Information Technology* (Washington, D.C. 2001) 1–14.
- Tom Patterson, Designing 3D Landscapes, in: *Multimedia Cartography*, ed. William E. Cartwright/Michael P. Peterson/Georg Gartner (Heidelberg 1999) 217–230.
- Steffen Patzold, Den Raum der Diözese modellieren? Zum Eigenkirchen-Konzept und zu den Grenzen der potestas episcopalis im Karolingerreich, in: *Les élites et leurs espaces: mobilité, rayonnement, domination (du VI^e au XI^e siècle)*, ed. Philippe Depreux/François Bougard/Régine Le Jan (Turnhout 2007) 225–245.
- Id., Episcopus: Wissen über Bischöfe im Frankreich des späten 8. bis frühen 10. Jahrhunderts (Mittelalter-Forschungen 25, Ostfildern 2008).
- Andrew C. S. Peacock, Nomadic Society and the Seljuk Campaigns in Caucasia, in: *Iran and the Caucasus* 9 (2005) 205–230.
- Donka Petkanova, *Raznolikoto srednovekovie* (Veliko Tŕrnovo 2006).
- Vladimir R. Petković, Pregled crkvenih spomenika kroz povescnicu srpskog naroda (Srpska Akademija Nauka, Posebna Izdanja, Knjiga 157, Odeljenje društvenih nauka, Nova Serija, Knjiga 4, Beograd 1950).
- Michal Petr, Geografická a archeologicko-prostorová data z Rakouska a možnosti jejich využití (Geographical and archaeological-spatial data from Austria and its possible application), in: *Počítačová podpora v archeologii II*, ed. Jiří Macháček (Brno/Praha/Plzeň 2008) 170–180.
- Boban Petrovski, Manastirski imoti vo srednovekovem Polog, in: *Godišen zbornik na Filozofski Fakultet vo Skopje* 59 (2006) 281–301.
- Id., Lokalnata vlast vo srednovekovnata župa Polog: pretstavnici i nivni ingerencii, in: *Godišen zbornik na Filozofski Fakultet vo Skopje* 62 (2009) 275–289.
- Id., Local roads in Medieval Polog: the Written Sources, in: *Folia archaeologica Balkanica* 2 (2011) 463–469.
- Id., Intertwined Legal System: Church Authorities versus Local Feudal Landlords (in Central-Southern Europe), in: *Imago temporis. Medium Aevum* 8 (2014) 193–210.
- Id., *Srednovekovni naselbi i patišta vo Polog – pišani izvori* (Skopje 2015).
- Armando Petrucci, *Writing the Dead. Death and Writing Strategies in the Western Tradition* (Stanford, CA 1998).
- Knut Petzold, *Soziologische Theorien in der Archäologie. Konzepte, Probleme, Möglichkeiten* (Saarbrücken 2007).

- Édith Peytremann, *Archéologie de l'habitat rural dans le nord de la France du IV^e au XII^e siècle* (Association française d'Archéologie mérovingienne 13, Saint-Germain-en-Laye 2003).
- Barbara Piatti/Hans Rudolf Bär/Anne-Kathrin Reuschel/Lorenz Hurni/William E. Cartwright, *Mapping Literature: Towards a Geography of Fiction*, in: *Cartography and Art*, ed. William E. Cartwright/Georg Gartner/Antje Lehn (Berlin/Heidelberg 1999).
- Eric Piltz, „Trägheit des Raums“. Fernand Braudel und die Spatial Stories der Geschichtswissenschaft, in: *Spatial Turn. Das Raumparadigma in den Kultur- und Sozialwissenschaften*, ed. Jörg Döring/Tristan Thielmann (Bielefeld 2008).
- Srdjan Pirivatrić, Hronologija prvih vladarskih akata kralja Milutina izdatih posle osvajanja Skoplja, in: *ΠΕΡΙΒΟΛΟΣ – Mélanges offerts à Mirjana Živojinović*, Tome I, ed. Dejan Dželebdžić/Bojan Miljković (Beograd 2015) 205–213.
- Richard Pittioni, Frühgeschichtliche Brandgräber in den March-Thaya-Auen, in: *Germania* 18 (1934) 130–133.
- Miroslav Plaček/Miroslav Dejmal et al., *Veselí nad Moravou: středověký hrad v říční nivě* (Brno 2015).
- Colin Platt, Revisionism in Castle Studies: a Caution, in: *Medieval Archaeology* 51 (2007) 83–102.
- Marie von Plazer, *Traunkirchen – Aussee. Historische Wanderungen* (Graz 1907).
- Cornelia Plieger, *Repräsentation und Memoria – Conrad Celtis und sein Epitaph im Wiener Stephansdom*, in: *Wissenschaft und Kultur an der Zeitenwende. Renaissance-Humanismus, Naturwissenschaften und universitärer Alltag im 15. und 16. Jahrhundert*, ed. Helmuth Grössing/Kurt Mühlberger (Schriften des Archivs der Universität Wien, Band 15, Wien 2015) 183–206.
- Aleks Pluskowski, *The Archaeology of the Prussian Crusade: Holy War and Colonisation* (London 2012).
- Walter Pohl/Helmut Reimitz, *Grenze und Differenz im frühen Mittelalter* (Forschungen zur Geschichte des Mittelalters 1, Wien 2000).
- Walter Pohl/Ian Wood/Helmut Reimitz, *The Transformation of Frontiers. From Late Antiquity to the Carolingians* (The Transformation of the Roman World 10, Leiden/Boston/Köln 2001).
- Walter Pohl/Mathias Mehofer (eds.), *Archaeology of Identity – Archäologie der Identität* (Forschungen zur Geschichte des Mittelalters 17, Wien 2010).
- Lumir Poláček, Zum Stand der siedlungsarchäologischen Forschung in Mikulčice, in: *Frühmittelalterliche Machtzentren in Mitteleuropa. Mehrjährige Grabungen und ihre Auswertung*, ed. Čeněk Staňa/Lumir Poláček (Internationale Tagungen in Mikulčice 3, Brno 1996) 213–260.
- Id., Art. Großmährisches Reich, in: *Reallexikon der Germanischen Altertumskunde* 13 (Berlin/New York 1999) 78–85.

- Id., Die Rolle der süd-mährischen Flüsse in der Geschichte Großmährens, in: Siedlung, Kommunikation und Wirtschaft im westslawischen Raum, ed. Felix Biermann/Thomas Kersting (Beiträge zur Ur- und Frühgeschichte Mitteleuropas 46, Langenwiesbach 2007) 67–78.
- Id., Mikulčice und Awaren. Zur Interpretation „awarischer Funde“ von Mikulčice, in: Kulturwandel im Mitteleuropa. Langobarden – Awaren – Slawen. Akten der Internationalen Tagung in Bonn vom 25. bis 28. Februar 2008 (Kolloquien zur Vor- und Frühgeschichte 11, Bonn 2008).
- Veronika Polloczek, Edition der neulateinischen Epitaphien in der Familienchronik (1526) des Hans Herzheimer III. (Master Thesis, Wien 2017).
- Ćorgi Pop-Atanasov/Ilija VeleV/Maja Jakimovska Tošić, Skriptorski centri vo srednovekovna Makedonija (Skopje 1997).
- Mihailo St. Popović, „Sie befahl, im ganzen Land Töchter armer Eltern zu sammeln ...“. Zur Vorbildwirkung der Stiftertätigkeit der serbischen Königin Jelena (†1314) in: *The-tis. Mannheimer Beiträge zur Klassischen Archäologie und Geschichte Griechenlands und Zyperns*, Band 15 (2008) 77–81.
- Id., The Project *Tabula Imperii Byzantini* (TIB) of the Austrian Academy of Sciences, in: *Ostkirchliche Studien* 58/2 (2009) 267–272.
- Id., Mapping Byzantium – The Project “Macedonia, Northern Part” in the Series *Tabula Imperii Byzantini* (TIB) of the Austrian Academy of Sciences, in: *Mapping Different Geographies*, ed. Karel Kriz/William Cartwright/Lorenz Hurni (Berlin/Heidelberg 2010) 219–234.
- Id., Are the Historical Geography of the Byzantine Empire and Digital Humanities a Contradiction Per Se?, in: *Bulgaria Mediaevalis* 3 (2012) 255–269.
- Id., Spätbyzantinische Siedlungen und vlachische Transhumanz in den Flusstälern der Strumica und Kriva Lakavica, in: *Südosteuropäische Romania: Siedlungs-/Migrationsgeschichte und Sprachtypologie. Romanistisches Kolloquium XXV* (Tübinger Beiträge zur Linguistik 532, Tübingen 2012) 227–240.
- Id., Historische Geographie und Digital Humanities. Eine Fallstudie zum spätbyzantinischen und osmanischen Makedonien (Peleus, Studien zur Archäologie und Geschichte Griechenlands und Zyperns 61, Mainz/Ruhpolding 2014).
- Id., Das Kloster Hilandar und seine Weidewirtschaft in der historischen Landschaft Mazedonien im 14. Jahrhundert, in: *ΠΕΡΙΒΟΛΟΣ – Mélanges offerts à Mirjana Živojinović*, Tome I, ed. Dejan Dželebdžić/Bojan Miljković (Beograd 2015) 215–225.
- Id., Vlachen in der historischen Landschaft Mazedonien im Spätmittelalter und in der Frühen Neuzeit, in: *Walchen, Romani und Latini. Variationen einer nachrömischen Gruppenbezeichnung zwischen Britannien und dem Balkan* (Forschungen zur Geschichte des Mittelalters 21, Wien 2017) 183–196.
- Mihailo St. Popović/Juilson J. Jubanski, On the Function of “Least-Cost Path” Calculations within the Project *Tabula Imperii Byzantini* (TIB) of the Austrian Academy of Sci-

- ences: a Case Study on the Route Melnik-Zlatolist (Bulgaria), in: *Anzeiger der philosophisch-historischen Klasse der Österreichischen Akademie der Wissenschaften*, 145. Jahrgang/2. Halbband (2010) 55–87.
- Mihailo St. Popović/Markus Breier, Tracing Byzantine Routes – Medieval Road Networks in the Historical Region of Macedonia and Their Reconstruction by Least-Cost Paths, in: *Proceedings of the “16th International Conference on Cultural Heritage and New Technologies”* (Wien 2011) 464–475.
- Mihailo St. Popović/Bogdan Šandric, Transfer of (Historical) Geographic Knowledge Then and Now. From Static Data to User Oriented Visualization, in: *e-Perimetreon. International web journal on sciences and technologies affined to history of cartography and maps* 7/2 (2012) 50–61.
- Mihailo St. Popović/Veronika Polloczek, Digitising Patterns of Power (DPP): Applying Digital Tools in the Analysis of Political and Social Transformations in the Historical Region of Macedonia, 12th–14th Centuries, in: *medieval worlds: comparative & interdisciplinary studies* 5 (2017) 170–194.
- Mihailo St. Popović/David Schmid/Markus Breier, From the *Via Egnatia* to Prilep, Bitola and Ohrid: a Medieval Road Map based on Written Sources, Archaeological Remains and GIScience, in: *Space, Landscapes and Settlements in Byzantium* (Vienna/Novi Sad 2017) 289–317.
- Mihailo St. Popović/Jelena Nikić, Byzantinistik, historische Geographie und Ethnographie in dem Königreich Jugoslawien an dem Beispiel des Professors Milenko S. Filipović und der Philosophischen Fakultät in Skoplje (1925–1940), in: *Zbornik Radova Vizantološkog Instituta* 55 (2018) 305–324.
- Mihailo St. Popović/Vratislav Zervan, Signs and Maps of Power in Medieval Europe: A Case Study on Byzantine Macedonia (13th/14th Centuries), in: *MEMO – Medieval and Early Modern Material Culture Online: MEMO # 2 – Digital Humanities & Materielle Kultur* [doi: 10.25536/20180206; published online, URL: <<http://memo.imareal.sbg.ac.at/wsarticle/memo/2018-popovic-signs-and-maps-of-power/>>, 22.01.2019].
- Miroslav Popović, Srpska kraljica Jelena između rimokatoličanstva i pravoslavlja (Beograd 2010); Gojko Subotić, Kraljica Jelena Anžuska – ktitor crkvenih spomenika u Primorju, in: *Istoriski Glasnik* 1–2 (1958) 131–148.
- Nebojša Porčić, Povelja kralja Stefana Dušana o carini sluga Dabiživa, in: *Stari srpski arhiv* 5 (2006) 83–98.
- Josef Poulik, Mikulčice. Sídlo a pevnost knížat velkomoravských (Praha 1975).
- Vítězslav Prchal, Privátní zbrojnice a aristokratická sídla v českých zemích 1500–1750, in: *Svorník* 6 (2008) 141–148.
- Johannes Preiser-Kapeller, erdumn, ucht, carayut’iwn. Armenian Aristocrats as Diplomatic Partners of Eastern Roman Emperors, 387–884/885 AD, in: *Armenian Review* 52 (2010) 139–215.

- Id., Networks of Border Zones – Multiplex Relations of Power, Religion and Economy in South-Eastern Europe, 1250–1453 CE, in: Proceedings of the 39th Annual Conference of Computer Applications and Quantitative Methods in Archaeology, “Revive the Past”, ed. Mingquan Zhou/Iza Romanowska/Zhongke Wu et al. (Amsterdam 2012) 381–393.
- Id., A Collapse of the Eastern Mediterranean? New Results and Theories on the Interplay between Climate and Societies in Byzantium and the Near East, ca. 1000–1200 AD, in: *Jahrbuch der Österreichischen Byzantinistik* 65 (2015) 195–242.
- Id., Thematic Introduction, in: Harbours and Maritime Networks as Complex Adaptive Systems, ed. Johannes Preiser-Kapeller/Falko Daim (RGZM Tagungen 23, Mainz 2015) 1–24.
- Id., Complex Processes of Migration: the South Caucasus in the Early Islamic Empire (7th–10th Century AD), in: *Migration und Integration von der Urgeschichte bis zum Mittelalter*, ed. Harald Mehler et al. (Halle 2017) 295–313.
- Id., Climate, Ecology and Lordship in the Medieval Armenian Highlands (6th to 11th Cent. CE), in: *A Companion to the Environmental History of Byzantium*, ed. Johannes Preiser-Kapeller/Adam Izdebski (Brill Companions to the Byzantine World, Leiden/New York/Cologne 2019 [forthcoming])
- Prosopographisches Lexikon der Palaiologenzeit. CD-Rom Version, ed. E. Trapp et al. (Wien 2001).
- Selami Pulaha, *Cadastre de l’an 1485 du Sandjak de Shkoder* (Tirana 1974).
- Miodrag A. Purković, *Itinerar kralja i cara Stefana Dušana*, in: *Glasnik Skopskog naučnog društva* 19 (1938) 239–244.
- Id., *Srpski episkopi i mitropoliti srednjega veka* (Skoplje 1938).
- Id., *Popis sela u srednjevekovnoj Srbiji*, in: *Godišnjak Skopskog Filozofskog Fakulteta* 4/2 (1939/40) 53–160.
- Đorđe Sp. Radojčić, *O pomeniku sv. Bogorodice Leviške* (Rukopis Br. 227 Narodne Biblioteke u Beogradu), in: *Starinar* 15 (1940) 43–69.
- Id., *Razvojni luk stare srpske književnosti* (Novi Sad 1962).
- William M. Ramsay, *The Historical Geography of Asia Minor* (London 1890).
- Susanne Rau, *Die Vielfalt des Räumlichen. Stand und Perspektiven der frühneuzeitlichen Raumforschung*, in: *Frühneuzeit-Info* 28 (Wien 2017) 75–86, published online, URL: <https://www.academia.edu/36621311/Die_Vielfalt_des_R%C3%A4umlichen_Stand_und_Perspektiven_der_fr%C3%BChneuzeitlichen_Raumforschung_in_Fr%C3%BChneuzeit-Info_28_2017_>, 22.02.2019.
- Susanne Rau, *Räume. Konzepte, Wahrnehmungen, Nutzungen* (Historische Einführungen, Frankfurt/New York 2017).
- Eric S. Raymond, *The Cathedral and the Bazaar. Musings on Linux and Open Source by an Accidental Revolutionary* (Sebastopol–Ca 1997), URL: <<http://www.catb.org/~esr/writings/cathedral-bazaar/cathedral-bazaar/ar01s04.html>>, 15.11.2018.
- Jelka Redjep, *Stare srpske biografije* (Novi Sad 2008).

- Jeroen De Reu et al., Application of the Topographic Position Index to Heterogeneous Landscapes, in: *Geomorphology* 186 (2013) 39–49.
- Anne-Kathrin Reuschel/Lorenz Hurni, Mapping Literature: Visualisation of Spatial Uncertainty in Fiction, in: *The Cartographic Journal* 48,4 (2013) 293–308.
- Susan Reynolds, *Fiefs and Vassals. The Medieval Evidence Reinterpreted* (Oxford 1994).
- Barbara H. Rosenwein, *Negotiating Space. Power, Restraint and Privileges of Immunity in Early Medieval Europe* (Ithaca 1999).
- Robert David Sack, *Human territoriality – Its Theory and History* (Cambridge/London/New York et al. 1986).
- Ljudmila A. Šaferova, Mery dliny i ploščadi v srednovekovoj Serbii, in: *Iz istorii drevnego mira u srednich vekov. Krasnodarsk* 1967, 63–72.
- Patrick Sahle, What is a Scholarly Digital Edition (SDE)?, in: *Digital Scholarly Editing. Theory, Practice and Future Perspectives*, ed. Matthew Driscoll/Elena Pierazzo (Cambridge 2016) 19–39.
- Srđan Šarkiċ, O značenju izraza Srbin, čovek i građanin u srednjovekovnom srpskom pravu, in: *Dušanov zakonik: 650 godina od njegovog donošenja*, ed. Slavko Leovac (Banja Luka 2000) 199–206.
- Annika Schlitte et al., Einleitung. Philosophie des Ortes, in: *Philosophie des Ortes. Reflexionen zum Spatial Turn in den Sozial- und Kulturwissenschaften*, ed. Annika Schlitte et al. (Bielefeld 2014) 7–24.
- Karl Schlögel, Kartenlesen, Augenarbeit. Über die Fähigkeit des spatial turn in den Geschichts- und Kulturwissenschaften, in: *Was sind Kulturwissenschaften? 13 Antworten*, ed. Heinz Dieter Kittsteiner (Bonn 2004) 261–83.
- Herwig Schlögl, *Lateinische Hofpoesie unter Maximilian I.* (Doctoral Thesis, Wien 1969).
- David Schmid/Mihailo St. Popović/Markus Breier, From the Via Egnatia to Prilep, Bitola and Ohrid: a Medieval Road Map based on Written Sources, Archaeological Remains and GIScience, in: *Space, Landscapes and Settlements in Byzantium: Studies in Historical Geography of the Eastern Mediterranean, Presented to Johannes Koder*, ed. Andreas Külzer/Mihailo St. Popović (Studies in Historical Geography and Cultural Heritage 1, Vienna/Novi Sad 2017) 511–518.
- Hans-Joachim Schmidt, Grenzen in der mittelalterlichen Kirche. Ekklesiologische und juristische Konzepte, in: *Grenzen und Raumvorstellungen (11.–20. Jahrhundert). Frontières et Conception de l'espace (XI^e–XX^e siècle)*, ed. Guy Marchal (Zürich 1996) 137–162.
- Schnell, *Die kleinen Kunstführer Nr. 1649* (München 1988).
- Rainer Schreg, Archäologische Beobachtungen zur Größenentwicklung merowingerzeitlicher Gräberfelder in Süddeutschland, in: *Der Zahn der Zeit. Festschrift für Kurt W. Alt*, ed. Christian Meyer/Petra Held/Corina Knipper et al. (Halle in press).

- Id., Late Medieval Deserted Settlements in Southern Germany as a Consequence of Long-Term Landscape Transformations, in: *Ruralia XIII* Kilkenny 2017 (Amsterdam in press).
- Id., Dorfgenese und histoire totale. Zur Bedeutung der histoire totale für die Archäologie des Mittelalters, in: *Zwischen den Zeiten. Archäologische Beiträge zur Geschichte des Mittelalters in Mitteleuropa. Festschrift für Barbara Scholkmann*, ed. Jochem Pfrommer/Rainer Schreg (Internationale Archäologie. Studia honoraria 15, Rahden/Westfalen 2001) 333–348.
- Id., Die Archäologie des mittelalterlichen Dorfes in Süddeutschland. Probleme – Paradigmen – Desiderate, in: *Siedlungsforschung* 24 (2006) 141–162.
- Id., Dorfgenese in Südwestdeutschland. Das Renninger Becken im Mittelalter (Materialhefte zur Archäologie Baden-Württemberg 76, Stuttgart 2006).
- Id., Siedlungen in der Peripherie des Dorfes. Ein archäologischer Forschungsbericht zur Frage der Dorfgenese in Südbayern, in: *Bericht der Bayerischen Bodendenkmalpflege* 50 (2009) 293–317.
- Id., Die Entstehung des Dorfes um 1200: Voraussetzung und Konsequenz der Urbanisierung, in: *Wandel der Stadt um 1200: die bauliche und gesellschaftliche Transformation der Stadt im Hochmittelalter*, ed. Ralph Röber/Karsten Igel/Michaela Jansen et al. (Materialhefte zur Archäologie Baden-Württemberg 96, Stuttgart 2013) 47–66.
- Id., Die Ungarnzüge als Faktor der Siedlungsgeschichte Westeuropas – Das lange 10. Jahrhundert zwischen Ereignis- und Strukturgeschichte, in: *Das lange 10. Jahrhundert zwischen Zentralisierung und Fragmentierung, äußerem Druck und innerer Krise*, ed. Stefan Albrecht/Christine Kleinjung (Römisch-Germanisches Zentralmuseum. Tagungen 19, Mainz 2014) 215–238.
- Id., Ecological Approaches in Medieval Rural Archaeology, in: *European Journal of Archaeology* 17 (2014) 83–119.
- Id., Uncultivated landscapes or wilderness? Early Medieval Land Use in Low Mountain Ranges and Flood Plains of Southern Germany, in: *European Journal of Post-Classical Archaeologies* 4 (2014) 69–98.
- Id., Bauern als Akteure – Beobachtungen aus Süddeutschland, in: *Lebenswelten zwischen Archäologie und Geschichte. Festschrift für Falko Daim zu seinem 65. Geburtstag*, ed. Jörg Drauschke/Ewald Kislinger/Karin Kühtreiber et al. (Römisch-Germanisches Zentralmuseum. Monographien 150, Mainz 2018) 553–563.
- Rainer Schreg/Jutta Zerres/Heidi Pantermehl/Stefanie Wefers/Lutz Grunwald/Detlef Gronenborn, *Habitus – ein soziologisches Konzept in der Archäologie*, in: *Archäologische Informationen* 36 (2013) 101–112, <doi.org/10.11588/ai.2013.0.15324>.
- Meinrad Schroll, Die Herzheimer zu Heretsham, Trostberg und Salmanskirchen, in: *Der Heimatspiegel (Trostberg)* 6 (1998) 1–4.
- Id., Die Herzheimer zu Heretsham, Trostberg und Salmanskirchen, in: *Heimatsbuch Keinberg (Kienberg)* 2006) 91–127.

- Rainer Schützeichel/Stefan Jordan (eds.), *Prozesse. Formen, Dynamiken, Erklärungen* (Wiesbaden 2015).
- Christopher R. Seddon, Grablegen, Memoria und Repräsentation eines Innviertler Landadelsgeschlechtes – Die inschriftlichen Denkmäler der Herren und Freiherren von Hackledt, in: *Jahrbuch des oberösterreichischen Musealvereines, Gesellschaft für Landeskunde*, 148. Band (Linz 2003) 117–156.
- Werner Seibt, Die Eingliederung von Vaspurakan in das Byzantinische Reich (etwa Anfang 1019 bzw. Anfang 1022), in: *Handes Amsorya* 92 (1978) 49–66.
- Afanasij M. Seliščev, Polog i ego bolgarskoe naselenie. Istoričeskie, etnografičeskie i dialektologičeskie očerki severo-zapadnoj Makedonii (Sofija 1929).
- Rory Sherlock, Changing Perceptions: Spatial Analysis and the Study of the Irish Tower House, in: *Château Gaillard* 24 (2010) 239–250.
- Rustam Shukurov, *The Byzantine Turks, 1204–1461* (Leiden 2016).
- Rainer Simon/Elton Barker/Leif Isaksen/Pau de Soto Cañamares, Linked Data Annotation without the Pointy Brackets: Introducing Recogito 2, in: *Journal of Map and Geography Libraries* 13/1 (2017) 111–132.
- F. Barlas Şimşek/M. Namık Çağatay, Late Holocene High Resolution Multi-Proxy Climate and Environmental Records from Lake Van, Eastern Turkey, in: *Quaternary International* (2018), URL: <<https://doi.org/10.1016/j.quaint.2017.12.043>>, 27.02.2018.
- Robert Šimůnek, Hrad jako symbol v myšlení české středověké šlechty, in: *Český časopis historický* 108 (2010) 185–219.
- Id., *Reprezentace české středověké šlechty* (Praha 2013).
- Dušan Sindik, Srpska srednjovekovna akta u manastiru Hilandaru, in: *Hilandarski zbornik* 10 (1998) 9–132.
- Lidija Slaveva, Diplomaticko-pravne spomenici za istorijata na Polog i sosednite kraevi vo XIV vek, in: *Spomenici za srednovkovnata i ponovata istorija na Makedonija III*, ed. Lidija Slaveva/Petar Miljković-Pepel (Skopje 1980) 13–453.
- Id., „Brevno“ na Htetovski manastir od prve godine na vladeenje na kral Stefan Dušan, in: *Makedonski jazik* 36/37 (1985–1986) 121–135.
- Adam T. Smith, *The Political Landscape. Constellations of Authority in Early Complex Polities* (Berkeley 2003).
- Edward W. Soja, *Postmodern Geographies. The Reassertion of Space in Critical Social Theorie* (London/New York 1990).
- Aleksandar Solovjev, *Odabrani spomenici srpskog prava od kraja XII do kraja XV veka* (Beograd 1926).
- George C. Soulis, The Thessalian Vlachia, in: *Zbornik radova vizantološkog instituta* VIII/1 (1963) 271–273.
- Oswald Spengler, *Der Untergang des Abendlandes* (München 1923).
- Stanoje Stanojevic, *Studije o srpskoj diplomaciji 1–28* (Glas Srpske Kraljevske Akademije 90–169, Beograd 1912–1935).

- Carl Steinitz, *Computer Mapping and the Regional Landscape* (Cambridge–Mass. 1967), URL: <<http://nrs.harvard.edu/urn-3:GSD.ioeb:12336276?n=8>>, 26.10.2018.
- Kamila Štekerová/Alžběta Danielisová, *Economic Sustainability in Relation to Demographic Decline of Celtic Agglomerations in Central Europe: Multiple-Scenario Approach*, in: *Simulation Prehistoric and Ancient Worlds*, ed. Juan A. Barceló/Florencia Del Castillo (Cham 2016) 335–357.
- Heiko Steuer, *Gewichtsgeldwirtschaft im frühgeschichtlichen Europa. Feinwaagen und Gewichte als Quellen zur Währungsgeschichte*, in: *Untersuchungen zu Handel und Verkehr der vor- und frühgeschichtlichen Zeit in Mittel- und Nordeuropa. Teil 4: Der Handel der Karolinger- und Wikingerzeit*, ed. Klaus Düwel/Herbert Jankuhn/Harald Siems/Dieter Timpe (Abhandlungen der Akademie der Wissenschaften in Göttingen, Philologisch-Historische Klasse, Dritte Folge, Göttingen 1987) 405–527.
- Id., *Waagen und Gewichte aus dem mittelalterlichen Schleswig. Funde des 11. bis 13. Jahrhunderts aus Europa als Quellen zur Handels- und Währungsgeschichte* (Zeitschrift für Archäologie des Mittelalters Beiheft 10, Köln 1997).
- Miladin Stevanović, *Kralj Milutin* (Beograd 2002).
- Wilhelm Störmer, *Früher Adel. Studien zur politischen Führungsschicht im fränkisch-deutschen Reich vom 8. bis 11. Jahrhundert* (Monographien zur Geschichte des Mittelalters 6, Stuttgart 1973).
- Id., *Frühmittelalterliche Grundherrschaft Bayerischer Kirchen*, in: *Mittelalterliche Klöster und Stifte in Bayern und Franken. Aufsätze von Wilhelm Störmer* (St. Ottilien 2008) 431–469.
- Slobodanka Stojaković, *Privreda, novac i cene u srednjovekovnoj Srbiji*, in: *Numizmatičar* 26–27 (2003–2004) 359–401.
- Alois Stuppner, *Rund um den Oberleiserberg. Archäologische Denkmale der Gemeinden Ernstbrunn und Niederleis* (Ernstbrunn 2006).
- Id., *Der Oberleiserberg bei Ernstbrunn – eine Höhensiedlung des 4. und 5. Jahrhunderts n.Chr.*, in: *Höhensiedlungen zwischen Antike und Mittelalter*, ed. Dieter Geuenich/Heiko Steuer (Ergänzungsbände zum Reallexikon der Germanischen Altertumskunde 58, Berlin/New York 2008) 427–456.
- Id., *Der Oberleiserberg bei Ernstbrunn am Übergang vom Frühmittelalter zum Hochmittelalter*, in: *Die Babenbergermark um die Jahrtausendwende. Zum Millenium des heiligen Koloman*, ed. Roman Zehetmayer (NÖLA – Mitteilungen aus dem Niederösterreichischen Landesarchiv 16, St. Pölten 2014) 266–287.
- Peter A. Sűsz, *Castles at the “Steigerwald Mountains”. Between Dynasty and Territorial Rule*, in: *Concilium medii aevi* 14 (2011) 55–61.
- Marko Šuica, *Primićur*, in: *Leksikon srpskog srenjeg veka*, ed. Sima Ćirković/Rade Mihaљićić (Beograd 1999) 584.

- Frédéric Surmely/Julien le Junter, Les structures pastorales des massifs du Sancy et du Cézallier (Puy-de-Dôme, France), in: *Revue Archéologique du Centre de la France* 56 (2017) online.
- Ladislav Svoboda, Stavební vývoj českých tvrzí, in: *Encyklopedie českých tvrzí*. I. díl (A–J) (Praha 1998) XI–XXXIII.
- Charalampos P. Symeonides, Ετυμολογικό Λεξικό των Νεοελληνικών Οικωνυμίων, 1–2 (Leukosia/Thessalonike 2010).
- Erik Szameit, Zum archäologischen Bild der frühen Slawen in Österreich, Mit Fragen zur ethnischen Bestimmung karolingerzeitlicher Gräberfelder im Ostalpenraum, in: *Slowenien und die Nachbarländer zwischen Antike und karolingischer Epoche. Die Anfänge der slowenischen Ethnogenese*, ed. Rajko Bratož (Situla 39, Ljubljana 2000) 507–548.
- Miklós Takács, Siedlungsgeschichtliche Auswertung, in: *Das frühungarische Reitergrab von Gnadendorf (Niederösterreich)*, ed. Falko Daim/Ernst Lauermaun (Mainz 2006) 211–252.
- Miklós Takács, Über die Chronologie der mittelalterlichen Siedlungsgrabungen in Ungarn, in: *Acta archaeologica Academiae Scientiarum Hungaricae* 60 (2009) 223–252.
- Teodor Taranovski, *Istorija srpskog prava u Nemanjičkoj državi* (Beograd 2002).
- Peter J. Taylor, Editorial comment GIS, in: *Political Geography Quarterly* 9/3 (1990) 211–212.
- Claudia Theune/Iris Winkelbauer/Michaela Fritzl/Isabella Greußing/Gerald Lantschik/Ronny Weißling, Das Land an der March im Mittelalter, in *Archaeologia Austriaca* 93/2009 (2011) 79–150.
- Jean-Michel Thierry. Notes de géographie historique sur le Vaspurakan, in: *Revue des études byzantines* 34 (1976) 159–173.
- Id., *Monuments arméniens du Vaspurakan* (Paris 1989).
- Christopher Tilley, *A Phenomenology of Landscape: Places, Paths and Monuments* (Oxford/Providence 1994).
- Robert W. Thomson, *A Bibliography of Classical Armenian Literature to 1500 AD* (Corpus Scriptorum Christianorum Orientalium, Turnhout 1995).
- Robert W. Thomson, Supplement to 'A Bibliography of Classical Armenian Literature to 1500 AD'. Publications 1993–2005, in: *Le Muséon* 120 (2007) 163–233.
- Waldo Tobler, A Computer Movie Simulating Urban Growth in the Detroit Region, in: *Economic Geography* 46 (1970) 234–240.
- Id., Three Presentations on Geographical Analysis and Modeling (Technical report 93-1, National Center for Geographic Information and Analysis, University of California 1993).
- Tomo Tomoski, Prilog kon ubikacijata na Modričkiot manastir, in: *Godišen zbornik na Filozofski Fakultet vo Skopje* 23 (1971) 255–258.
- Id., Srednovekoven Polog, in: *Istorija* 12 (1976) 64–81.

- Id., Srednovekovni gradovi vo Polog, in: Godišen zbornik na Filozofski Fakultet vo Skopje 28 (1976) 249–268.
- Id., Zapisi za Vlasite vo Makedonija vo sredniot vek, in: Makedonija niz vekovite-gradovi, tvrdini, komunikacii (Skopje 1999) 419–428.
- Id., Molisk-Molsko-Moleskova (Leskova)-Lehova, in: Makedonija niz vekovite-gradovi, tvrdini, komunikacii, ed. Cvetan Grozdanov/Kosta Adžievski/Aleksandar Stojanovski (Skopje 1999) 150–158.
- Id., Stan ne e Stag, in: Makedonija niz vekovite-gradovi, tvrdini, komunikacii, ed. Cvetan Grozdanov/Kosta Adžievski/Aleksandar Stojanovski (Skopje 1999) 348–351.
- Gordana Tomović, Morfologija ćirilćkih natpisa na Balkanu (Beograd 1974).
- Tomasz Torbus, Die Konventsburgen im Deutschordensland Preußen (München 1998).
- Erich Trapp, Der *Dativ* und der Ersatz seiner Funktionen in der byzantinischen Vulgärdichtung, in: Jahrbuch der Österreichischen Byzantinischen Gesellschaft 14 (1965) 21–34.
- Id., Lexikon zur byzantinischen Gräzität, besonders des 9.–12. Jahrhunderts, 1 (Wien 2001).
- Ferdinand Tremel, Hans Herzheimer, Aussee, und die Ausseer Hallamtsordnung vom Jahre 1513, in: Festschrift Hermann Wiesflecker zum sechzigsten Geburtstag, ed. Alexander Novotny/Othmar Pickl (Graz 1973) 81–97.
- Dušan Třeštík, Vznik Velké Moravy. Moravané, Čechové a střední Evropa v letech 791–871 (Praha 2001).
- Djordje Trifunović, Azbućnik srpskih srednjovekovnih pojmova (Beograd 1990).
- Jovan F. Trifunoski, Sela koi sega ne postoat vo Polog, in: Godišen zbornik. Filozofski fakultet na Univerzitetot - Skopje 2 (1949) 155–175.
- Jovan F. Trifunoski, Polog (Antropogeografska proućavanja) (Srpski etnografski zbornik 90, Naselja i poreklo stanovništva 42, Beograd 1976).
- Katharina Ulmschneider, Settlement, Economy and the "Productive" Site: Middle Anglo-Saxon Lincolnshire A.D. 650–780, in: Medieval Archaeology 44 (2000) 53–79.
- US Census Bureau, 1968, DIME Underwent Lots Of Testing Too, Census Bulletin, Vol. XVIII, No. 18, September 6, 1968, URL: <https://www.census.gov/history/pdf/1968_censusbulletin-dime.pdf>, 02.10.2018.
- Fedor I. Uspenskij, Materialy dlja istorii zemlevlādēnija v XIV věķē (Odessa 1883).
- Vratislav Vaníćek, „Právo na hrad“ a hradní regál – hodnocení souvislostí revindikaćních sporů ve 13. století v českých a alpských zemích, in: Zamki i przestrzeń społeczna w Europie śródkowej i wschodniej, ed. Marcell Antoniewicz (Warszawa 2002) 24–50.
- Max Vasmer, Die Slaven in Griechenland (Abhandlungen der Preussischen Akademie der Wissenschaften, Philosophisch-Historische Klasse 1941/12, Berlin 1941).
- Id., Die griechischen Lehnwörter im Serbo-Kroatischen (Abhandlungen der Preussischen Akademie der Wissenschaften, Philosophisch-Historische Klasse 1944/3, Berlin 1944).

- Vladimír Vavřínek, Mission in Mähren. Zwischen dem lateinischen Westen und Byzanz, in: Europas Mitte um 1000. Beiträge zur Geschichte, Kunst und Archäologie. Band 1, ed. Alfried Wiczorek/ Hans Hinz (Stuttgart 2000) 304–310.
- Id., Cyril a Metoděj mezi Konstantinopolí a Římem (Praha 2013).
- Philip Verhagen, On the Road to Nowhere? Least Cost Paths, Accessibility and the Predictive Modelling Perspective, in: Fusion of Cultures, ed. Francisco Contreras/Mercedes Farjas/Francisco J. Melero (CAA 2010, Oxford 2013) 383–389.
- Sergij Vilfan, Lage und Struktur der freisingischen Herrschaften in Krain, in: Hochstift Freising. Beiträge zur Besitzgeschichte, ed. Hubert Glaser (München 1990) 271–285.
- Claudio Vita-Finzi/Eric S. Higgs, Prehistoric Economy in the Mount Carmel Area of Palestine: Site Catchment Analysis, in: Proceedings of the Prehistoric Society 36 (1970) 1–37.
- Milan Vlajinac, Rečnik naših starih mera. U toku vekova. I–IV (Beograd 1961–1974).
- Pavel Vlček, Ilustrovaná encyklopedie českých zámků (Praha 2001).
- Lothar Vogel, Vom Werden eines Heiligen, Eine Untersuchung der Vita Corbiniani des Bischofs Arbeo von Freising (Berlin/New York 2000).
- Georg Vogeler (ed.), Digitale Diplomatie: neue Technologien in der historischen Arbeit mit Urkunden (Archiv für Diplomatik, Schriftgeschichte, Siegel- und Wappenkunde, Beiheft 12, Köln/Weimar/Wien 2009).
- Joanita Vroom (ed.), Medieval and Post-Medieval Ceramics in the Eastern Mediterranean – Fact and Fiction. Proceedings of the First International Conference on Byzantine and Ottoman Archaeology, Amsterdam, 21–23 October 2011 (Turnhout 2015).
- Žarko Vujošević, Diplomatie in Serbien und Montenegro, in: Archiv für Diplomatik, Schriftgeschichte, Siegel- und Wappenkunde 52 (Köln/Weimar/Wien 2006) 531–540.
- Id., Arhilejička hrisovulja cara Stefana Dušana, in: Initial. A Review of Medieval Studies 1 (2013) 241–254.
- Id., Povelja Konstantina Dragaša Hilandaru o manastiru Lesnovu, in: Realia Byzantino-Balcanica. Studia in honorem LX annorum Professoris Christi Matanov (Sofija 2014) 453–475.
- Id., Srpska vladarska kancelarija u srednjem veku. Studija iz uporedne diplomatike (manuscript of the Doctoral Thesis, Belgrade 2016).
- Žarko Vujošević / Nebojša Porčić/Dragić M. Živojinović, Das serbische Kanzleiwesen. Die Herausforderung der digitalen Diplomatie, in: Digital Diplomats. The Computer as a Tool for the Diplomatist?, ed. Antonella Ambrosio/Sébastien Barret/Georg Vogeler (Archiv für Diplomatik, Schriftgeschichte, Siegel- und Wappenkunde, Beiheft 14, Köln/Weimar/Wien 2014) 133–147.
- Egon Wamers, Die frühmittelalterlichen Lesefunde aus der Löhrrstrasse (Baustelle Hilton II) in Mainz (Mainzer Archäologische Schriften 1, Mainz 1994).
- Celine Wawruschka, Frühmittelalterliche Siedlungsstrukturen in Niederösterreich (Mitteilungen der Prähistorischen Kommission 68, Wien 2009).
- Abigail Wheatley, The Idea of the Castle in Medieval England (Woodbridge 2004).

- David Wheatley/Mark Gillings, *Spatial Technology and Archaeology: The Archaeological Applications of GIS* (London/New York 2002).
- Id., *Vision, Perception and GIS: Developing Enriched Approaches to the Study of Archaeological Visibility*, in: *Beyond the Map. Archaeology and Spatial Technologies*, ed. Gary Lock (Amsterdam 2002) 1–28.
- White House Science Fair Fact Sheet & Backgrounder, URL: <<https://obamawhitehouse.archives.gov/the-press-office/2014/05/27/white-house-science-fair-fact-sheet-backgrounder>>, 02.10.2018.
- Lucia Wick/Genry Lemcke/Michael Sturm, *Evidence of Lateglacial and Holocene Climatic Change and Human Impact in Eastern Anatolia: High-Resolution Pollen, Charcoal, Isotopic and Geochemical Records from the Laminated Sediments of Lake Van, Turkey*, in: *Holocene* 13 (2003) 665–675.
- Chris Wickham, *Framing the Early Middle Ages* (Oxford 2005).
- Amy Willis, Facebook ‘Map of the World’ Created Using Friendship Connections, *The Telegraph*, also see URL: <<https://www.telegraph.co.uk/technology/facebook/8203605/Facebook-map-of-the-world-created-using-friendship-connections.html>>, 02.10.2018.
- Katharina Winckler, *Die Alpen im Frühmittelalter. Die Geschichte eines Raumes in den Jahren 500 bis 800* (Wien 2012).
- Thomas Winkelbauer, *Kontakte und Konflikte. Böhmen, Mähren und Österreich. Aspekte eines Jahrhunderts gemeinsamer Geschichte* (Waidhofen an der Thaya 1993).
- Heinz Winter, *Awarische Grab- und Streufunde aus Ostösterreich. Ein Beitrag zur Siedlungsgeschichte* (Monographien zur Frühgeschichte und Mittelalterarchäologie 4, Innsbruck 1997).
- Milan Wlainatz, *Die agrar-rechtlichen Verhältnisse des mittelalterlichen Serbiens* (Jena 1903).
- Herwig Wolfram, *Libellus Virgilii. Ein quellenkritisches Problem der ältesten Salzburger Güterverzeichnisse*, in: *Mönchtum, Episkopat und Adel zur Gründungszeit des Klosters Reichenau*, ed. Arno Borst (Sigmaringen 1974) 177–214.
- Id., *Die Zeit der Agilolfinger – Rupert und Virgil*, in: *Geschichte Salzburgs: Stadt und Land. Band 1: Vorgeschichte, Altertum, Mittelalter*, ed. Heinz Dopsch/Hans Spatzenegger (Salzburg 1981) 121–156.
- Id., *Grenzen und Räume. Geschichte Österreichs vor seiner Entstehung. Österreichische Geschichte 378–907* (Wien 1995).
- Id., *Salzburg, Bayern Österreich. Die Conversio Bagoariorum und die Quellen ihrer Zeit*, (MIÖG-Erg. 31, Wien 1995).
- Id., *Conversio Bagoariorum et Carantanorum. Das Weißbuch der Salzburger Kirche über die erfolgreiche Mission in Karantanien und Pannonien* (Ljubljana 2012).
- David Woodward (ed.), *Five Centuries of Map Printing, The Kenneth Nebenzahl Jr., Lectures in the History of Cartography at the Newberry Library* (Chicago 1974).

- Dawn Wright/M. F. Goodchild/James Proctor, GIS: Tool or Science? Demystifying the Persistent Ambiguity of GIS as "Tool" versus "Science", in: AAG Annals 87 (1997).
- George Young, *Corps de droit Ottoman* (Oxford 1905).
- Josef Zábajník, Zum Vorkommen von Gegenständen „awarischer“ Provenienz auf den slawischen Burgwällen nördlich der Donau, in: Frühgeschichtliche Zentralorte in Mitteleuropa, ed. Jiří Macháček/Šimon Ungerman (Studien zur Archäologie Europas 14, Bonn 2011) 203–216.
- Andreas Zajic, „Zu ewiger gedächtnis aufgericht“. Grabdenkmäler als Quelle für Memoria und Repräsentation von Adel und Bürgertum im Spätmittelalter und in der Frühen Neuzeit. Das Beispiel Niederösterreichs (Wien/München 2004).
- Roman Zehetmayer (ed.), Schicksalsjahr 907. Die Schlacht bei Pressburg und das frühmittelalterliche Niederösterreich (NÖLA – Mitteilungen aus dem Niederösterreichischen Landesarchiv 12, St. Pölten 2007).
- Jan Zelenka, *Beneficium et feudum. Podoba a proměny lenního institutu* (Praha 2016).
- Bernd Zeller, Baiern, das Ostfränkische Reich und die Ungarn zwischen der Niederlage bei Pressburg und dem Sieg auf dem Lechfeld bei Augsburg 907–955, in: Schicksalsjahr 907. Die Schlacht bei Pressburg und das frühmittelalterliche Niederösterreich, ed. Roman Zehetmayer (NÖLA – Mitteilungen aus dem Niederösterreichischen Landesarchiv 12, St. Pölten 2007) 45–56.
- Id., Grenzen und Grauzonen im Osten des ostfränkisch-ottonischen Reiches von Konrad I. bis Otto I, in: Im Schnittpunkt frühmittelalterlicher Kulturen – Niederösterreich an der Wende vom 9. zum 10. Jahrhundert. Die Vorträge des 27. Symposiums des Niederösterreichischen Instituts für Landeskunde in Hainburg 3. bis 6. Juli 2007, ed. Roman Zehetmayer (NÖLA – Mitteilungen aus dem Niederösterreichischen Landesarchiv, St. Pölten 2008) 71–91.
- Vratislav Zervan/Johannes Kramer/Claudia Römer/Michael Metzeltin/Bojana Pavlović/Andrea Cuomo, Die Lehnwörter im Wortschatz der spätbyzantinischen historiographischen Literatur (Byzantinisches Archiv 34, Berlin/Boston 2019).
- Paul E. Zimansky, *Ecology and Empire: The Structure of the Urartian State* (Studies in Ancient Oriental Civilization 41, Chicago 1985).
- Mirjana Živojinović, Estates of the Monastery of Hilandar in the Middle Ages, in: Hilandar Monastery (Beograd 1998) 71–90.
- Mirjana Živojinović, L'irrigation des terres en Serbie medievale, in: Zbornik radova Vizantološkog instituta 39 (2001–2002) 183–196.
- Andrea Zlatar, *Ispovijest i životopis: srednjovjekovna autobiografija* (Zagreb 2000).

Web Links

CIDOC, URL: <<http://www.cidoc-crm.org/>>.

Craws, URL: <<https://redmine.craws.net/projects/uni/wiki/CIDOC-Mappings#Custom-Properties-and-Shortcuts>>.

ČÚŽK Geoportal, URL: <<http://geoportal.cuzk.cz/>>.

Diplomatarium Serbicum Digitale, URL: <www.bisanu.rs>.

Dig-TIB, URL: <<https://tib.oeaw.ac.at/index.php?seite=digitib>>.

DPP Homepage, URL: <<https://dpp.oeaw.ac.at>>.

DPP Case Studies, URL: <<https://dpp.oeaw.ac.at/index.php?seite=CaseStudies>>.

Epigraphic Database, URL: <<http://manfredclauss.de/gb/index.html>>.

GeoNames, URL: <<https://www.geonames.org/>>.

Hilandar Research Library, URL: <<https://library.osu.edu/hrl>>.

The International Project Community as Opportunity: The Creative Archives' and Characters' Network, URL: <www.coop-project.eu>.

Leaflet, URL: <<https://leafletjs.com/>>.

Monasterium, URL: <www.monasterium.net>.

OpenAtlas, URL: <<https://demo-dev.openatlas.eu/>>.

The Packard Humanities Institute, URL: <<http://epigraphy.packhum.org/>>.

Pelagios, URL: <<http://commons.pelagios.org/>>.

Recogito, URL: <<https://recogito.pelagios.org/>>.

Tabula Imperii Byzantini, URL: <<https://tib.oeaw.ac.at>>.

Thesaurus Linguae Graecae, URL: <<https://stephanus.tlg.uci.edu>>.