



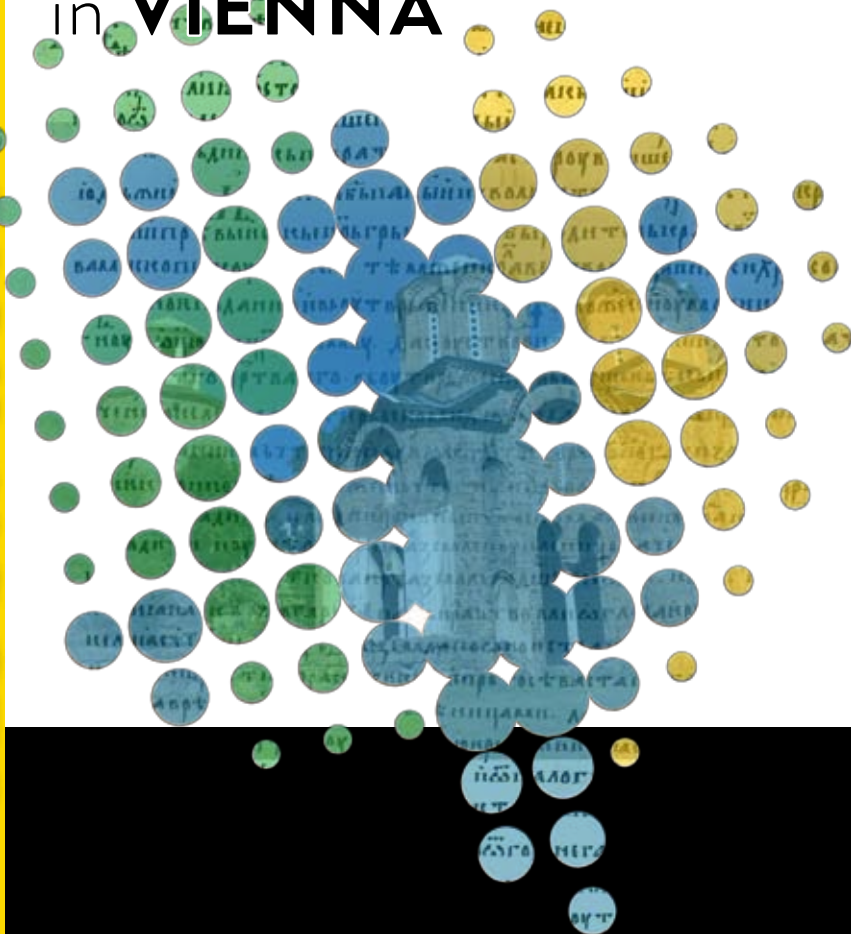
DPP

Digitising Patterns of Power
Peripheral Mountains in the Medieval World

1st International Workshop • 28–29 September 2016

THEORY and PRACTICE
in **HISTORICAL**
GEOGRAPHY and
DIGITAL HUMANITIES
in **VIENNA**

Abstracts



09:00–09:10

Welcome: Walter **POHL** Director IMAFO, Claudia **RAPP** Head of ABF

Presentation of DPP:

Mihailo **POPOVIĆ**: Introduction and Case Study Macedonia

Katharina **WINCKLER**: Case Study Eastern Alps

Stefan **EICHERT**: Case Study Morava/March and Dyje/Thaya

David **SCHMID**: Case Study Macedonia

Johannes **PREISER-KAPPELLER**: Case Study Armenia

Veronika **POLLOCZEK**: Case Study Herzheimer Chronicle

Stefan **EICHERT**, Alexander **WATZINGER**, Bernhard **KOSCHICEK**:

Software Engineering

Karel Kriz, Alexander Pucher, Markus **BREIER**, Daniel Nell:

Cartography and Geocommunication (University of Vienna)

09:10–10:30

10:30–10:45 • Coffee Break

PART 1 „Power and Space“ • Chair: Andreas Rhoby

10:45–11:20

Paper no. 1

Mihailo **POPOVIĆ** (Austrian Academy of Sciences)

Signs/Symbols of Power in DPP:

First Ideas and Thoughts

11:20–11:55

Paper no. 2

Ivo **ŠTEFAN** (Charles University)

Searching for Networks of Power. Early Medieval Centres in Bohemia

11:55–12:30

Paper no. 3

Maria **RIEP** (Leiden University)

In Between Histories: Power and Space along the Upper and Middle Course of the Syr Darya in the 7th and 8th Century CE

12:30–14:00 • Lunch

PART 2 „Realisation: Technical Aspects and Similar Projects“ • Chair: Stefan Eichert

14:00–14:35

Paper no. 4

Markus **BREIER** (University of Vienna)

Geocommunication and Interactive Mapping in the Context of Historical Research

14:35–15:10

Paper no. 5

Johan **ÅHLFELDT** (Lund University)

Between Empires – Visualization of Structure and Event in Two Geographical Information Systems of Late Antiquity and Early Medieval Europe

15:10–15:45

Paper no. 6

Žarko **VUJOŠEVIĆ** (University of Belgrade)

Old Wine into New Skins: The Work-in-Progress Diplomatarium Serbicum Digitale

15:45–16:00 • Coffee Break



PUBLIC LECTURE No. 1 „Power and Space“ • Chair: Mihailo Popović

Venue: Redemptoristenkolleg Maria am Gestade, Salvatorgasse 12, Klemenssaal, 1010 Vienna

16:30–17:30

Richard J.A. **TALBERT** (University of North Carolina, Chapel Hill)

Digital Mapping for Antiquity: Prospects and Problems

17:30–17:50 • *Break*

PUBLIC LECTURE No. 2 „Environmental Studies“ • Chair: Mihailo Popović

Verena **WINIWARTER** (University of Klagenfurt)

17:50–18:50

Environment as ‚Total Phenomenon‘ of History?

Challenges of Co–evolutionary Narratives in Environmental History

19:30

Dinner

PART 3 „Environmental Studies“ • Chair: Johannes Preiser-Kapeller

09:00–09:35

Paper no. 7

Rainer **SCHREG** (Römisch–Germanisches Zentralmuseum Mainz)

Assessing Settlement Dynamics in Medieval Central and Western Europe

09:35–10:10

Paper no. 8

Christian **ROHR** (University of Bern)

From the Chronicle to the Database Record: Evaluating Documentary Evidence on Medieval Climate in Euro–Climhist

10:10–10:45

Paper no. 9

Michael **DONEUS** (University of Vienna)

Archaeological Remote Sensing in Alpine Environments

10:45–11:00 • *Coffee Break*

Chair: Peter Soustal

11:00–11:30

Paper no. 10

Johannes **KODER** (Austrian Academy of Sciences)

Landscape and Settlement in Byzantium: Categories of Sources and their Interrelations

Respondent:

11:30–12:30

Charlotte **ROUECHÉ** (King's College London)

Patterns of Power within Digital Byzantium

13:00 • *Lunch*

13:00–19:00

Free Time

PUBLIC LECTURE NO. 3 („Historical Geography“) • Chair: Johannes Koder

Venue: Redemptoristenkolleg Maria am Gestade, Salvatorgasse 12, Klemenssaal, 1010 Vienna

19:00–20:00

Andreas **KÜLZER** (Austrian Academy of Sciences)

50 Jahre Tabula Imperii Byzantini an der ÖAW

Rückblick, Einblick, Ausblick

20:00–21:00

Wine Reception



Digitising Patterns of Power:

Theory and Practice in Historical Geography and Digital Humanities

takes place on 28-29 September 2016

at the Institute for Medieval Research, Hollandstraße 11-13, 1020 Vienna.

The first day of the workshop, **28 September**, will be divided into two parts: The first part will be dedicated to „**Power and Space**“, the second part of this day will deal with „**Realisation: Technical Aspects and Similar Projects**“.

On the second day, **29 September**, our focus will be put on „**Environmental Studies**“. In the course of the workshop there will also be three public lectures on the two crucial themes of the meeting, „**Power and Space**“ and „**Environmental Studies**“, and at the end of the workshop we would like to give you an overview about „**Historical Geography**“ – 50 years *Tabula Imperii*

Byzantini (TIB) at the Austrian Academy of Sciences“, because the TIB celebrates its 50th anniversary in 2016. Moreover, the TIB was included into the exquisite scheme of Long-term-Projects at the Austrian Academy of Sciences in 2015, and in the same year the project was honoured by getting a membership of the Union Académique Internationale in Brussels.

Within the framework of this workshop we would like to present to you our project DPP, its case studies, database, software and its first results in greater detail and we anticipate a joint and fruitful discussion on methodological issues.



For further details on the workshop please cf. <http://dpp.oeaw.ac.at/workshop/>

Digitising Patterns of Power (DPP):

Peripheral Mountains in the Medieval World (DH 2014/10)

The project “*Digitising Patterns of Power*” (in the following DPP) is funded within the programme “*Digital Humanities: Langzeitprojekte zum kulturellen Erbe*” of the Austrian Academy of Sciences (ÖAW) for the duration of four years (1 January 2015-31 December 2018). It is hosted at the Institute for Medieval Research (IMAFO) of the ÖAW and unites as a cluster project various experts from the fields of Medieval History, Byzantine Studies, Historical Geography, Archaeology, Geo-

graphy, Cartography, Geographical Information Science (GISc) and Software Engineering.

DPP focuses on the depiction and analysis of space and place in medieval written sources, the interaction between built and natural environment, the appropriation of space and the emergence of new political, religious and economic structures of power. DPP compares four regions of the Medieval World: the Carolingian Eastern Alps (8th-9th Cent.), the

March/Morava–Thaya/Dyje Border-region (7th-11th Cent.), the historical region of Macedonia (12th-14th Cent.) and historical Southern Armenia (5th-11th Cent.). In order to achieve the aims of the project the Team Institute for Medieval Research (Austrian Academy of Sciences) is cooperating with an external project partner, namely the Team Department of Geography and Regional Research (University of Vienna).

Moreover, DPP is drawing amongst others on the expertise of the renowned project *Tabula Imperii Byzantini* (TIB) on the historical geography of the Byzantine Empire, which was included into the scheme of excellent Long-Term-Projects at the Austrian Academy of Sciences in 2015 and became a member of the Union

Académique Internationale in Brussels in the same year, and on the former project “The Eastern Alps revisited – Continuity and Change from Late Antiquity to the Middle Ages” (Austrian Science Fund Project no. P24045; duration: 1 January 2012-31 December 2014).

Thus, DPP is a cutting edge project within Digital Humanities and uses as well as develops digital tools for data-acquisition, data-management, processing as well as for analyses, visualisation, communication and publication. By following such an approach, DPP envisages at gaining new insights and innovative research-results which could not be achieved based solely on traditional methods.



Between Empires – Visualization of Structure and Event in Two Geographical Information Systems of Late Antiquity and Early Medieval Europe

Johan ÅHLFELDT

*Lund University, Centre for Theology and
Religious Studies, Sweden*

This paper will focus on representing and analyzing Late Antiquity and Early Medieval Europe in two Geographical information systems (GIS). Two different approaches have been used: In the one system, Regnum Francorum Online, <http://francia.ahlfeldt.se>, historical events attested in source documents are referenced in time, space and by agency (based on the concepts in Regesta Imperii), whereas in the other system, Digital Atlas of the Roman Empire, <http://dare.ht.lu.se>, places attested in both primary and secondary sources are used to build a structural model of the Roman Empire (based on the concepts in the Barrington Atlas of the Greek and Roman World). Methodologically both models are built around the principles of Linked Open Data, where entities in each model are

represented by URI:s, exposing, sharing, and connecting data in each model to similar digital resources on the web using shared ontologies as formal representations of knowledge with a set of concepts and relationships between those concepts within each domain. This enables us to utilize the advances of digitization of others and the other way around.

Different ways of dealing with time, space and agency will be discussed throughout the paper. This is achieved by using source material from very different fields in both historical GIS. For instance, from the historical event observed in textual sources, the concept of liturgical and regnal time can be used to better understand the Space of experience and Horizon of expectation (Koselleck) among historical actors at any given moment in history. Even when chronologies cannot be established, conclusion may be drawn from narrative time of the sources. Going from specific observations of historical events and coding properties of the event, the data model allow us to follow both the activities of specific historical actors (e.g. Charlemagne) and structural entities (e.g. royal domain) over

time. Furthermore, the relationship between physical space (topography, hydrography, seasonal and climate change) and cultural space will be explored determining the possibilities of political, economic and cultural action by season and over time.



Geocommunication and Interactive Mapping in the Context of Historical Research

Markus BREIER, Alexander PUCHER, Karel KRIZ

University of Vienna, Institut für Geographie und Regionalforschung, Austria

Historical events and processes do not solely occur in time, but also in space. To depict, analyse and communicate this specific spatial dimension of events and processes, multiple cartographic representations have to be addressed. However, traditional mapping techniques such as static map depiction are primarily devoted to capturing single moments in time. In recent years, telecommunication developments facilitate the possibility to represent spatio-temporal content in dynamic and interactive ways. Services like Google Maps

made interactive online maps ubiquitous tools. Their widespread knowledge has led to great familiarity with interactive maps and geocommunication. However, these services lack basic cartographic principles, which limits their suitability to communicate historical topics in high-quality fashion.

To communicate specialised content such as historical landscapes, custom created base maps as well as advanced functionalities are required. A variety of aspects of geocommunication that are being investigated within the Academy of Science project DPP (Digitising Patterns of Power) are based upon these requirements. Specific base maps are being integrated, as well as human interaction interfaces with the OpenAtlas database. Concepts for the development of base maps in remote areas as well as the representation of spatial uncertainties inherent in historical data have to be created and embedded within the project framework. The visual frontend of the collaboration in DPP will be a dynamic, interactive map based online application.

This paper treats geocommunication characteristics and approa-



ches to interactive mapping in a historical context and shows the substantial differences to available (commercial) services such as Google Maps and Bing Maps. Furthermore, the fundamental challenges of cartographic communication within DPP will be presented.



Archaeological remote sensing in Alpine environments

Michael DONEUS

University of Vienna, Institute of Prehistoric and Historical Archaeology, Austria

Using remote sensing techniques, archaeologists are able to achieve information on archaeological sites and structures as well as on palaeoenvironments over large areas. While aerial photography has been extremely successful in agriculturally used areas, new methods (airborne laser scanning, imaging spectroscopy) allow the investigation of former difficult environments, as woodland or shallow water. Although alpine environments are still challenging for these methods, recent research has demonstrated their successful application.

The presentation will introduce to the most important archaeological remote sensing techniques and their application in alpine environments. Specifically, it will demonstrate its use for the reconstruction of path networks in different study areas (Dachsteinplateau, Karnische Alpen, Leithagebirge). Here, using aerial photography and airborne laser scanning, abundant information on archaeological structures and potential communication routes could be collected and analysed in combination with GIS-based techniques.



Landscape and Settlement in Byzantium: The Sources and their Interrelations

Johannes KODER

Austrian Academy of Sciences, Austria

In the first part of my paper I shall discuss the three main groups of sources for the historical geography and topography of Byzantium – the written sources, the material legacy, and the toponymic evidence. I will discuss in short these groups as such, their specific characteristics and their interaction

with the physical conditions of the landscape, the development of climate and the surface geography, which is influenced by volcanism, earthquakes and seaquakes. That the geographic conditions offer in many cases, in which the other categories of sources are not sufficient to establish historical settlement reality, the basic for valid probabilistic explanations, is well known.

In the second part I shall present some examples for the possibilities to combine informations from the three mentioned groups of sources with the aim of a more detailed description and at the same time more comprehensive presentation of Byzantine political geography and patterns of settlement and traffic. The examples are dated to the early Byzantine period and located in Southeastern Europe (Sremska Mitrovica, Corinth), Asia Minor (Upper Euphrates region) and Syria (Hawran: Sakkaia).



Signs/Symbols of Power in DPP: First Ideas and Thoughts

Mihailo POPOVIĆ

Austrian Academy of Sciences, Institute for Medieval Research, Division of Byzantine Research, Austria

The project „Digitising Patterns of Power“ (in the following DPP) is funded within the programme „Digital Humanities: Langzeitprojekte zum kulturellen Erbe“ of the Austrian Academy of Sciences (ÖAW) for the duration of four years (1 January 2015-31 December 2018). It is hosted at the Institute for Medieval Research (IMAFO) of the ÖAW and unites as a cluster project various experts from the fields of Medieval History, Byzantine Studies, Historical Geography, Archaeology, Geography, Cartography, Geographical Information Science (GISc) and Software Engineering.

DPP focuses on the depiction and analysis of space and place in medieval written sources, the interaction between built and natural environment, the appropriation of space and the emergence of new political, religious and economic structures of power. DPP compares four regions of the Medieval



World: the Carolingian Eastern Alps (8th-9th Cent.), the March/Morava– Thaya/Dyje Borderregion (7th-11th Cent.), the historical region of Macedonia (12th-14th Cent.) and historical Southern Armenia (5th-11th Cent.).

In order to achieve the aims of the project the Team Institute for Medieval Research (Austrian Academy of Sciences) is cooperating with an external project partner, namely the Team Department of Geography and Regional Research (Professor Karel Kriz, University of Vienna). Moreover, DPP is drawing amongst others on the expertise of the renowned project *Tabula Imperii Byzantini* (TIB) on the historical geography of the Byzantine Empire, which was included into the scheme of excellent Long-Term-Projects at the Austrian Academy of Sciences in 2015.

Thus, DPP is a cutting edge project within Digital Humanities and uses as well as develops digital tools for data-acquisition, data-management, processing as well as for analyses, visualisation, communication and publication. By following such an approach, DPP envisages at gaining new insights and innovative research-

results which could not be achieved based solely on traditional methods.

In the wake of the DPP-Workshop the crucial research question shall be addressed and discussed, if and how Patterns of Power could be identified in all four case studies based on the written and archaeological sources. Furthermore, it will be debated, if common ground for all case studies can be achieved on this respective question, which shall lead ultimately to a dynamic type „Symbol of Power“ or „Sign of Power“ in the DPP OpenAtlas Database and which shall be visualised in the envisaged DPP Map Viewer.

In Case Study no. 3 (The Historical Region of Macedonia) „Symbol of Power“ or „Sign of Power“ should be applied for a better and more profound understanding of the Serbian conquest of Byzantine Macedonia in the 14th century. The correlation of the dynamics of settlement patterns and of changing borders is evident. Several scholars have tried to reconstruct the course of the border between the Serbian kingdom / empire and the Byzantine Empire on a macro-level for the whole historical regi-

on of Macedonia. However, these approaches have so far neglected to use data on the development (e.g. from hamlet to village) or on the degradation (e.g. from village to deserted village) of settlements deriving from medieval Byzantine and Serbian Slavonic charters in order to comprehend the dynamics of the respective borders on a micro-level. Moreover, a very vivid proof for the change of elites in Byzantine Macedonia, i.e. the flight or the expropriation of the Byzantine nobility and the establishment of the Serbian nobility, which is described in medieval Byzantine and Serbian charters, is the term of *exaleimma* (in Greek ἐξάλειμμα). *Exaleimma* indicates „ruined properties“, which reverted to the owner's lord (a private landlord or the state in its role as a landlord) as a result of the death or flight of its owner without leaving a proper heir.

Based on my research so far in locating and interpreting settlement patterns – and here specifically deserted villages and ruined properties as traces of destruction and of expropriation in the wake of the Serbian conquest of Byzantine Macedonia – nodes of change

can be mapped and corridors of expansion identified.

From the viewpoint of Case Study no. 3 such an approach would form a useful basis for a discussion with the aim to achieve a common ground for the dynamic type „Symbol of Power“ or „Sign of Power“.



In Between Histories: Power and Space along the Upper and Middle Course of the Syr Darya in the 7th and 8th Century CE

Maria RIEP

University Leiden, Institute for Area Studies, Netherlands

The history of the lands along the upper and middle course of the Syr Darya in the 7th and 8th century is a compilation of paragraphs from histories of large empires, drawn up from historical sources which were not written in the valleys along the Syr Darya. Visualisation of the historical processes in maps, mirrors often the spatial interpretation of these historical-geographical sources by placing the Syr Darya lands along



the border of expansionist empires. Another spatial interpretation is visualised through arrows demonstrating a fluidity of distant or absent borders, of connections from the northern steppes into the settled areas or The Silk Road traffic. More detailed topographical maps do exist, which are mostly based on archaeological surveys, demonstrating a large number of settlements. These detailed maps show a very different picture than the larger historical maps.

The problem of writing a historical-geographical history of the Syr Darya is the enormous variance of scale in both time and space in historical documents and archaeological documentation. The Tang Chinese and Arabic historical documents address the region in a few paragraphs, where they are involved in conquests in the area. The Tang geographical information mostly addresses a few generalisations. More detailed historical-geographical data come from Arabic geographers, who however discuss first the landscape as it was in the 9th century or later. The archaeological survey reports give a lot of information, but often sites are only slightly excavated and require a careful use of the dating. There

is neither a full geographical, nor a full historical record. These gaps of information show in the visualisation of the historical record of the 7th and 8th century century. Sometimes the main cities are depicted, or the valleys are named, or the location of a battle, but almost never do we see any agency, local infrastructure or power depiction.

A focus on the geographical region of the upper and middle course of the Syr Darya as a separate spatial zone provides a different interpretation of the power interplay in the larger region in the seventh and eighth century. Multi-scale mapping and studying the spatial organisation seem a valuable method of analysing agency of the Syr Darya. Multi-scale mapping provides a tool to visualise the different historical interpretations of the spatial organisation of the region. It can visualise the information on different scales from different sources and the interaction between the developments on different scales without drawing too fantastic correlations. Finally, mapping developments in spatial organisation along and around the upper and middle course of the Syr Darya, gives insight in agency of those acting in or from the Syr Darya.

However, to correlate a geographical space with a constantly developing historical scene, geographical coordinates with vague hints to historical places and vanished archaeological sites, and to visualise causes and consequences with only little information, makes the exercise very challenging. The challenges presented by this region and period seem highly suitable for exploring the strengths and weaknesses of digitising historical patterns of power. By highlighting the difficulties I have so far encountered I hope to further the discussion.



From the Chronicle to the Database Record: Evaluating Documentary evidence on Medieval Climate in Euro-Climhist

Christian ROHR

*University of Bern, Institute of History,
Switzerland*

With Euro-Climhist (www.euro-climhist.unibe.ch), documentary and instrumental evidence on weather and climate is made accessible through a user-friendly database query, including daily

weather observations as well as extreme events and long-term climatic development. Module 1 is already open to the public after a new release in November 2015. It comprises weather and climate information for Switzerland (1501-1999). Module 2 is currently in preparation and will be dedicated to weather and climate in Europe during the Middle Ages (1000-1500). Further modules are in the planning stage following the area of modern countries and starting from 1500.

In relation to the context in which documentary evidence was generated we need to distinguish between individual and institutional sources: Sources produced by individuals may have a very high – in some cases even daily or sub-daily – resolution including narratives of any weather elements, which seem to be needed for describing a climatic event. At best, they also refer to societal consequences of extreme events and to measures taken by the authorities and households. In contrast, authors are subjective in the selection, and to some extent also in the interpretation of events. Usually, the records include gaps and they end at the latest with the death



of the observer. Original records written down within the lifetime of a chronicler are in most cases correct. Records copied from older annals, chronicles, and other compilations (i.e. chronological arrangements of texts on climatic anomalies and (natural) disasters originating from different sources) are error-prone, particularly with regard to dating. Therefore, Euro-Climhist strictly distinguishes between contemporary and non-contemporary records.

Sources produced by institutions (e.g. hospitals, bishoprics, municipalities, military, ecclesiastical, or civil authorities) constitute the second category of documentary evidence. Institutional bodies were typically not primarily interested in describing climate and they often kept detailed accounts in order to document their agricultural activities in case of auditing or enquiry. The date of those activities depended on climate and weather and, therefore, constitute relevant information for historical climatology. In communities with wine production, grape harvest dates were fixed according to the grape ripening to provide a correct delivery of the tithes to the benefitted authorities. The same

procedure is known for the beginning of the grain harvest. The administrative routines involved some standardization in the way records were kept, and more importantly, institutions unlike individuals often worked in the same way for centuries and in doing so they generated very long records. They are easily quantified and statistically related to instrumental measurements, unless there is a sufficient overlap between the proxy and the instrumental series. Temperatures and precipitation in the pre-instrumental period may be estimated in this way, albeit just for periods of several months.

This paper will focus on the ongoing work for Module 2, because medieval sources force the research group to develop specific expertise both in historical source criticism and in processing the data for an online database, which can be used by professional medievalists as well as by natural scientists and lay users. It will be shown, which problems might occur with translating, interpreting, comparing, geo coding, dating and categorizing the single records.



Assessing Settlement Dynamics in Medieval Central and Western Europe

Rainer SCHREG

*Romano-Germanic Central Museum Mainz,
Germany*

For a long time continuity was the major narrative on medieval rural settlement history in Medieval Central and Western Europe. Archaeological studies revised this view over the last decades. Many regional studies showed, that early medieval settlement pattern were highly flexible. In order to understand these settlement dynamics we need in-depth local studies on the one hand, and a comparative approach on the other hand.

This paper concentrates on the challenges of comparative studies and presents a first outline of ongoing work of digitizing settlement dynamics. Based on archaeological excavations a GIS-based mapping of the existence of rural settlement provides insights in regional dynamics of rural communities. Preliminary results show regional trends in settlement dynamics, which need to be explained. For example, there seems to

be a higher degree of settlement fluctuation in Northern France than in Southern Germany.

In future this approach should be brought to a digital environment, modelling settlement dynamics and providing possibilities for regional and chronological correlations.



Searching for Networks of Power. Early Medieval Centres in Bohemia

Ivo ŠTEFAN

*Charles University, Institute of Prehistory and
Early History, Czech Republic*

The paper deals with the distribution of early medieval fortified centres in Bohemia. It will reflect the procesual and post-procesual approaches concerning the archaeological identification of political borders and show how profoundly is the archeological interpretation of power networks in Early medieval times dependent on written evidence. What would we know about early medieval Bohemia without written sources?



Digital Mapping for Antiquity: Prospects and Problems

Richard TALBERT

*University of North Carolina, Chapel Hill,
United States of America*

The lecture draws upon both current and recent activity at the Ancient World Mapping Center (awmc.unc.edu), much of it collaborative through partnership with the Pleiades project (Pleiades.stoa.org) and associated initiatives.

Three reminders: (i) techniques of digital mapping, and much of the geographical data it exploits, are by no means exclusively applicable to work on antiquity. (ii) Even for maps produced digitally the most effective means of dissemination may still be print – in particular, maps enabling overview of land-masses typically beyond the capacity of most individuals' screens: illustration from such mapping of Asia Minor and the Iberian peninsula by the Center. (iii) Purposes for which digitization is ideal in principle may go unfulfilled if accurate data is lacking (Roman milestones) or unavailable (shipwrecks).

Creative digitization transforms the prospects for understanding and reassessing ancient maps and related materials. Its value and versatility are demonstrated by the Center's reassembly of the Peutinger Map, which it shares (free) on the web with a database, together with Barrington Atlas maps on which the Peutinger routes and those of Itinerarium Antonini and Itinerarium Burdigalense are all plotted (www.cambridge.org/us/talbert). The fragments of Rome's Marble Plan await the creation of a comparable resource, although the issues of resolution and manipulation that they pose are formidable. Metadata could include a full-size (1:1,000 scale) digital mosaic of R. Lanciani, *Forma Urbis Romae* (1893-1901). Brief discussion of three further efforts by the Center to map ancient texts: Dionysius of Byzantium, *Anapylous*; Ptolemy, *Kanon Episemon Poleon* (on both a Ptolemy base and a modern one); Hierokles, *Synekdemos*.

For mapping onto a base with the physical landscape restored so far as feasible to its ancient aspect, the Center's versatile tool *Antiquity-A-La-Carte* is fundamental and transformative (<http://awmc.unc.edu>).

edu/awmc/applications/alacarte). Its base, and other layers compiled by the Center, underpin the modelling of connectivity across the Roman empire by land and sea in <http://orbis.stanford.edu>. The base has also made possible the creation of a single map with zoom and pan capacity to accompany Duane Roller's translation of Strabo, *Geography* (Cambridge University Press). All locatable physical features, places and peoples are marked, and in the online version of the text every occurrence of these names is tagged to take the reader instantly to the relevant point on the map. A map of the same type is planned for Brian Turner's translation in preparation of the geographical books in Pliny, *Natural History*. 

Old Wine into New Skins:

The Work-in-Progress
Diplomatarium Serbicum
Digitale

Žarko VUJOŠEVIĆ

*University of Belgrade, Faculty of Philosophy,
Institute for Balkan Studies of the Serbian
Academy of Sciences and Arts, Serbia*

Old Wine into New Skins: The Work-in-Progress Diplomatarium Serbicum Digitale After an introduction to the current issues of Serbian diplomatics, the paper will present the ongoing digital database of Serbian medieval charters and letters named Diplomatarium Serbicum Digitale (DSD).

Due to specific historical circumstances, the surviving medieval Serbian documentary heritage is relatively small. It comprises around 500 diplomatic units, the earliest of which date from the late 12th century. About 330 of these are documents issued by the highest authority – the rulers of medieval Serbia, while the rest come from regional lords, ecclesiastic dignitaries and various individuals. Besides foundation and donation charters for monasteries and churches, this typologically



very diverse material includes letters and many other documentary genres and is preserved in three languages: Serbian, Latin and Greek.

The internal complexity of the material is compounded by the wide geographic dispersion of the surviving specimens, of which nowadays only about 5% are kept in Serbia. That would be possible causes of the fact that a comprehensive scholarly assessment of the medieval Serbian documentary heritage is still missing. As a result, there is neither one complete collection of editions nor a catalogue with descriptions of document features relevant for research, which all makes the systematic examination of diplomatic production a difficult task.

The Institute for Balkan Studies of the SASA is trying to fill this void by making use of the advantages presented by modern information technology in the field of data storage, accessibility and handling. To that end, one of its activities is the work on creating *Diplomatarium Serbicum Digitale* (DSD) – the digital database of Serbian medieval charters and letters. The database contains the images, di-

plomatic analyses and editions of the surviving documents issued between the late 12th and early 16th century. This virtual archive brings together the material that is physically scattered in archives, libraries and private collections throughout Europe, thus creating what currently is the only complete „national“ archive of medieval documents.

The idea of the DSD has been developing in the framework of international cooperation with the Monasterium consortium and the International Centre for Archival Research (ICARUS). Ongoing activities on the DSD, as a work-in-progress, are carried out within the international projects „European Network on Archival Cooperation“ (ENArC, until 2015) and the current „Community as Opportunity: The creative archives“ and users‘ network“ (CO:OP), financed by the European Commission. Appropriate software was developed in 2013, and since 2015 the database has been accessible at a separate internet domain (www.bisanu.rs). It is now serving as a „virtual workspace“, but it should eventually be transformed into a platform for the presentation and use of the material included both

for academic research and informative purposes. What remains the main challenge, however, is collecting digital images/scans of the documents for which permission from the owning institutions has still to be obtained.



Environment as ‚Total Phenomenon‘ of History?

Challenges of Co-evolutionary Narratives in Environmental History

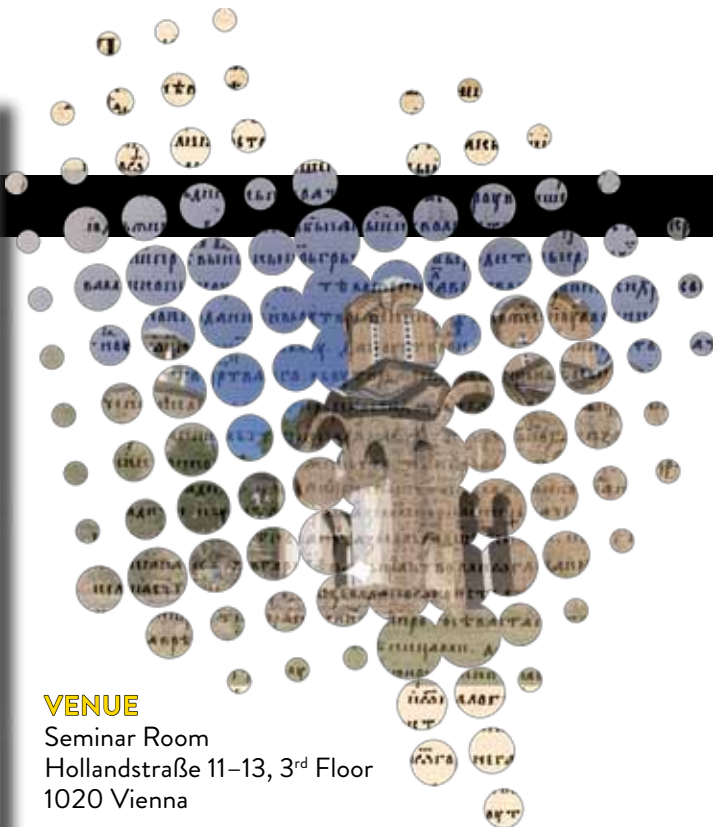
Verena WINIWARTER

Alpen-Adria University Klagenfurt, Institute of Social Ecology, Austria

The times of reductionist uses of „nature“ as causal factor („determinism“) in historical narratives are long gone. Common narratives of environmental history nowadays conceptualize ‚Nature‘ as resource endowment which limits and constrains in a static way, or see the variability of the endowment (often called ‚conditions‘) as constraint, even threat, but also as agent of change. Nature is seen as a source of instability. Environment is also being used as adaptive challenge in terms of (co-) evolution with side effects.

Anthropogenic degradation of the endowment is an argument to explain social dynamic or vice versa, anthropogenic intervention and the dynamic it causes is shown to result in effects for natural systems. In yet other narratives, nature serves as livelihood, based on localized, detailed knowledge which creates possibilities against social hierarchies - the ‚robust peasant/slave‘-story. So far, the more advanced ecological and sociological concepts, among them the idea of agro-ecological niche construction which leads to ecological inheritance have not been made productive in environmental history. The lecture will show the potential for interdisciplinary co-operation that is implied in such narratives.





VENUE

Seminar Room
Hollandstraße 11–13, 3rd Floor
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HOSTED BY

Austrian Academy of Sciences
Institute for Medieval Research

INFORMATION

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