

A Race Against Time

The Impact of Contemporary Environmental and Demographic Changes on the Research of the Historical Geography of Byzantium

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Abstract In the first part of the article, infrastructural developments, technological progress and demographic changes in the world and in Europe, especially in the Balkan Peninsula, are addressed. This overview is provided in order to contextualise in which way the basis for historic-geographical research of the Byzantine World, conducted by the project *Tabula Imperii Byzantini* (*TIB*), has changed since 1966. In the second part of the article strategies are emphasised, how the race against time and the spirit of time should be approached, based on the current research of the *TIB Balkans*, by applying 'regressive engineering', Digital Humanities and Geocommunication.

Keywords Historical geography. Tabula Imperii Byzantini (*TIB*). Balkans. Digital humanities. Regressive engineering. Geocommunication.

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1 Introduction

The aim of this article is to outline in a comprehensible way, how the living environment has changed over the past fifty years in the former core areas of the Byzantine Empire (i.e. especially in the Balkan Peninsula) due to infrastructural developments, technological progress and demographic changes, which leads directly to the question, whether and how the Long-Term Project *Tabula Imperii Byzantini* (*TIB*) of the Austrian Academy of Sciences, and here especially the *TIB Balkans*, has already adapted its historic-geographical research work in the present or should adapt it in the near future. For this reason, the article is divided into two parts. The first part offers an observation and survey of the changes in our living environment in the twenty-first century and their consequences for research in Historical Geography, while the second deals with the adaptation of existing working methods and the introduction of new methods by the *TIB Balkans* since 2016. Hereby, the year 2016 was deliberately chosen as a turning point, because the *TIB* has been designated as a Long-Term Project of the Austrian Academy of Sciences in this very year after an excellent international evaluation with the author as Project Leader of the *TIB Balkans* since 1 January 2016, and his colleague Andreas Külzer as Project Leader of *TIB Asia Minor*.

Therefore, the article should be regarded as a presentation of how a project based on fundamental research, such as the *TIB*, breaks new ground in the twenty-first century and should continue to break it in order to remain nationally and internationally competitive in the field of Historical Geography in the years to come.

2 State and Changing Circumstances of Research

Since the 1960s, in which the *TIB* has begun its research work, Europe and the entire world have experienced a rapid technical progress, which is currently accompanied by the unstoppable digitisation of data and content. It is, therefore, not surprising that these developments cannot and do not leave the *TIB* unaffected, which means that the conditions for historic-geographical work in general are constantly changing. It should be noted, by no means in a provocative way, that Historical Geography is persistently confronted with three main factors:

- a race against time;
- a change or decay of relevant monuments and at the same time;
- a need to keep pace with the spirit of time (i.e. the *Zeitgeist*).

I will address all three of the aforesaid factors in detail below and would like to show both the challenges for our future scholarly work

as well as new lines of development (Popović 2014). In the past decades it has become apparent that we are demographically in a state of upheaval all around the world. Two aspects of crucial importance for the Historical Geography of the Byzantine World (Sundhaussen 2005) are in my opinion the keywords 'rural exodus' and 'urbanisation'.

The United Nations published a report in 2014, according to which the urban population worldwide rose from 746 million people in 1950 to 3.9 billion in 2014. For the year 2045 it is predicted that the urban population on our planet will exceed the mark of six billion. The strongest processes of urbanisation are expected in India, China and Nigeria. The associated, considerable infrastructural challenges lie in the creation of sufficient capacities in the segments of living space, urban infrastructure, public transport, energy supply, jobs, educational institutions and health care. The management of urban centres is, thus, seen as the greatest administrative task of the twenty-first century. In contrast, the world's rural population is steadily declining. In 2014 it was 3.4 billion people and is expected to drop to 3.1 billion by 2050 (United Nations 2014). The *Neue Zürcher Zeitung* reported already in 2007 that, for the first time in world history, there were more city than rural dwellers on our planet (*Neue Zürcher Zeitung*, 27 June 2007).

At the same time, green spaces in urban areas are continuously being reduced due to urban expansion and transformation, especially due to building densification. The Viennese district newspaper for the twelfth district reported for example in January 2020 (*bz Wiener Bezirkszeitung Meidling*, 8-9 January 2020):

Wien hat nämlich gesamt fast 2.000 Hektar Grünfläche weniger als noch vor 20 Jahren. 150,66 Hektar waren es 2000 in Meidling. Jetzt verfügt der Bezirk über 101,42 Hektar Grünfläche.

Vienna has a total of almost 2,000 hectares less green space than it did 20 years ago. In 2000 it was 150.66 hectares in Meidling. Now the district has 101.42 hectares of green space. (Author's transl.)

In order to counteract this development, the German futurologist Daniel Dettling (born in 1975) recommended the following in a guest commentary in the Austrian media (*Die Presse*, 29 August 2019; Bastin et al. 2019):

Immer mehr Menschen wohnen weltweit in Städten und Ballungsgebieten. Die Folgen des Klimawandels zwingen in den nächsten Jahren vor allem die Städte zur Anpassung. Eine neue Studie der ETH Zürich prognostiziert für das Jahr 2050 einen Anstieg der durchschnittlichen Temperaturen in Europas Städten um bis zu vier Grad im Sommer und um fünf Grad im Winter. [...] Die Städ-

te müssen in Zukunft grüner werden. Dazu gehören nachhaltiges Bauen, mehr Grünflächen und Wälder sowie urbane Lebensmittelmärkte. Die Landwirtschaft muss zur Stadtwirtschaft werden. Mehr Landwirtschaft in den Städten sorgt für besseres Klima, mehr Artenvielfalt und eine nachhaltige Stadtentwicklung.

More and more people live in cities and metropolitan areas around the world. The consequences of climate change will force cities in particular to adapt in the next few years. A new study by the ETH Zurich predicts an increase in average temperatures in European cities of up to four degrees in summer and five degrees in winter for 2050. [...] The cities must become greener in the future. This includes sustainable building, more green spaces and forests, and urban food markets. Agriculture must become an urban economy. More agriculture in the cities ensures a better climate, more biodiversity and sustainable urban development. (Author's transl.)

With regard to the number of the rural population, the difference between the current situation in Austria – 2 to 3% of the total population worked in agriculture in 2014 – and during the Byzantine millennium is striking due to the technical developments of the last two centuries. According to the Byzantinist Johannes Koder, the agriculture in the Byzantine Empire formed the natural backbone of the state. It was by far the largest branch of production and was likely to have tied up over 80% of the population in times of peace, which is why the urban settlements (especially after the sixth century) had a clearly agrarian character (Koder 2001, 56; 2016a; 2016b).

The Byzantine, Serbian and Bulgarian medieval charters and the Ottoman tax registers (in Turkish *defter*) prove, amongst others, the agrarian character of the landscape in the Balkan Peninsula in Byzantine and Ottoman times. The evaluation and analysis of these written sources is one of the core scholarly tasks of the *TIB Balkans* and reveals a multi-layered settlement structure of the past (Popović 2009; 2010; 2012; 2015; 2016; 2017).

The worldwide processes of urbanisation in combination with a continuous rural exodus or migration in the twenty-first century represent a great challenge for the scholarly work and tasks of Historical Geography, thus also for the *TIB* in its core areas, the Balkan Peninsula and Asia Minor, now as well as in the near future. A crucial element of our research work – based on four categories of sources (i.e. the written sources, archaeological data, the toponyms and the state of landscapes) – are regular research trips in the respective *TIB* areas (Popović 2014, 10-17).

These trips are meticulously planned for years in advance and are based on open questions on localisations in the respective areas of research. Following up on these questions, a travel route is composed

before the research trip based on various maps and additional data sets, which is then accomplished with a great zeal, expenditure of time and personal commitment *in situ*. Due to the climatic conditions and the prevailing vegetation in the areas of research, these trips take place mainly in the periods from late May to mid-June or late August to mid-September and usually last from two to four weeks. During these trips the scholars of the *TIB* work every day – also on weekends – due to the favourable light conditions and the aim to achieve maximum efficiency in the localisation of monuments and toponyms as well as in their description and their documentation by digital photography and GPS. The journey to the respective destinations in the areas of research by car, the hikes in the landscape, the orientation *in situ* based on maps, compass and GPS device and the inquiries with the local population in different local languages require of the scholars of the *TIB* appropriate professional qualifications, a high level of concentration, a thoughtful and prudent approach as well as an adequate physical performance.

As an example of the research work *in situ* just described, I would like to highlight the ascent to the Monastery of the Holy Mother of God in Treskavec, to the North of the city of Prilep in the Republic of North Macedonia, which my retired colleague Peter Soustal and I undertook for my volume *TIB* 16 (“Macedonia, Northern Part”) on 21 June 2016. We started with water supplies and little provisions in order to avoid weight at 9 o’clock in the morning in the partially deserted village of Dabnica at 924 metres above sea level with the aim to locate the remains of the medieval Eastern route to the monastery and to document them photographically and with GPS. We intended to reach the monastery on this route as well, having already used the Early Modern Western route in September 2008 [fig. 1] (Popović, Schmid, Breier 2017). Peter Soustal and I succeeded to locate the beginning of the Eastern route, to follow it and to reach our destination at 1,280 metres above sea level around 2 p.m. The maximum temperature on that day was around 35° Celsius with a cloudless sky. After detailed documentation of the monastery, its church and the surrounding area, we started the descent at 3 p.m. following the same path and reached our starting point at 4:30 p.m.

During our research trips in search of monuments and toponyms *in situ*, we are in many cases largely dependent on the knowledge and support of the local population, which in turn requires significant language skills from our part. Without the hospitable and often selfless help of the locals, certain places in difficult terrain are often very hard or impossible to find. As a vivid example, I would like to mention the Church of *Sveti Prorok Ilija* (Holy Prophet Elijah) between the villages of Gabrene and Skrät in South-Western Bulgaria, which we found only with the help of an elderly peasant woman from Gabrene called Petra in June 2007, because the building has been

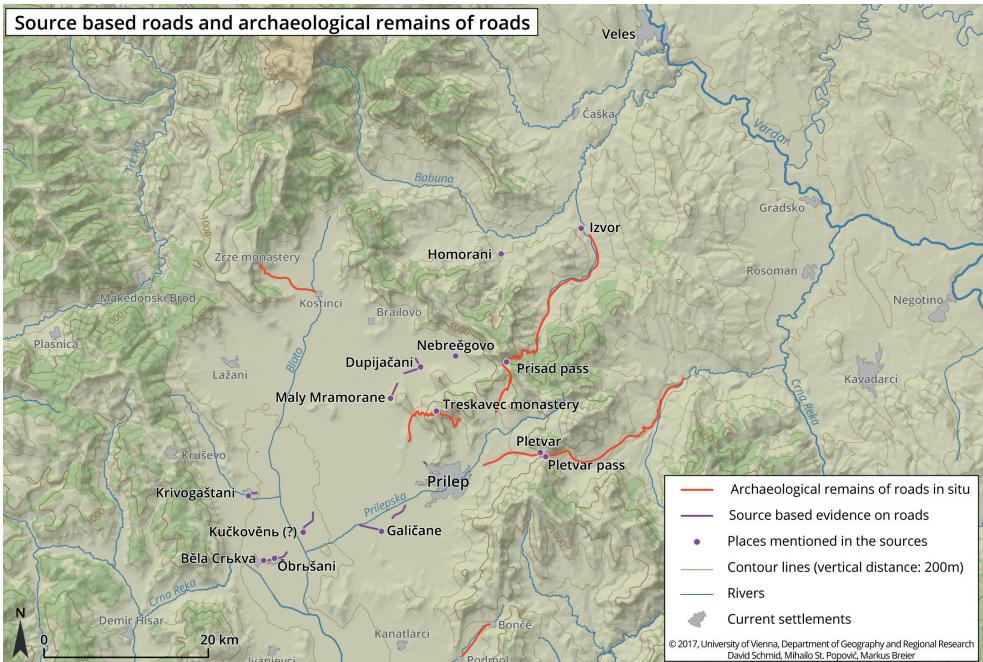


Figure 1 Markus Breier, Mihailo St. Popović, David Schmid, "Source Based Roads and Archaeological Remains of Roads". 2017. Department of Geography and Regional Research, University of Vienna, Vienna

solely preserved in its foundations and is located amidst abundant vegetation in the woods [fig. 2].

This example shows the usefulness of documenting a monument or toponym using GPS, because archaeological research will be made possible in the near or distant future, even if there should be no information available from the local population anymore or if the monument should no longer be visible.

The aforesaid *race against time* becomes more obvious and noticeable from year to year, when we have the depopulation of the rural regions in Europe (also in the Balkan Peninsula) in mind, which we, as scholars of the *TIB*, witness time and again in deserted settlements. The processes of desertification have reached considerable proportions in certain regions of the Balkan Peninsula as well as in Europe as a whole.

As an example, I would like to highlight the village of Lomnica in South-Western Bulgaria, which had 184 inhabitants at the beginning of the 1970s (Koledarov, Mičev 1973, 156) and only two (!) during my research trip in June 2010, which makes the consequences of the aforesaid problem more than obvious. The emigration of the local population and the resulting dissolution of the village structures has



Figure 2 Mihailo St. Popović, church of Sveti Prorok Ilja (Holy Prophet Elijah) between the Villages of Gabrene and Skrät in South-Western Bulgaria. 2007. *Tabula Imperii Byzantini* 16. Vienna: Austrian Academy of Sciences

far-reaching consequences for the respective states and their societies, but also for the discipline of Historical Geography.

The French ethnologist and anthropologist Marc Augé (born in 1935) writes about the relationship between place, inhabitant and history:

The inhabitant of an anthropological place does not make history; he lives in it. The difference between these two relationships to history is still very clear to my generation of Frenchmen and women, who lived through the 1940s and were able in the village (perhaps only a place they visited for holidays) to attend Corpus Christi, Rogation days or the annual feast-day of some local patron saint ordinarily tucked away in an isolated chapel: when these processions and observances disappear, their memory does not simply remind us, like other childhood memories, of the passage of time or the changing individual; they have effectively disappeared – or rather, they have been transformed: the feast is still celebrated from time to time, to do things the old way, just as a little threshing is done in the old way every summer; the chapel has been restored and a concert or show is sometimes put on there. These re-

furbishments cause a few perplexed smiles and a certain amount of retrospective musing among the older locals: for what they see projected at a distance is the place where they used to believe they lived from day to day, but which they are now being invited to see as a fragment of history. (Augé 2008, 45)

In the core areas of the *TIB* historical settlement structures are abandoned, whereas toponyms remain in the landscape as silent witnesses. The result is a kind of 'Big Country', having the title of the film with the same name with the actor Gregory Peck (1958) in mind, a 'Big Country', which is characterised by abundant flora and fauna without human presence or intervention.

This phenomenon is to be seen globally. The Austrian press reported quite recently on the worldwide disappearance of cities, countries, landscapes and rivers. Examples are the rainforest in the Congo Basin, the Yamuna River in India, the Chihuahua Desert on the border between Mexico and the USA, the Great Wall of China and the medieval clay buildings in Timbuktu (*Die Presse*, 9 February 2020).

The rapid expansion of the transport infrastructure and the acceleration of traffic have consequences for the world in general, and for the Balkan Peninsula in particular, which Marc Augé (2008, 28) describes as follows:

Its concrete outcome involves considerable physical modifications: urban concentrations, movements of population and the multiplication of what we call 'non-places' [...]. The installations needed for the accelerated circulation of passengers and goods (high-speed roads and railways, interchanges, airports) are just as much non-places as the means of transport themselves, or the great commercial centres, or the extended transit camps where the planet's refugees are parked.

This leads us to the aforesaid factor of the *change or decay of relevant monuments*, on which the same author writes:

The monument, as the Latin etymology of the word indicates, is an attempt at the tangible expression of permanence or, at the very least, duration. [...] Without the monumental illusion before the eyes of the living, history would be a mere abstraction. The social space bristles with monuments – imposing stone buildings, discreet mud shrines – which may not be directly functional but give every individual the justified feeling that, for the most part, they pre-existed him and will survive him. (Augé 2008, 48-9)

Fortunately, the continuous, worldwide media coverage of cultural monuments has made a significant contribution to sensitising the

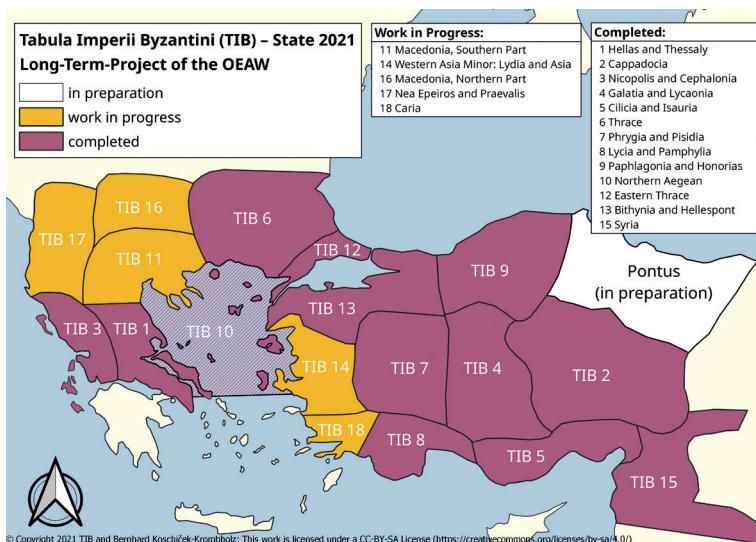


Figure 3 Bernhard Koschick-Krombholz, Mihailo St. Popović, the state of the *Tabula Imperii Byzantini* in 2021. Austrian Academy of Sciences, Vienna

authorities and the public in our times, and has consequently led in many cases to the preservation and – sometimes excessive – conservation of monuments (Kila 2012; Kila, Zeidler 2013).

Scholarly projects at the Austrian Academy of Sciences, including the *TIB* and especially the *TIB Balkans*, have a long tradition of contributing significantly to the research of the World's Cultural Heritage. Since 1966, monuments and their (then) current state have been systematically documented by means of slides during research trips of the *TIB*. This unique collection of Byzantine monuments – around 52,000 slides and thousands of black and white photographs – is a rich cultural asset and a focal point of current and future *TIB* research work. In this way, monuments in the Mediterranean and their fate in the past decades can be embedded and contextualised within the World's Cultural Heritage.

A significant contribution in this respect is also made by the *TIB Balkans*, here its volumes *TIB 16* ("Macedonia, Northern Part"; Mihailo St. Popović) and *TIB 17* ("Nea Epeiros and Praevalis"; Mihailo St. Popović) [fig. 3], as well as its accomplished or current sub-projects "Die digitale Tabula Imperii Byzantini (Dig-TIB) als Beitrag zum Weltkulturerbe"¹, "Byzantino-Serbian Border Zones in Transition: Mi-

¹ https://tib.oeaw.ac.at/sub_projects/digbib.



Figure 4a Ljiljana Popović, the Antique Theatre in Ohrid, Republic of North Macedonia. 1988.
Private Collection of the Author

Figure 4b Mihailo St. Popović, the Antique Theatre in Ohrid, Republic of North Macedonia. 2008.
Tabula Imperii Byzantini 16. Austrian Academy of Sciences, Vienna

gration and Elite Change in pre-Ottoman Macedonia (1282-1355)², "Cultural Heritage in Times of World War I: The Case of the Austro-Hungarian Relief Map of Montenegro (1916-1918)"³ and "Beyond East and West: Geocommunicating the Sacred Landscapes of 'Duklja' and 'Raška' through Space and Time (11th-14th Cent.)".⁴

At this point, it should be emphasised that numerous positive initiatives and projects for the preservation and conservation of monuments have been accomplished or are conducted at the moment in the Balkan Peninsula, which are illustrated by [figs 4a-b] as vivid examples.

According to Marc Augé (2008, 55), the construction of bypasses and the resulting reorganisation of space have also consequences for the monuments in a region:

Every town or village not of recent origin lays public claim to its history, displaying it to the passing motorist on a series of signboards that add up to a sort of "business card". Making the historical context explicit in this way, which in fact is quite a recent practice, coincides with a reorganization of space (the creation of bypasses and main motorway routes avoiding towns) that tends, inversely, to short-circuit the historical context by avoiding the monuments that embody it.

Cities are increasingly turning into museums, while bypasses, motorways and high-speed trains ignore or help to avoid them:

Motorway travel is thus doubly remarkable: it avoids, for functional reasons, all the principal places to which it takes us; and it makes comments on them. Service stations add to this information, adopting an increasingly aggressive role as centres of regional culture, selling a range of local goods with a few maps and guidebooks that might be useful to anyone who is thinking of stopping. [...] In the France of thirty years ago, the *routes nationales*, departmental main roads and railways used to penetrate the intimacy of everyday life. (Augé 2008, 79)

And elsewhere (Augé 2014, 123):

Die Großstädte definieren sich zunächst einmal durch ihre Fähigkeit zum Import oder Export von Menschen, Produkten, Bildern und Nachrichten. In räumlicher Hinsicht bemisst sich ihre Bedeu-

² https://tib.oeaw.ac.at/sub_projects/borderzones.

³ https://tib.oeaw.ac.at/sub_projects/montenegro.

⁴ https://tib.oeaw.ac.at/sub_projects/holdura.

tung an Qualität und Umfang des Autobahn- oder Eisenbahnnetzes, das sie mit ihren Flughäfen verbindet. Ihre Außenbeziehung hinterlässt gerade dann ihre Spuren in der Landschaft, wenn die als «historisch» bezeichneten Zentren zu Anziehungspunkten für immer mehr Touristen aus aller Welt werden. [...] Globalisierung bedeutet auch Urbanisierung der Welt, doch Urbanisierung der Welt bedeutet zugleich einen Wandel der Stadt, die sich neuen Horizonten öffnet.

The big cities define themselves first of all by their ability to import or export people, products, images and messages. In spatial terms, their importance is measured by the quality and extent of the motorway or railroad network, which connects them with their airports. Their relationship with the outside world leaves especially its mark on the landscape, when the centres designated as “historic” become attractions for more and more tourists from all over the world. [...] Globalisation also means urbanisation of the world, but urbanisation of the world means at the same time a change of the city, which opens up to new horizons. (Author's transl.)

However, the income from tourism, even if it is based on a reorganisation of space with corresponding motorway signs, contributes in my opinion to the conservation and restoration of monuments as well as to their analysis and interpretation. An example is the project *Skopje 2014* in the capital of the Republic of North Macedonia, which has led, amongst others, to a systematic archaeological excavation of the elevation *Kale* since 2006.

Museums all over the world play a crucial role in communicating the World's Cultural Heritage by preserving and researching artefacts and monuments, as expressed in a brochure by the British Museum.⁵

The British Museum tells the story of cultural achievement throughout the world, from the dawn of human history more than two million years ago until the present day. The Museum is a unique resource for the world: the breadth and depth of the collection allows the world's public to re-examine cultural identities and explore the connections between them.

From the perspective of *TIB* research, the narrowing of the view to monuments, which are made known to the general public through museums or the media, is neither expedient nor desirable. To put it simply, the aforesaid Church of *Sveti Prorok Ilija* (Holy Prophet Eli-

⁵ The British Museum (2019). *The Parthenon Sculptures*. London.

jah) near Gabrene is just as important and significant for the *TIB* as the elevation *Kale* in Skopje. However, there are limitations to raising public awareness for historical landscapes and monuments, because the perception of space has changed fundamentally due to the digitisation of our world, which in turn leads us to the third aforesaid factor, namely the *spirit of time* (i.e. the *Zeitgeist*).

Without doubt, this is a question of age and generation. There is a clear tendency to use digital tools and to access the virtual world among pupils and students in our part of the world. The German psychiatrist Manfred Spitzer (born in 1958) writes about this issue (2018-19, 212):

Wir wissen aus anderen Untersuchungen, dass der Verlust des Wissens über die Natur zu einer wachsenden Entfremdung von ihr führt. Die Menschen sorgen sich um das, was sie kennen. Bei einem Anstieg der in Städten lebenden Weltbevölkerung um 160 000 Menschen täglich ist es erforderlich, dass Naturschützer die Verbindung der Kinder zur Natur wiederherstellen.

We know from other studies that the loss of knowledge about nature leads to increasing alienation from it. People care about what they know. With the world's urban population increasing by 160,000 a day, conservationists need to reconnect children with nature. (Author's transl.)

Marc Augé (2014, 124) adds on this subject:

Auch der Einzelne hat in gewisser Weise eine Dezentrierung seiner selbst erfahren. Er ist mit Instrumenten ausgerüstet, die ihn ständig in Kontakt zur fernsten Außenwelt bringen. Sein Handy ist zugleich auch Fotoapparat, Fernsehgerät und Computer. So kann er als Vereinzelter in einer intellektuellen, musikalischen oder visuellen Umwelt leben, die vollkommen unabhängig von seiner aktuellen physischen Umgebung ist.

In a certain way, the individual has also experienced a decentration of himself. He is equipped with instruments, which bring him into constant contact with the most distant worlds. His mobile phone is also a camera, television and computer. So he can live as an isolated person in an intellectual, musical or visual environment, which is completely independent of his current physical environment. (Author's transl.)

Associations are also becoming increasingly aware of this fundamental change in our societies. The Vice President of the Austrian Alpine Club, Wolfgang Schnabl (born in 1960), writes (2019, 3) for

example about the virtual world and a balance to be striven for in dealing with technology:

Leben wir doch inzwischen in einer Welt, die zunehmend von der faktischen Realität unabhängig wird, deren Wirklichkeit sich immer mehr in der virtuellen Realität abspielt. [...] Zum anderen wachsen unsere Kinder in einer Welt auf, die immer virtueller wird, die bei falschen Entscheidungen einen Reset-Knopf bietet und so einfach einen Neustart erlaubt oder in der man ohnehin, wie in Computerspielen, mehrere Leben hat.

We are now living in a world that is becoming increasingly independent of factual reality, the reality of which is increasingly taking place in virtual reality. [...] On the other hand, our children grow up in a world that is becoming more and more virtual, that offers a reset button in the event of wrong decisions and, thus, easily allows a restart, or in which one has several lives anyway, as in computer games. (Author's transl.)

Since the end of the 1990s, the spirit of time (i.e. *Zeitgeist*) regarding the virtual world has also affected and sometimes revolutionised History and Historical Geography. At this point, it should be emphasised that, in my opinion, both fundamental research and Digital Humanities are meanwhile of the same importance for the *TIB*, especially for the *TIB Balkans*, which I will explain below in more detail. However, the Digital Humanities should be used with a sense of proportion and be regarded as an enrichment of the fundamental research in the sense of an expansion of methods.

From the perspective of Historical Geography, the autopsy in the field must be and remain an integral part of the scholarly approach despite all technical innovations, because landscape and space cannot be recorded and interpreted solely with the help of satellite images sitting at the office desk (Popović 2013).

Walking and hiking through actual (former historical) landscapes – in the literal sense – create a deeper understanding of the pre-modern space-time perception.

The aforesaid thoughts are by no means to be considered as a pessimistic view of our present. Rather, I have summarised and commented on data, facts and perceptions in order to use them as a basis to pose the question to what extent our Long-Term Project *TIB* at the Austrian Academy of Sciences can and should reposition itself in such ongoing dynamic developments in the present as well as in the near future.

3 The Reaction of the *TIB Balkans*, Its Adaptation and the Expansion of Methods Since 2016

Based on all aforesaid aspects, I would like to explain, what kind of measures the *TIB Balkans* and I, as its Project Leader, have taken and are taking, with regard to the major changes in the Balkan Peninsula as well as to the technical progress since the 1960s, in order to continue to be future-oriented and stay competitive. Above all, I would like to emphasise that the *TIB* is a unique project in the field of Byzantine Studies worldwide. There is no other comparable international project that researches the Historical Geography of the Byzantine World in this scholarly depth and length of time. The initiatives in the field of Digital Humanities at the Austrian Academy of Sciences and also the related developments in Byzantine Studies in the last couple of years have encouraged the *TIB Balkans* to step up its efforts to provide a platform for the adequate presentation and sustainable usage of its data, which was and is published in respective *TIB* volumes. Such an initiative is and can only be implemented with a team of young, committed scholars funded by third-party sub-projects of the *TIB Balkans*, namely Bernhard Koschiček-Krombholz, Jelena Nikić, David Schmid, Dorota Vargová, Florian Wiltschnig, Vratislav Zervan and the associated scholars Veronika Polloczek and Moisés Hernández Cordero.⁶

Therefore, the *TIB*, here especially the *TIB Balkans*, is pursuing three main lines of development.

The first line of development comprises the ongoing scholarly work and resulting printed publications, i.e. the *TIB* volumes with their maps on a scale of 1:800,000, following the Long-Term Project scheme of the Austrian Academy of Sciences until 2027. On this basis the *TIB* volume "Bithynia and Hellespont" (*TIB* 13, Klaus Belke) was published in 2020. Another volume - "Macedonia, Southern Part" (*TIB* 11, Peter Soustal) will be printed in 2022. At the end of 2023 I will submit my volume entitled "Macedonia, Northern Part" (*TIB* 16) for evaluation and publication to the Austrian Academy of Sciences. Until 2027 the *TIB* volumes "Western Asia Minor: Lydia and Asia" (*TIB* 14, Andreas Külzer), "Nea Epeiros and Praevalis" (*TIB* 17, Mihailo St. Popović) and "Caria" (*TIB* 18, Fritz Hild and Andreas Külzer) should also be finished [fig. 3].⁷

The second line of development is constituted by the scholarly, archival and digital (re)processing of published and unpublished data of the *TIB*, which has been collected from 1966 until 2016. The year 2016 is to be regarded as a marker, because the *TIB* is since then following

⁶ <https://tib.oeaw.ac.at/team>.

⁷ https://tib.oeaw.ac.at/current_status.

the aforesaid Long-Term Project scheme. Our published and unpublished data comprises three main collections: the slides, which were made during *TIB* field trips from 1966 until 2007-08 (about 52,000); thousands of black-and-white photographs from the 1960s and 1970s from different areas of research; the published *TIB* volumes 1-10, 12, 13 and 15 with their respective maps.

Since 2016 the *TIB Balkans* has been applying ‘regressive engineering’ to these data sets through the aforesaid third-party funded projects. In this way we are and will be able to digitise and process them, to save them sustainably within the technical framework of the Austrian Academy of Sciences, to present them to the scholarly community and general public and to preserve them for future generations.

First, crucial results of our endeavour are to be found on the *TIB* homepage, which are constantly expanded and enriched. Thus, a complete list of geographic registers of the published *TIB* volumes 1-10, 12 and 13 may be accessed.⁸ It enables the user to search and compare the toponomastic evidence from all areas of research of the *TIB* since 1966, whereby previously overlooked connections may be recognised and new research questions are stimulated.

Each geographic register of a published *TIB* volume may also be accessed and researched separately (including *TIB* 15 “Syria”). In all lists the pdf files of the respective *TIB* volume may be accessed by selecting the page number, which is tagged to the respective page in the volume’s pdf. Due to copyright regulations of the Austrian Academy of Sciences these functions are available for the *TIB* volumes 1-7, 12 and 13. As a consequence, the toponomastic evidence may not only be compared between different areas of research, but also the historical and archaeological context may be read in the respective headwords (*lemmata*).

Finally, a ‘best practice’ has been created for the slides of the *TIB* via the third-party funded project “Die digitale *Tabula Imperii Byzantini* (Dig-TIB) als Beitrag zum Weltkulturerbe”. For the time being, 7,172 slides of the *TIB* volumes 5 (“Cilicia and Isauria”, Friedrich Hild; 4,981 slides), 12 (“Eastern Thrace”, Andreas Külzer; 1,252 slides) and 16 (“Macedonia, Northern Part”, Mihailo St. Popović; 939 slides) have been scanned and embedded with the respective metadata in the open-source software *CollectiveAccess*.⁹ These slides may be searched and compared and their metadata viewed, but they may not be downloaded for scholarly or private use due to copyright regulations of the Austrian Academy of Sciences. As a next step the *TIB Balkans* will try to include the slides from the *TIB* volumes 1 (“Hellas

⁸ <https://tib.oeaw.ac.at/digbib>.

⁹ <https://catalogue.tib.oeaw.ac.at>.

and Thessaly”), 3 (“Nicopolis and Cephalonia”) and 6 (“Thrace”), subject to successful applications of third-party funded projects.

The third line of development is state of the art Geocommunication of current content and results of the *TIB Balkans*. Therefore, the *TIB Balkans* is creating, developing and upkeeping the online atlas (front-end) “Maps of Power: Historical Atlas of Places, Borderzones and Migration Dynamics in Byzantium (*TIB Balkans*)” via its aforesaid third-party funded projects since 2019.¹⁰

Scholarly results as well as digital photographs of the *TIB Balkans*, i.e. from the *TIB* volumes 16 (“Macedonia, Northern Part”, Mihailo St. Popović) and 17 (“Nea Epeiros and Praevalis”, Mihailo St. Popović), and of related sub-projects of the *TIB Balkans* are regularly embedded in English into our back-end, the *TIB OpenAtlas Database*.¹¹ This gives us the opportunity to continuously present our latest research and to make additions or corrections to the data at any time, which has already been entered.

The online atlas (front-end), which is developed in cooperation with the Department of Geography and Regional Research of the University of Vienna (Prof. Dr. Karel Kriz), enables live queries of the embedded data and the download of current map views as an image. Via additional map layers of the printed maps *TIB* 1 to *TIB* 16 on a scale 1:800,000 and their respective pictograms in the web application the queried data is connected visually to the printed volumes of the *TIB* and their headwords (*lemmata*), which may be searched separately in the aforesaid lists. For the time being, the online atlas is further developed by the aforesaid third-party funded projects of the *TIB Balkans* until autumn 2023.

This is a prerequisite for the next step, which I would like to realise until 2027 and which will comprise the technical merging and harmonisation of the second and third lines of development in a joint, new web application with a strong emphasis on Geocommunication. In this way, we will permanently combine ‘regressive engineering’ with ongoing research. Strong emphasis will be put during this process on techniques like enhanced Story Maps, 3D scans and models [fig. 5], filming with drones and respective movies [fig. 6], which all form an integral part of the project HOLDURA and have yielded first, remarkable results during a field trip to Montenegro from 24 September to 10 October 2021.

In my opinion, the aforesaid aspects illustrate the complexity of our research work within the *TIB Balkans*, not only in terms of content, but also from a methodological, technical, public- and future-oriented

¹⁰ <https://data1.geo.univie.ac.at/projects/tibapp>; <https://oeaw.academia.edu/MapsofPower>.

¹¹ <https://openatlas.eu/>.



Figure 5 Moisés Hernández Cordero, “Screenshots of the 3D Model of the Austro-Hungarian Relief Map of Montenegro” (1916-18). 2020. Austrian Archaeological Institute, Austrian Academy of Sciences, Vienna

Figure 6 Lukas Neugebauer, “Drone Picture of the Church Prečista Krajinska in Montenegro”. 2021. Department of Geography and Regional Research, University of Vienna, Vienna

point of view. While we will certainly neither be able to divert the *spirit of time* as historical geographers nor to prevail in the race against time, I deem the aforesaid second and third line of development a viable approach to document, preserve, provide our expertise and data to the national and international scholarly community as well as to the general public and especially to raise awareness for our field of study and its aims as well as obstacles in the twenty-first century.

I would like to close with the words of Marc Augé (2008, 29):

The world of supermodernity does not exactly match the one in which we believe we live, for we live in a world that we have not yet learned to look at. We have to relearn to think about space.

In my opinion this applies not only to the future, but also to the past. It is to this that the *TIB Balkans* contributes significantly and will continue to contribute in the years to come.

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