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oriented towards agricultural primary production?**

A review and discussion

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market system**

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in 9th–12th-century Central Europe**

Ivo Štefan

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EDITORIAL

This issue steps slightly outside the usual stream of *Archeologické Rozhledy*. To facilitate debate on the economic role of early medieval agglomerations, their provisioning, and their relationships with surrounding settlements, we have prepared a special issue bringing together five discussion papers under the title ‘Socio-economic relationships between centres and hinterlands in Great Moravia and beyond’.

The special issue was initiated by Jiří Macháček, who submitted his paper in spring 2025. In doing so, he returned to a line of argument he had followed in *Archeologické Rozhledy* 3/2015 with his article ‘On the subject of Great Moravia, early medieval archaeology and archaeologists in general’. At that time, much of the heat of the debate was around the statehood of the entity we call Great Moravia, sometimes even the Great Moravian Empire. For laypersons outside the archaeological and historical business, the distinction may look like the sort of problem capable of disturbing little more than the dust on library shelves. But yet, questions of Great Moravian statehood become considerably less esoteric once we realise that Great Moravia is often recruited as an instrument of current politics and state legitimacy.

More than a decade ago, Macháček argued that the political entity spanning Moravia, western Slovakia, and other parts of Central Europe for much of the 9th century lacked many attributes of a state, let alone an empire. One strand of his arguments concerned the market. Great Moravia, he argued, was only weakly commercialised; its major agglomerations were not ordinary market centres, and the transfer of goods between centres and hinterland was governed predominantly by political dependency, reciprocity, and redistribution rather than by an integrated market system.

In his piece in the present issue, Macháček develops this earlier position and frames it more explicitly around three competing models of how Great Moravian agglomerations were provisioned and how they related to their hinterlands. He concludes that the centres were not agriculturally autarkic, but neither were they provisioned principally through markets. Centres depended materially on surrounding rural settlements, but food and other resources reached them predominantly through redistribution, reciprocity, obligations, and negotiated relationships rather than simply through farmers selling surplus at market.

A more conspicuous difference between the 2015 and 2026 papers is formal but by no means trivial. The present article, together with the responses that follow it, is published in English. This makes it accessible to a much wider scholarly audience, and the debate does not become entrenched within national borders. In my opinion, historical archaeology in Central Europe has too often been partitioned along national and linguistic boundaries, which can make scholarly debates inward-looking, limiting field progress and new views. Yet the questions raised in this issue are hardly confined to Moravia, Bohemia, or Slovakia. They should be relevant to scholars of early medieval centres well beyond the former territory of Great Moravia, both to the west and east. Nor need we stop at chronological boundaries. Researchers studying La Tène oppida or proto-urban centres of the Bronze Age, for example, face essentially the same deceptively simple question: who fed all those people, and how?

Let’s see what the other contributors make of it.

Michal Hlavica challenges Macháček's view by defending the market system. He argues that redistribution, agricultural self-sufficiency, and market exchange need not be mutually exclusive but could have operated simultaneously. In his model, major centres formed relatively discrete market zones, reflected particularly in regional ceramic distribution. He also rejects the idea that top-down control was incompatible with markets. Political elites could participate in and profit from exchange, including through control over imported commodities. Markets thus need not imply a fully monetised economy but could have provided one mechanism for circulating agricultural produce, craft goods, and imports between centres and their hinterlands.

Michaela Látková addresses the economic role of Great Moravian centres particularly from the perspective of archaeobotany. Building on her analyses of material from Mikulčice-Valy, she presents centres as predominantly consumer sites dependent on their hinterlands. Rather than arguing for full self-sufficiency, Látková proposes partial local production combined with external supply. Archaeobotanical evidence suggests organised crop processing within the agglomeration and cultivation in its immediate floodplain surroundings. Látková therefore reconstructs a decentralised and ecologically adapted system in which centres had their own production capacities but remained functionally integrated with a heterogeneous hinterland through complementary supply and exchange relationships.

Zbigniew Robak brings another, out-of-centre perspective to the debate, despite still holding the ground of Great Moravia. Drawing on his research at the Bojná-Valy hillfort in Western Slovakia, he demonstrates how easily models built around the most prominent centres can obscure the diversity of the past. Bojná lacks the settlement hinterland expected of a classical agglomeration and instead displays a strongly military and logistical character that suggests Bojná-Valy was a specialised node of control. Its case therefore questions the transferability of models derived from the Moravian core and points towards an organisation that was more functionally differentiated than its most conspicuous centres might suggest.

The piece by Ivo Štefan shifts the discussion in space and time, though not into an entirely different economic world. Drawing mainly on written sources from 11th- and 12th-century Bohemia, he examines how centres were provisioned and uses this better-documented setting to reconsider Great Moravian models. Štefan rejects any single supply mechanism and proposes overlapping strategies combining local production, rents and dues from estates, kin-based provisioning, and market exchange. He also reconceptualises the hinterland as a network of property relations and commodity flows that could extend far beyond the immediate surroundings of a centre. Unlike Macháček, Štefan assigns a clearer role to markets, arguing that exchange could function without coinage, while many inhabitants of agglomerations were probably still involved in agricultural production.

As editor, I would like to thank all the authors for their submitted articles, which demonstrate how productive disagreement can be when facts and arguments, rather than emotions, govern the debate. Readers familiar with the history of *Archeologické Rozhledy* may remember that its discussion pages have not always been quite so temperate. It gives hope that scholarly debates in Central European archaeology will set the right course for the future.

Václav Vondrovský

DISCUSSION – DISKUZE

**Great Moravian agglomerations:
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local marketplaces, or autarkic settlements
oriented towards agricultural primary production?
A review and discussion**

**Velkomoravské aglomerace: Centrální místa s vlastním
zemědělským zázemím, lokální tržiště, nebo autarkní sídliště
orientovaná na zemědělskou prvovýrobu?**

Přehled a diskuze

Jiří Macháček

The paper compares various models of the relationship between the Great Moravian central agglomerations (e.g. Mikulčice, Pohansko near Břeclav, Staré Město) and their agricultural hinterland. The first is the traditional model, according to which the centres and the surrounding agricultural settlements were interconnected by a complex hierarchical network, within which the movement of food from the rural hinterland to the centre and the movement of craft products and services from the centre to the countryside took place. There was debate only about the degree of dependence of the agglomerations on the supply of agricultural products and the economic and social principles underlying this transfer. It was primarily a question of whether there was a functional local market in Great Moravia, situated in or around the centres, and whether the relations between rural settlements and centres were primarily based on free market principles. In addition, a group of scholars argues that the Great Moravian agglomerations were essentially autarkic in terms of their subsistence and did not need any agricultural hinterland, or even argued that such a hinterland did not exist at all. The paper reflects on the genesis of these interpretive models and tries to assess their plausibility.

Early Middle Ages – agglomerations – Great Moravia – subsistence – hinterland – market – agriculture

V příspěvku jsou porovnávány a diskutovány různé interpretační modely vztahu mezi velkomoravskými centrálními aglomeracemi (např. Mikulčice, Pohansko u Břeclavi, Staré Město) a jejich zemědělským zázemím. Prvním je tradiční model, podle něhož byla velkomoravská centra a okolní zemědělské osady provázány komplexní hierarchickou sítí, v jejímž rámci probíhal pohyb potravin z venkovského zázemí do centra a pohyb řemeslnických výrobků a služeb z centra na venkov. Diskuse se vedly pouze o míře závislosti centrálních aglomerací na zásobování zemědělskými produkty a o ekonomicko-sociálních principech, na nichž byl tento transfer založen. Šlo především o tom, zda na Velké Moravě existoval funkční lokální trh, situovaný v centrech či v jejich okolí, a zda vztahy mezi venkovskými osadami a centry byly primárně založeny na tržních principech. Vedle toho se vyčlenila skupina badatelů, která zastává názor, že velkomoravské aglomerace byly z hlediska své subsistence v zásadě autarkní a žádné zemědělské zázemí nepotřebovaly, resp. žádné jejich zázemí ani neexistovalo. Příspěvek se zamýšlí nad genezí těchto interpretačních modelů a snaží se posoudit i jejich plauzibilitu.

raný středověk – aglomerace – Velká Morava – subsistence – zázemí – trh – zemědělství

Introduction

Studying the settlement structure in the core of Great Moravia and gaining insight into the economic hinterlands of its central agglomerations was and remains an important pursuit of Czech archaeology; this issue has been researched from various perspectives over the past few decades. Researchers addressed the relationship between early medieval settlement and the natural environment in the floodplains of Moravian rivers, where settlement was concentrated (Poláček 1999; Petřík *et al.* 2019). New sites were actively searched for applying micro test-pitting in river floodplains (Poláček *et al.* 2005; Dresler 2016) and surface collections on the surrounding terraces (Dresler – Macháček 2013). Economic hinterlands were investigated not only in Mikulčice, where Lumír Poláček (Hladík *et al.* 2008; Poláček 2008a) and more recently Marek Hladík (Hladík 2020) have been devoted to this issue for years, but also at neighbouring Great Moravian agglomerations – Pohansko near Břeclav (Dresler – Macháček 2008a) and Staré Město (Galuška 2008). The relationship between the centre and the hinterland was also addressed in an interdisciplinary manner, e.g. from the perspective of archaeobotany (Látková 2017) or by means of analyses of stable isotopes of carbon and nitrogen and the diet (Kaupová *et al.* 2018). The economic hinterland of early medieval centres in the broader Central European context has been discussed at international conferences (Poláček 2008b).

However, the latest research in this field has brought, in addition to undisputed progress related to the application of modern prospecting and analytical methods (Dresler – Macháček 2013; Hladík 2014; 2020) and more complex interpretative models (Hlavica 2023), also a certain rift in the previous understanding of the relationship between early medieval agglomerations and their economic hinterlands. Most researchers followed and elaborated on the traditional model – model 1 (Dresler – Macháček 2008a; 2008b; 2013; Poláček 2008a), according to which the Great Moravian centres and surrounding agricultural settlements were linked by a complex hierarchical network, with food moving from the rural hinterland to the centre and craft products and services moving from the centre to the countryside (Hladík 2020). Discussions were held only on the degree of dependence of central agglomerations on the supply of agricultural products and the economic and social principles on which this transfer was based (Hladík *et al.* 2022). The main issue was whether there was a functional local market in Great Moravia located in or around the centres, and whether the relationships between rural settlements and centres were based primarily on market principles, as some researchers believe – model 3 (Hlavica – Procházka 2020c; Hladík *et al.* 2022). In addition, an alternative view was formulated – model 2 –, according to which the Great Moravian agglomerations were essentially self-sufficient in terms of their subsistence and did not need an agricultural hinterland (Látková 2017), or that no hinterlands even existed (Dresler 2016). We must seriously consider all perspectives on the functioning of early medieval agglomerations in the socio-economic system of the time, especially if the traditional model is to be tested, falsified and replaced by a new theory, which some researchers have recently tried to do or at least considered doing (Danielisová – Mařík 2012; Dresler – Beran 2019; Štefan 2024, 107).

In the following text, I would like to compare the aforementioned interpretative models, reflect on their genesis and assess their plausibility with the aim of initiating a new phase of discussion on the economic and social principles of the functioning of early medieval society in the broader Central European context. I believe that such a discussion will be as

factual as possible and based on empirical observations, because any opinion, *pro* or *contra*, that is not based on concrete facts and verifiable by findings is worthless for learning about and understanding the real world (which applies not only to the field of science). However, this does not mean that some facts cannot be interpreted in different ways, which is a methodological problem that even some of our colleagues have recently correctly pointed out (*Hlavica – Procházka 2020b*).

Great Moravian agglomerations: definition, population and social structure

The definition of Great Moravian agglomerations is of primary importance for our discussion. Most archaeologists dealing with this issue understand them as centres of power with an inhabited area of up to several dozen hectares (e.g. Mikulčice 30–50 ha, Pohansko near Břeclav 51.33 ha) and divided into several settlement areas with different functions (*Poláček 1996, 233–235; 2014; Dresler 2016, 49*). Their existence dates mainly to the 9th century; they are usually fortified and, in addition to their residential parts, we also find production components and burial grounds with churches (*Galuška 2014*). These vast settlement areas formed the pinnacle of the settlement hierarchy and were much more than merely fortified settlements with limited military functions. They can be understood as genuine complex centres of a proto-urban nature with a number of specific functions (*Gringmuth-Dallmer 1999*), for which Latin terms such as *civitates* and *urbes* (*Macháček 2013*) have been used in contemporary written sources.

We define Great Moravian agglomerations as settlement areas that meet the following criteria:

- Most can be dated to the 9th century.
- Their settlement area was up to several dozen hectares.
- They are divided into multiple components with various functions, e.g. residential, production, burial, ritual or religious.
- They were the pinnacle of the settlement hierarchy and became supracommunity areas (*Neustupný 1993, 29; Kuna et al. 2015, 63*).
- As complex centres, they fulfilled all important central functions in the settlement structure (economic, administrative, political, military, commercial, cult, etc.).
- They were typically fortified, at least in a certain phase of their existence.

Discussing subsistence strategies also requires knowledge of agglomeration populations and the share of people who were not involved in primary food production or were only marginally involved in agriculture. The size of the population in the agglomerations under discussion is relatively complicated to determine, because the resulting equation includes many unknowns, such as the number of simultaneously existing dwellings, the exact duration of the existence of these settlements and possible fluctuations in their population. Petr Dresler attempted the most recent estimate based on relevant data for Pohansko near Břeclav, comparing calculations based on different methodologies (using the number of graves, the inhabited area, or on the basis of identified settlement units). The most likely and fully acceptable result is in the range of 1800–2400 inhabitants, while it is clear that the population of Pohansko changed over time and reached its peak sometime in the high

Great Moravian phase in the last third of the 9th century. Dresler's conclusions broadly correspond to data on the population of other early historical agglomerations in various parts of Central Europe (Dresler 2016, 41–52).

Even more complicated is a description of the social structure of agglomerations, especially the quantification of the part of the population that was not at all or only marginally involved in subsistence activities, i.e. especially in primary agricultural production, and thus became pure or predominant consumers of food produced by others. Here, we rely on a hypothetical model based on our general knowledge of medieval societies and the intensity of various non-agrarian activities documented by archaeological sources in early medieval agglomerations.

Along with young children in the *infans* category, who nevertheless constituted a significant part of the population (Drozdová 2005; Sládek – Macháček 2017), residents of agglomerations who fully devoted their working capacity and energy to various central functions that are by definition important for the emergence and existence of these supra-community areas (see above) were also excluded from basic subsistence activities. In addition to the ruling political and official class ('princes' and their relatives, administrators of strongholds and princely estates, scribes, etc.), there must also have been professional warriors, members of the prince's retinue or the retinues of other nobles, who were settled in individual centres, as shown by the example from Přemyslid Budeč (Štefan *et al.* 2016) or written sources related to the nearby Eastern March, where these retinues are called *homines* (Zehetmayer 2019, 50–55). And we should also not forget the clergy – priests, chaplains, and members of monastic communities, who could also participate in production activities in the spirit of the motto *ora et labora*. Perhaps the largest part of society that systematically engaged in non-agricultural activities were craftsmen. Their presence is documented by numerous finds of production tools, semi-finished products, production waste, and even entire workshop complexes discovered at the Great Moravian agglomerations (Dostál 1993; Macháček *et al.* 2007; Macháček 2010; Galuška 2013, 99–174; Poláček 2021, 189–197). A cardinal question is the extent to which these specialists were narrowly focused on their profession and therefore necessarily supported by the agricultural population from the hinterlands of the centres, and the extent to which they operated in a self-sufficient mode, as is assumed for craftsmen from the early days of high medieval cities (Hoffmann 1992; 2002). To address this issue, it is important to estimate the ratio between home-based and specialised production. An example is pottery, which in the high Great Moravian period was already produced in centres in a professional or semi-professional manner, as evidenced by the high degree of production standardisation apparent in morphology, dimensions, and decoration. The share of this advanced pottery in the Great Moravian agglomeration could have been in the 60–100% range in the last third of the 9th century (Macháček 2001a, 166, 209). Its production must have been highly organised, at least at the level of Peacock's 'Individual Workshop' ethnoarchaeological model (Peacock 1982, 9, 31–38), according to which pottery is operated seasonally, but represents the main activity of the producers, with agriculture playing only a secondary role (Macháček 2001a, 220).

Another relatively large group that did not have its own source of subsistence in the form of land involved people with slave status (*mancipia*), who received everything, including food, from their masters. These were typically female textile specialists concentrated in *gynecea*. They appeared relatively commonly in early medieval written sources

of Czech origin from the 11th to 12th century, where they are referred to as *curiales servi* or *puellae operatrices* (Petráček 2003, 139–143). In Pohansko near Břeclav, large sunken structures are associated with intensive forms of textile production, and therefore with *gynoeceae* and their enslaved workers, in which tools and implements associated with the textile industry are conspicuously concentrated (Dostál 1993; Macháček 2010, 300–301). Poorly furnished graves with various burial anomalies, which we associate with the lowest social class, are scattered throughout the entire inhabited area in Pohansko in small groups or on their own (Dostál 1982; Přichystalová 2011). The servants, who performed various jobs in their master's house, were probably also part of the household (*familia*) of the Great Moravian nobles, whose cemetery was discovered, for example, in the vicinity of the 2nd church in Pohansko (Macháček 2019a, 195–196). The existence of slaves and the trade in them is a much-discussed phenomenon in the context of Great Moravia, which may have been of profound importance to the local economy (Macháček 2021). The need to feed slaves, who either worked in the centres or involuntarily waited there for the arrival of foreign buyers and their caravans, placed great subsistence pressure on the agricultural hinterland.

Despite the inability to clearly quantify the number of people who had to be supported by villagers and fed within the Great Moravian agglomerations, their share in the local population must have been relatively large, as can be seen from the list above. In my opinion, there must have been at least several hundred people, sometimes even more.

Model 1: Great Moravian agglomerations as central places with their own agricultural hinterland

The traditional idea of the hinterland of Great Moravian agglomerations was already formulated by Bořivoj Dostál. Based on his concept, each agglomeration or Great Moravian fortified settlement had its own economic hinterland consisting of a network of settlements with an agricultural, livestock, and craft focus. Their agricultural production provided a livelihood not only for the inhabitants of these rural settlements, but also became a fundamental part of the subsistence of that part of the population of the Great Moravian agglomerations that did not directly participate in agricultural production. Surplus agricultural production was to reach the centres in the form of payments to the prince and the church or through the internal market in exchange for handicrafts produced by the inhabitants of the agglomerations (Dostál 1987, 19–20).

According to Zdeněk Měřínský, rural settlements and burial grounds are concentrated in the vicinity of the Great Moravian agglomerations in Pohansko and Mikulčice, forming their natural hinterland. A massive population explosion in the 9th century caused a three- to four-fold increase in the population density in the core of Great Moravia (Měřínský 1980, 195–200; 1985, 87–88). The agricultural hinterland of each of the Great Moravian agglomerations could cover an area of 100–200 km² and they did not overlap (Dostál 1987, 24).

Lumír Poláček, who followed the work of Zdeněk Klanica (Klanica 1987), considers the Mikulčice hinterland to be the area of an annulus defined by an inner circle starting at a distance of c. 700 m from the centre of the agglomeration and an outer circle with a radius of 10 km, which formed the border of the idealised hinterland. However, Poláček

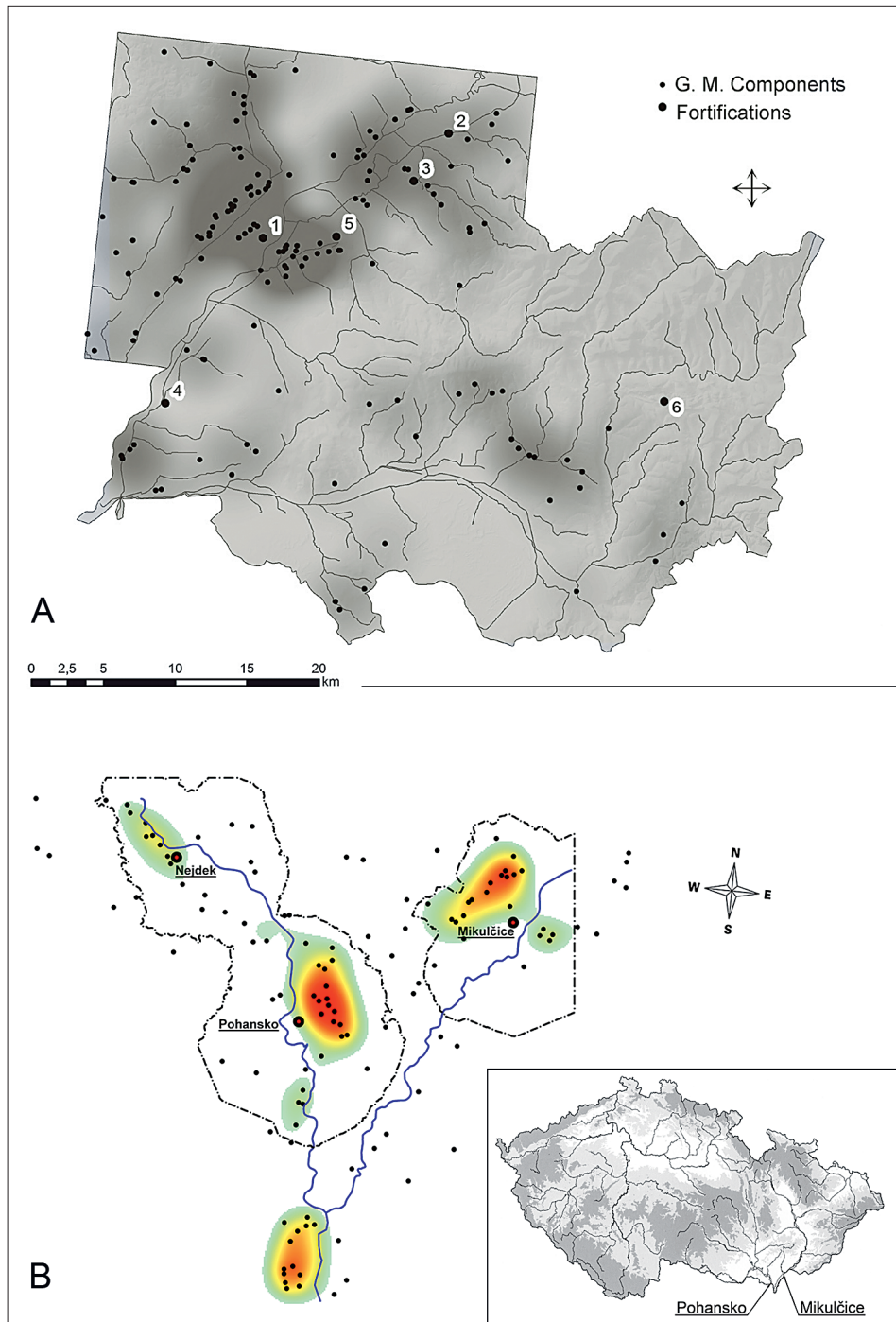


Fig. 1. Settlement structure in the agricultural hinterland: A – Mikulčice (1 – Mikulčice agglomeration); B – Pohansko near Břeclav (according to Dresler – Macháček 2008b and Hladík 2020, 183).

points out that this is only a hypothetical assumption. The hinterland is further mechanically divided into three zones according to the distance to the centre of the agglomeration. And yet, these zones do not show any differences in terms of social structures. The main task of the hinterland, especially the second zone, was to supply the centre with cereals and possibly animals for meat. In addition, there is also local evidence of craft production such as blacksmithing and non-ferrous metallurgy (e.g. in the Mikulčice–Podbřežníky settlement). The greatest increase in population density here was to have occurred in the late Great Moravian horizon (second half of the 9th to the first half of the 10th century). Nevertheless, Poláček also considers that the observable concentration of rural settlement near the centres could have arisen only by chance and is possibly related to general geographical conditions, e.g. natural fords across the river (*Poláček 2008a*).

A study by Petr Dresler and Jiří Macháček based on analytical surface collections in the hinterland of the Great Moravian agglomeration in Pohansko attempted to verify this hypothesis (*Dresler – Macháček 2008a; 2008b*). For the needs of analytical surface collections, the entire area of interest, i.e. an area of 532.5 km² demarcated in the south by the confluence of the Morava and Thaya rivers and in the north by the Hodonín–Dolní Dunajovice line, was divided into square polygons measuring 50 × 50 m. With the help of GIS tools, those suitable for archaeological surface collections were selected, i.e. mainly ploughed areas. The available polygons were then sampled to minimise cognitive bias. Control analytical collections took place in different landscape zones with distinct socio-environmental parameters. They were evenly distributed throughout the studied area (*Dresler – Macháček 2008a, 318*).

Analytical collections confirmed the validity of the initial hypothesis (*Dresler – Macháček 2008a; 2008b*), according to which the settlement structure in the studied area, in addition to standard environmental variables, was significantly influenced by the existence of central agglomerations, which largely determined the location of other settlements. The edge of the floodplain also had a significant influence on the distribution of settlements in the landscape, as it formed a significant divide between two ecosystems – the river floodplain and the surrounding terraces. The model was tested by comparing the numbers of polygons with finds from prehistoric times, protohistory, the Early Middle Ages, the High Middle Ages and polygons without finds to the expected random distribution in the landscape. The result showed that the spatial distribution of archaeological finds (mainly potsherds) dated to different eras differed from each other to a statistically significant degree. The finds from prehistoric times, protohistory, the Early Middle Ages, the High Middle Ages and polygons without finds have different spatial patterns in the landscape. Finds from the Early Middle Ages are significantly accumulated near central agglomerations (*Fig. 1: B*). The observable concentrations of rural settlement in the vicinity of the Great Moravian agglomerations could not be a random phenomenon, as Lumír Poláček had considered (see above).

This result was also repeated and confirmed by Marek Hladík in several studies on the Mikulčice hinterland (*Hladík 2020*). According to his research, the density of settlement increased during the 9th century, especially within a radius of 7 km from the fortified centre (*Fig. 1: A*). It is noteworthy that many of the Great Moravian settlements and cemeteries were visible and thus controllable from the Mikulčice agglomeration, even though its location in the middle of a flat valley floodplain was in no way dominant. According to Hladík, the existence of the supracommunity centre in Mikulčice was accompanied by a planned



Fig. 2. Břeclav-Líbivá. Great Moravian grain silo with the burial of a dog and the discoverers of the site, Pavel and Petr Čáp. Archaeological excavation from 1995–1998 (photo Jiří Macháček; Macháček 2001b).

colonisation of the hinterland, the settlement structure of which was subordinated to the needs of the central location. Still, local settlement respected the natural conditions and perhaps even older settlement patterns in the landscape (Hladík 2012, 128). The immediate surroundings supplied the centres primarily with agricultural products, especially cereals. Hladík bases his conclusion on a comparison of a nearby agricultural settlement at Mikulčice-Podbřežníky, where very deep (up to 2 m) underground grain silos were found in a ratio of 4:1 to residential dwellings (pithouses), while at more distant rural settlements (e.g. Mutěnice-Zbrod), which lack such a strong connection to the central agglomeration, smaller silos were found in a balanced ratio (1:1) to dwellings. This finding shows that food, especially grain, necessary for the sustenance of central agglomerations, was stored for a long time in underground silos at unfortified agricultural settlements in the vicinity of central agglomerations. Another example is the settlement in Břeclav-Líbivá (Macháček 2001b; Fig. 2; Fig. 3), where an enormous number of underground grain silos were discovered using geophysical prospecting (Macháček et al. 2024; Fig. 4). Grain that was moved from the agricultural hinterland to the centres must have been stored in a different way before consumption, since we are not aware of any underground grain silos from Mikulčice and Pohansko from the Great Moravian period (Biermann et al. 2015, 293; Hladík – Látková 2020). One can consider various chests or above-ground granaries (Dresler 2016, 222–228), or even vessels (Hajnalová 2012). At more distant agricultural settlements (e.g. Mutěnice-Zbrod), an agricultural surplus was not produced and therefore not stored, which is why there is not a larger number of grain silos.

Based on the traditional interpretative model, it can be summarised that the development of Great Moravian agglomerations led to the emergence of their economic hinter-



Fig. 3. Břeclav-Líbivá. Half-section of Great Moravian grain silo excavated in 2022–2023 (photo by Petr Dresler).

lands manifested in the concentration of agricultural settlements focused on grain production in their immediate vicinity (Hladík 2020, 281). Hence, the agglomerations and their immediate hinterlands formed one interconnected economic and social system.

Model 2: Great Moravian agglomerations as self-sufficient settlements oriented towards primary agricultural production

An alternative view first emerged in the 1980s that at least some of the Great Moravian agglomerations were not consumer settlements to which surpluses from the countryside were sent; instead, these were self-sufficient production settlements or sites where agriculture formed a key component of their economy. This model was formulated by Čeněk Staňa in his study of 9th-century Moravian stongholds, in which he singled out a group of locations that he designated as *‘Landwirtschaftliche Zentren mit jeweils einem Herrenhof’*, i.e. agricultural centres with a noble manor, among which he included Pohansko near Břeclav, Pohansko near Nejdek, Strachotín–Petrova louka, and Rajhrad. According to Staňa, these settlements were not only the cores of large early medieval estates to which taxes from surrounding agricultural settlements were paid, but also places of primary agricultural production, or places for raising domestic animals, especially horses. They were directly dependent on princely power and on central castle towns (*Burgwallstädte*), where members of the ruling dynasty resided. This is what Pohansko near Břeclav, for example, was supposed to be like, which Staňa classified as an agricultural centre dependent on Mikulčice as a central agglomeration (Staňa 1985, 173–177, 183).

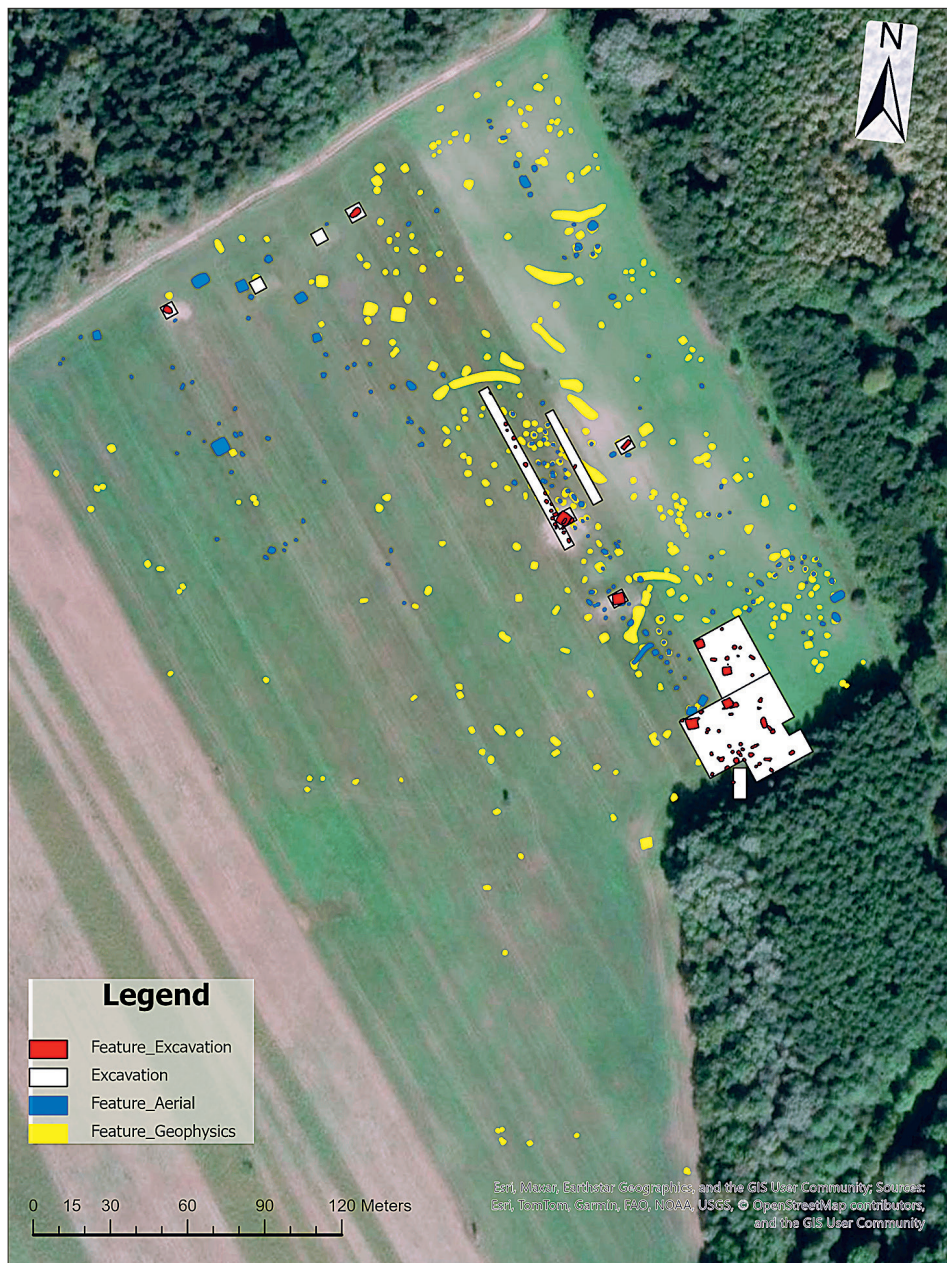


Fig. 4. Břeclav-Libivá. Archaeological features in the settlement area according to geophysical measurements, remote sensing, and archaeological excavation (graphics Petr Dresler, Michaela Prišťáková, Tomáš Tencer, Peter Milo, and Jiří Macháček).

Although Staňa's definition can still be considered a serious attempt at a functional division of Great Moravian strongholds, it nevertheless pointed to an uneven state of knowledge of individual sites (Procházka 2009, 94). Staňa even ignored some of the then-current knowledge that did not fit neatly into his schematic categories. One example is the intensively researched Pohansko near Břeclav, which Staňa characterised as sparsely populated and focused on agriculture, although he recorded craft workshops and non-agricultural production activities at the site (Staňa 1985, 173–174). Staňa's views on the function of Pohansko as an agricultural production location resurfaced 30 years later, but in a different context, when Petr Dresler published his work on the economic hinterland of Pohansko (Dresler 2016). Dresler did not accept Staňa's views *en bloc*, but modified them in the sense that the settlements and burial grounds that were discovered in the vicinity of Pohansko probably arose after the demise of this agglomeration, and therefore could not have been part of an early medieval economic and social structure (e.g. a manor), as postulated by Staňa. Without the appropriate rural hinterland, all the inhabitants of Pohansko had to be engaged in agriculture during the Great Moravian period, or, as Petr Dresler states, 'at least a significant number of them' (Dresler 2016, 248). His argument is based on challenging the original dating of the finds from our own analytical surface collections (Dresler – Macháček 2008a; 2008b). Dresler believes that the settlement of Pohansko and rural settlements cannot be synchronised. According to him, the previous dating was based only on ceramics, subjective feelings and perhaps even a certain attempt to manipulate the results of the research work ('to try to support the given project with relevant data sets'; Dresler 2016, 180). At that time, he did not consider the finds from regular excavations of rural settlements (e.g. Kostice – Zadní hrúd) to be sufficiently representative (well-processed and evaluated) to enable their use in refining the dating (Dresler 2016, 177). For Dresler, not even the absence of underground grain silos in central agglomerations is an argument against the agricultural character of the agglomeration at Pohansko, as grain could also be stored here in above-ground granaries (Dresler 2016, 228).

Archaeobotanist Michaela Látková also expresses a very similar view of the relationship between the Great Moravian agglomeration in Mikulčice and the rural settlements in the broader vicinity of the centre. In her opinion, the archaeological assumption that food (grain) for the central location was produced exclusively by smaller rural settlements in the hinterland has not been confirmed. According to Látková, it is likely that the basic crops (or a significant share of them) were grown locally by the inhabitants of the central settlements themselves, especially with the massive engagement of women in agricultural production (Látková 2017, 135). However, it is not clear from the texts published to date what she specifically bases her claims on. The author speculates that there were not enough people living in rural settlements to be able to grow enough food for central agglomerations. However, taphonomic analyses reveal a somewhat different picture. As a central agglomeration, Mikulčice differs from other settlements based on archaeobotanical finds. The samples from Mikulčice contain only a small share of crops from the initial stages of their processing. In other assemblages, especially from rural settlements or lower-level centres, such samples are relatively common. There is also a difference in the distribution of the final product, i.e. fully cleaned grain, which was found both in Mikulčice and in other central agglomerations, such as Nitra and Devín-Hrad (Hajnalová – Hajnalová 2008, 366–367; Látková 2017, 96–100). However, cleaned grain is mostly absent at rural settlements. Látková's observations suggest that from an agricultural perspective, central

agglomerations were more consumer than production settlements. However, this conclusion still needs to be confirmed with larger series of archaeobotanical samples from rural settlements in the hinterland of central agglomerations.

In agreement with Petr Dresler, Michaela Látková questions the traditional interpretation of underground silos of a pear-shaped section as primary storage facilities for grain, especially seeds, and instead assumes above-ground storage facilities (Látková 2017, 105). This conclusion was probably influenced by Mária Hajnalová, who has long been sceptical of the stated functional interpretation of these specific settlement pits in other historical contexts (Hajnalová 2012). The influence of Hajnalová's work is also evident in the way she addresses the relationship between central settlements and their hinterland. Using the example of La Tène oppida, she tried to prove that central locations did not need their own agricultural infrastructure and could be self-sufficient (Danielisová – Hajnalová 2014, 422). Alžběta Danielisová and Jan Mařík tried to apply the same model to early medieval agglomerations, which share numerous parameters with Celtic oppida (Danielisová – Mařík 2012). Michaela Látková followed this line of interpretation in the case of Mikulčice, though without support in empirical data; she lacked a sufficient number of samples from rural settlements to refute the traditional hypothesis, and those that were available tended to support the traditional interpretive model of a centre that relied on its agricultural hinterland for food supplies.

Model 3: Great Moravian agglomerations as local markets with agricultural commodities

The latest phase in the discussion on the relationship between Great Moravian agglomerations and rural settlements was marked by the question of whether there was an internal local market in Great Moravia (Macháček 2015, 468–469) that would supply food to the centres on the principle of market relationships. The existence of a local market was already assumed by historian Dušan Třeštík, who in his study commented on the mention of the Moravian market in the Raffelstetten Customs Code from 903–904. This historically-known market with an unknown location but which is assumed to have existed in one of the Great Moravian agglomerations (e.g. Třeštík believed it was Mikulčice) undoubtedly became part of the European long-distance trade system. According to Třeštík, however, the 'Moravian market' did not primarily serve foreign buyers trading with the Moravians, but mostly the needs of exchange within Moravia itself – between its inhabitants. Using the words of the Arab author of the so-called Anonymous Relation, he argues that it is primarily Moravians who 'search for and sell all things' here (Třeštík 1973, 890).

Some more recent archaeological works that address this issue formulate only very general conclusions to the effect that in Great Moravia there existed 'economic relations between the agglomeration and the settlement network in its surroundings' and also the 'local exchange of goods (primarily foodstuffs)'. But while it is accepted that this exchange took place through the 'local market', specific evidence that would prove the existence of market relations in Great Moravia and the massive transfer of food to populated centres through the market has not been presented (Hladík et al. 2022, 137, 141, 145). However, studies have recently emerged that are much more specific. Although Rudolf Procházka and Michal Hlavica state that 'we are not sure about the nature and intensity of economic

interactions between the Great Moravian central places, or between the central places and their hinterlands’, they attempt, despite this uncertainty, to identify the local market based on the distribution of everyday goods, especially ceramics. The greatest obstacle to formulating plausible conclusions is the problem of equifinality, which makes it difficult to compare and verify various archaeological hypotheses about the (re)distribution of goods within Great Moravian society (Hlavica – Procházka 2020b). Using the mapping of individual ceramic groups in the area of south Moravia (Macháček 2001a, 250), the authors of these studies document the existence of ‘market zones, i.e. areas serviced by the same market centre(s) within which communities had access to the same array of goods’ (Hlavica – Procházka 2020c, 79). In the absence of coins in Great Moravia, iron axe-shaped ingots, or archaeologically unprovable ‘commodity money’ (Hlavica – Procházka 2020a, 82), were to have served as a universal medium of exchange in trade transactions within these zones. According to this model, the Great Moravian centres were to have functioned primarily as regional marketplaces (Hlavica – Procházka 2020c, 79).

Working with cultural-anthropological theories, Michal Hlavica created highly detailed economic-political and economic-geographical models of Great Moravian society, which he tested against empirical data. Specifically, he worked with ceramic types, or groups, identical pottery marks on the bottoms of vessels, and the archeometric analysis of ceramic material (XRF, petrography) (Hlavica 2023; Hlavica et al. 2024). Hlavica considers that some of the ceramics for their needs were procured by the inhabitants of South Moravia, including farmers and cattle breeders, in the marketplaces located within the Great Moravian centres, e.g. Pohansko (Hlavica 2023, 55), as early as the 9th century. However, this conclusion could be premature or even erroneous. At rural sites in the hinterland of the Great Moravian agglomerations, Hlavica records only a minimum of marks identical to ceramics from the centres. Only two identical marks are known from the hinterlands of Pohansko and Mikulčice, i.e. from the cemeteries in Prušánky and Nechvalín. A relatively large assemblage of 28 relief marks has been processed from both locations. Parallels to both marks were found only in Pohansko near Břeclav. No match has been found yet in Mikulčice (Hlavica 2016; 2023, 68), which does not indicate a very intensive exchange of consumer goods between the centres and their agricultural hinterland, although a certain transfer of professionally produced ceramics to the rural environment undoubtedly occurred, as evidenced by finds of high-quality ceramics from the Mikulčice and Blučina typological groups at some agricultural settlements (Kavánová – Vitula 1990; Macháček 2001b; Mazuch 2013, 92; Hladík 2020, 245). However, in my opinion, the two relief marks do not support the hypothesis ‘on market interactions with primary food producers’ as formulated by Michal Hlavica (Hlavica 2023, 55), whose argument is not even consistent on the issue of the status of potters, who, according to Hlavica, freely sold their products as independent craftsmen to other Moravians. This would hardly be possible if the economy of the centres for which potters produced their wares were controlled by the ruling elite, as Hlavica repeatedly claims. According to him, each agglomeration had its own ceramic producer who satisfied the needs of residents from different social classes. However, ceramics remained mostly within the agglomerations and did not circulate in large volumes even between neighbouring centres.

The few identical marks occurring simultaneously in Pohansko and Mikulčice (five individuals out of 470 documented marks from both locations) can be explained more as evidence of the movement of individual people (with their own food and utensils) than as

a massive movement of traded goods between centres (*Hlavica 2023*, 88–89). According to ethnographic analogies from the western Mediterranean, the typological similarity between the Great Moravian ceramics from Pohansko and Mikulčice can be explained by the existence of branch workshops, which emerged as a result of the movement of some potters from one production centre to other important consumer settlements (*Vossen 1991*). A transfer of this type could have taken a violent form in the Early Middle Ages and be organised by a central authority, as shown by the example of the transfer of merchants (and craftsmen?) from Slavic Rerik to Viking Haithab by the Danish king in 808 (*Schwind 1984*, 303). A similar formal spectrum and decorative style of Great Moravian ceramics spread in this manner (*Macháček 2001a*, 257). In this situation, free access for independent producers to the local market, where they would offer their goods in competition with other potters, is unlikely. From the perspective of pottery production, the Great Moravian agglomerations appear more like closed socio-economic systems with their own pottery workshops, isolated from other centres (*Staňa 1984*; *Macháček 2001a*, 246–257; *Hlavica 2023*, 71). And yet, it is interesting that identical marks (two potsherds with identical marks in Pohansko) appeared at the relatively distant (37 km) Lower Austrian site of Pellendorf (*Kühntreiber 2019*), which lay halfway along the route from Pohansko to the Danube – the main travel artery in this part of Europe. This seems to indicate the involvement of ceramics in long-distance trade (*Hlavica 2023*, 89), possibly serving as packaging for rarer commodities (e.g. wax), which Moravians traded on a pan-European level, as can be seen, e.g. from the Raffelstetten customs regulation (*Bartoňková – Večerka 2013*, 100).

Testing the test

According to Karl Popper, although scientific theories and interpretative models are never fully verifiable, they must be testable. If a theory withstands detailed tests, it can be deemed proven and cannot be abandoned without ‘good reason’. A good reason would be replacing it with another ‘better testable’ hypothesis or to falsify the original theory (*Popper 1997*, 10–11, 264).

Every effort to falsify existing hypotheses in the sense of Karl Popper’s considerations can be appreciated, because science needs ever greater competition between hypotheses and increasingly rigorous testing. If we are not sufficiently critical, we always find what we need (*Popper 2000*, 108, 123). However, testing must also be of high quality in order to refute and replace existing theories. It is therefore a good idea to ‘test the test’ and assess whether it is of sufficient quality to falsify the original theory and whether the alternative hypothesis is built on solid foundations.

Petr Dresler attempted to falsify the original theory about the unified socio-economic system of Great Moravian centres and their hinterlands. He based his testing on criticism of the dating of rural settlements from the vicinity of Pohansko near Břeclav and the claim that they are not contemporary with the central agglomeration, arguing that it was impossible to accurately date fragmentary pottery with indistinct features obtained in surface collections on the ploughed surface of fields. However, this argument cannot be used to refute the current theory, because the chronological inaccuracy means that Pohansko and the surrounding agricultural settlements could have been both non-contemporary and contemporary. This argument, therefore, fails as a test criterion.

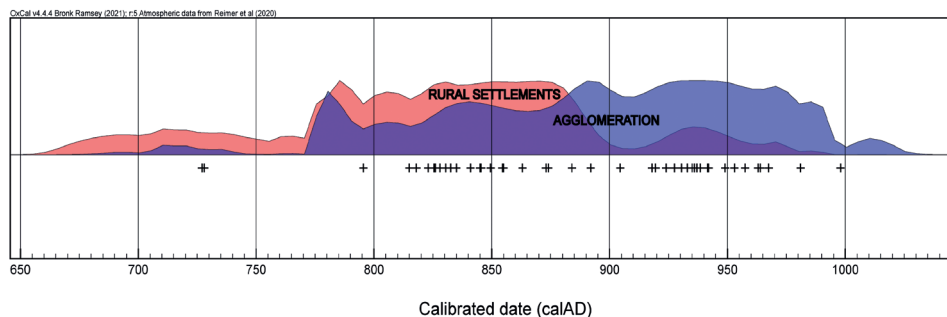


Fig. 5. SUM plot summarising the distribution of radiocarbon measurements from rural settlements in the Pohansko hinterland (red plot, Kostice – Zadní hrád, Poštorná) and the Great Moravian agglomeration in Pohansko (blue plot). Modelled using the OxCal v. 4.4 software and the IntCal20 calibration curve (Bronk Ramsey 2017; Reimer et al. 2020) and radiocarbon measurements published in the literature (Košta et al. 2019; Macháček et al. 2016; 2018; 2021a; 2021b; see Online Supplementary Material 1 for details).

Unfortunately, we cannot use artefacts made of materials other than ceramics (e.g. metals), which could be dated more precisely, to identify rural settlements, because in the Great Moravian period, the metallic component of the material culture of rural communities was not very rich and consisted almost exclusively of iron objects, which often escape attention during prospecting with a metal detector and cannot be dated more precisely.

Much more precise synchronisation of the centre and the hinterland can be expected based on the excavation of rural settlements. Recently, finds from the early medieval settlement of Kostice – Zadní hrád were published, which Petr Dresler did not yet have at his disposal when writing his critical study. A comparative statistical analysis of large and high-quality assemblages of settlement ceramics conducted by Adéla Balcárková shows that most of the Great Moravian settlement features from this site can be synchronised with the older phase of the Great Moravian period in Pohansko (Balcárková et al. 2017, 53). This makes it possible to challenge Petr Dresler's assertion that the agricultural settlements arose only after the disappearance of the Pohansko settlement. As such, this thesis certainly does not apply to the Kostice – Zadní hrád site. However, it is similar with other rural settlements (Břeclav-Libivá, Břeclav-Poštorná, Mikulčice-Podbřežníky, etc.) from the hinterland of Pohansko and Mikulčice, where typical Great Moravian ceramics of the Mikulčice group with grooved rims were discovered during excavations (Macháček 2001a; Mazuch 2013), which allows us to synchronise these sites with the later developmental phase of the Great Moravian central agglomerations (Kavánová – Vitula 1990; Macháček 2001b; Mazuch 2008). A similar conclusion applies to the inhumation graves of people and animals (dogs), which were discovered at agricultural settlements in the hinterland of Pohansko. Their radiocarbon dating overlaps with the dating of inhumation graves and animal bones at Pohansko (Fig. 5; Košta et al. 2019, 191; Macháček et al. 2018; 2021, 273). It was shown that all settlements in the hinterland of Pohansko and Mikulčice where regular archaeological excavations were conducted could have been (and probably were) contemporary with the Great Moravian agglomerations. This claim cannot be refuted for now, and the attempt to falsify the existing theory in this way appears to be unsuccessful. Marek Hladík with colleagues recently reached a similar conclusion when they stated about Pohansko and Mikulčice that ‘... *unfortified rural settlements existed around both of the*

central places. Based on this, we are inclined to support the view that – analogically to Mikulčice – there was a network of settlements that coexisted and cooperated with the Pohansko centre and functioned as its economic hinterland ...’ (Hladík et al. 2022, 136).

Based on the latest analyses, the attempted falsification by Michaela Látková (Látková 2017, 135) can also be questioned. It claimed that the staple crops (or a substantial part of them) were grown locally by the inhabitants of the central settlements themselves (*‘the staple crops were cultivated locally by the central site itself’*). The question is what exactly is meant by the term ‘locally’. However, it turns out that this could not have been in the river floodplain in which the central Great Moravian agglomerations were located. The archaeobotanical and palynological study by Libor Petr and colleagues shows that at least in the case of Pohansko *‘supplies were brought from the hinterland, where chernozem soils were better suited for agricultural production... The spectrum of cereal weeds recorded by archaeobotany demonstrates that crop fields were situated outside the alluvial floodplain zone on chernozem or loess soils located approximately 3–4 km from Pohansko’* (Petr et al. 2025, 151, 161). It is at this distance that agricultural settlements are located on river terraces; these are dated to the Great Moravian period by large pottery assemblages and the radiocarbon method. At some of them, prospecting methods (e.g. geophysical) indicate dozens to hundreds of underground silos (Macháček et al. 2024) that could have been used to store grain supplies. This could be used in a few months as seed for the new season, or for direct consumption even after several years (Pleinerová 1995, 62–63). Although the yields of early medieval agriculture are usually considered to be very poor (Le Goff 1991, 215), it seems that the 9th century brought innovations and changes in agrotechnology to Moravia including the massive spread of iron agricultural tools such as ploughshares, coulter, sickles, scythes, etc., and the cultivation of new crops such as millet (Macháček – Müllerová 2022, 287–288; Macháček et al. 2025), which enabled a significant increase in food production. In the vicinity of the Great Moravian agglomerations, this was reflected in the increase in storage capacities in underground silos (Balcárková et al. 2015, 92–94) and, indirectly, in population growth (Galeta – Pankowská 2023).

It therefore seems that supplies, especially grain, intended for feeding populous proto-urban centres were stored at agricultural settlements and gradually moved to centres whose population had a different diet than the peasants from their hinterland, not only in Moravia, but also in early Přemyslid Bohemia (Kaupová et al. 2018; 2019). A model of this type is not entirely unusual and is also assumed, e.g. in the Minoan palace complexes on Crete, where, according to archaeological excavations to date, there is insufficient storage space for the supplies necessary to support all the palace inhabitants. Therefore, decentralised storage at rural settlements, which were only controlled from the centre, is considered (Smlíšek 2025).

The question is on what economic–social principle the transfer of food from the hinterland to the centres was based. The majority of researchers lean towards the market, with farmers selling their surpluses to residents of Great Moravian agglomerations at the local market. However, I doubt that this was possible in 9th-century Moravia, as Great Moravia was still an uncommercialised economy, lacking both a market for internal trade, a class of independent merchants working for their own profit, or a currency that would have served as a universal medium of exchange. Not even craft specialists worked here yet for the internal market and instead still served the needs of the elite or embryonic ‘states’, whose agents controlled long-distance trade (Smith 2004, 78–79, 89), which, on the con-

trary, was relatively developed due to the probable involvement of Moravian elites in the pan-European slave market (*Macháček 2021*). Surplus production was an investment in the power and prestige of the chiefs/princes, who distributed goods selectively based on their political goals. On the contrary, in a market economy, which by then had its own thousand-year history but had not yet fully functioned in Great Moravia, producers would send their products to the market to be bid on by buyers. It only appeared in highly complex social regimes whose political form was based on the state system and social stratification. However, it is necessary to realise that various forms of distribution of material goods (market, redistribution, reciprocity) exist in parallel and are not mutually exclusive. The decisive factor for assigning a particular exchange system to a particular category depends primarily on which mode of exchange dominates the society and, above all, which one unifies the entire economy (*Murphy 2004*, 139–141).

Research on ‘mass’ goods, e.g. pottery, is crucial for identifying the internal market (*Štefan 2014*, 162). In this sense, the situation in Moravia in the 9th century can be compared with the later period when the economy of the Czech lands was already significantly monetised (*Macháček – Videman 2013*) and probably also commercialised. According to Ladislav Varadzin, who has intensively studied this issue, the standard of a partially commercialised economy was Přemyslid Bohemia (*Žemlička 1997*, 161), where the distribution of ceramics in the 10th to 12th century was based not only on the collection of taxes from centres, but also on market exchange. The result of a comparison of older Mojmir Moravia and later Přemyslid Bohemia is not surprising. The Bohemian distribution pattern characterised by the ‘*frequent mutual penetration of workshop distribution circuits*’ (*Varadzin 2010*, 56) differs from the situation in the core of Great Moravia. The difference lies in the fact that in 9th-century Moravia there was no significant overlap of ceramic distribution circuits, as was the case later in Bohemia (*Macháček 2001a*, 246–250; *Štefan 2014*, 161). The fully commercialised economy of the High Middle Ages is characterised by the interweaving of multiple distribution circuits (*Vařeka 1998*, 132). If market exchange can be recognised by the movement of pottery from the centre towards the rural consumer, as Ivo Štefan (*Štefan 2014*, 162) suggests, then market exchange was not yet fully developed in 9th-century Moravia, as indicated by the low occurrence of identical marks in the centres and in the countryside (see above).

Based on current knowledge, it appears that the Great Moravian agglomerations were subsistence-dependent on their agricultural hinterland, with which they were not connected by market relations. So on what principles did the transfer of food and goods work in Great Moravia without a developed commercial and fully market economy?

The traditional explanation presented mainly by the historians of earlier generations was based on the top-down principle, i.e. the exploitation of the hinterland through force by the Great Moravian elites settled in the centres. Dušan Třeštík considered a more or less regular collection of an archaic tax based on the number of offspring in the form of ‘*poludja*’, i.e. through the plundering expeditions of an armed band (*Třeštík 1997*, 292–296), as is known from Kievan Rus’ (*Havlík 1987*, 18–19). As a possible alternative, Třeštík offered a service organisation, within the framework of which free people who earned a living on their own land would be obliged to pay taxes and perform service. However, this would mean their de facto transformation into subjects (*Třeštík 1997*, 296), which would probably not have been possible without force by the elites (*Wihoda 2010*, 266). According to Zofia Kurnatowská, the forced resettlement of the population also led

to an increase in the density of settlements around central hillforts, at least in Piast Poland (Kurnatowska 1984, 169).

However, the relationship between ordinary villagers and the residents of Great Moravian agglomerations can also be viewed in another way, i.e. from a bottom-up perspective. It is possible that people could voluntarily come together for the purpose of common defence, mutually beneficial reciprocity, and collective religious rituals (DeMarrais – Earle 2017). The socio-economic system of the Great Moravian agglomerations and their hinterland would thus have emerged on the basis of compromises and negotiations between farmers from the countryside and craftsmen, merchants, and warriors or chieftains from the centres, who united to protect and promote their common interests (Furholt et al. 2020), both against an external enemy (e.g. the Frankish Empire) and against other Moravian communities. The population may also have partly rotated between the central agglomerations and the countryside, as indicated by the settlement of the southern suburb of the agglomeration in Pohansko, which shows a number of formal similarities with rural settlements, and thus differs from the settlement structures in the core of the agglomeration (Vignatiová 1992; Dresler et al. 2008). The settlement here may have had the character of a type of ‘favela’, as they are known from large agglomerations in today’s South America and Africa. Rural residents could freely come and go to the southern extramural settlement, and they also participated in various military actions, both defensive and expansive, as evidenced by the relatively frequent finds of militaria in this part of Pohansko (Vignatiová 1992, 58–65). The countryside was also relatively heavily militarised at that time, as evidenced by the finds of solitary graves with weapons and riding gear from rural settlements in the immediate hinterland of Pohansko (Macháček et al. 2021). Temporary and conditional military assistance from armed villagers could have been part of their negotiations with the residents of the centre, to whom the villagers need not have been subordinate. Societies that historically created large agglomerations and cities did not always exhibit features of administrative hierarchy and authoritarian rule. Cities also emerged as large regional confederations and civic experiments based on cooperation and negotiation. Monarchy, military aristocracy, and other forms of social stratification were not always necessary to achieve this (Graeber – Wengrow 2021). However, this social experiment did not last long even in Great Moravia. The existing social contract was apparently disrupted by the incipient process of feudalisation and the temporarily unsuccessful attempt to introduce the early medieval manorial system (Macháček 2016; 2019a). As a result of the upheavals caused by these disruptive social innovations, Great Moravia and its agglomerations eventually disappeared into the maelstrom of history (Macháček 2019b).

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DISCUSSION – DISKUZE

A few notes in the defence of the Great Moravian market system

Několik poznámek na obranu velkomoravského tržního systému

Michal Hlavica

The recent text by J. Macháček (2026) attempts to review the debate concerning the nature of the relationship between Great Moravian centres and their hinterlands. Among other points, it also criticises the model of the Great Moravian market system that I originally developed as part of the wider economic, geographic, and political model of the Great Moravian polity (Hlavica 2023). In the following text, I will analyse Macháček's key arguments and highlight the problematic conclusions on which he bases his position. Additionally, I will point to the grounding of the author's criticism in an incomplete understanding of certain economic and anthropological concepts. My primary aim is to demonstrate that his criticism of the Great Moravian market model is insufficient to warrant its rejection.

Great Moravia – market system – trade – centres – hinterland – food production

Nejnovější text J. Macháčka (2026) si klade za cíl přezkoumat debatu o vztahu velkomoravských center a jejich zázemí. V souvislosti s tímto záměrem kritizuje i model velkomoravského tržního systému, který jsem ve své práci představil coby součást širšího ekonomického, geografického a politického modelu velkomoravské společnosti (Hlavica 2023). V následujícím textu se pokusím podrobně zaměřit na analýzu Macháčkových klíčových argumentů a poukázat na problematické závěry o podstatě ekonomických vztahů na Velké Moravě, na nichž staví svoji diskuzní pozici. Zároveň se pokusím poukázat na zakotvení autorovy kritiky v neúplném pochopení některých ekonomicko-antropologických konceptů. Mým hlavním cílem je ukázat, že argumentace J. Macháčka k vyvrácení modelu tržního systému na Velké Moravě nedostačuje.

Velká Morava – tržní systém – obchod – centra – zázemí – potravinová produkce

Introduction

The main aim of the economic, geographic, and political model I introduced (Hlavica 2023) was to establish an explanatory framework capable of providing insight into the socio-political complexity of Great Moravia. To this end, I sought to compile and synthesise scattered fragments of current archaeological knowledge concerning the Great Moravian economy in order to construct a coherent picture within which I evaluated a large assemblage comprising more than 600 potters' marks discovered on ceramics from various Great Moravian sites, aiming to maximise their evidentiary potential.

However, previously overlooked structures began to emerge during this process, most notably a system of major Great Moravian hillforts, each situated approximately 60 kilometres apart from one another. I realised that this spatial distribution of centres corresponds to patterns already known in economic geography. In his classic work, W. Christaller identified a similar spatial distribution in his study of southeastern Germany. He concluded that this pattern results from market forces concentrated in central places and the supply

strategies of these centres in relation to their surrounding hinterlands (for more details, see *Christaller 1966*, 58–80).

When I attempted to apply various normative geographical models to the spatial distribution of central places in the Moravian part of Great Moravia, I found that the system of centres and their market zones, as defined by Christaller's market principle, closely corresponded to the system of major Moravian hillforts as well as to the spatial distribution of morphologically and stylistically related ceramics surrounding them. Identified structure included Břeclav–Pohansko, Staré Město near Uherské Hradiště, Staré Zámky in Brno-Líšeň, Olomouc, and, to a certain extent, Znojmo (*Hlavica 2023*, 46–50, fig. 16, 17). I concluded that I may have identified an archaeological manifestation of a regional market system (*Hlavica – Procházka 2020a*, 79–81, fig. 33). I then sought to test the possibility that the major centres functioned as nodes within such a market system by examining potters' marks and concluded that the examined archaeological evidence did not invalidate but rather supported the proposed model.

Nevertheless, certain aspects of the model remained, and still remain, enigmatic. This includes the incorporation of contemporary centres located beyond the topographical divide of the Small and White Carpathians (in present-day Slovakia), and the role of Mikulčice, a centre presumed to be the primary power centre of Great Moravia and which appeared to occupy a low-tier position in the market hierarchy. The integration of central places along the Danube, both under Great Moravian and Carolingian control, also remained unclear (*Hlavica 2023*, 84–86, fig. 43).

Potters' marks, which formed the primary material basis of my work, were undoubtedly a valuable source of information. A comparative evaluation of the assemblage produced new insights into the distribution of ceramics, primarily at the local level, i.e. within the centres and their hinterlands.

The spatial distribution of pottery marks on a local scale, i.e. within centres and their suburbs and the spatial distribution of morphologically and stylistically related ceramics in the surrounding areas, further supported by ceramic provenance study (*Hlavica et al. 2024*), corresponded to the unrestricted circulation of goods secured by a market network. Particularly in the context of centre–hinterland relationships, it may also indicate the mobility of people, illustrating the market community as an endogamous unit (cf. *Plattner 1989*, 198; *Skinner 1964*) and the trade of goods for which pots served as containers (e.g. salt, which was locally unavailable) or goods which were transported together with pots as part of trade (e.g. as the property of buyers or sellers).

In contrast to the local scale, links at the regional scale, i.e. among major market centres, appeared weak, suggesting a predominance of self-sufficiency of different market zones in the production of everyday ceramics. This was not unexpected. Pottery clay is widely available, and there was therefore little incentive to systematically transport everyday ceramics over long distances between market centres.

This solar system of markets, with only minor overlaps, also reflected the social and political fragmentation of 9th-century Moravia with less interconnected market communities, where market centres corresponded to spheres of political influence (*Minc 2006*, 84). I incorporated this economic and political fragmentation into my model and hypothesised that the economic and political structure of Great Moravia aligns more closely with a decentralised confederative arrangement than with a centralised hierarchy (*Hlavica 2020b; 2023*, 26–31).

These initial findings undoubtedly require further refinement. Deepening our understanding of the nature of mutual economic interactions among the Moravian centres is crucial. At the beginning of our collaboration, Rudolf Procházka and I (*Hlavica – Procházka 2020b*) highlighted the significance of artefactual assemblages of regionally distributed goods, such as those made of stone and iron. We consider a detailed study of these artefacts essential for advancing our understanding of the economic links among Great Moravian centres. While primarily locally distributed ceramics suggest the existence of a solar system of markets representing more autarkic market communities in Moravia, regionally distributed goods may help to determine whether a parallel network, such as a dendritic one facilitating the distribution of long-distance trade goods among the centres, was also in operation (*Hlavica 2023*, 36–37).

Macháček has taken a contradictory approach to the model presented above. On the one hand, he rejected the notion of Great Moravia having a monetary economy and market system capable of supplying both centres and hinterlands. He views this as incompatible to his interpretation of the Moravian polity, which is based on the application of anthropological concepts such as redistribution (*Macháček 2012; 2015; cf. Earle 2011*). On the other hand, he has integrated certain aspects of the model into his work. One example is *Tom Barfield's* (2001; 2023) concept of shadow empires (e.g. *Macháček et al. 2021*, 281; *Macháček 2024*, 45), which I incorporated into my theoretical framework to address the apparent contradiction between contemporary written sources that present Great Moravia as a more centralised polity and the archaeological record, which suggests the contrary (*Hlavica 2020a*, 44–45; 2023, 8–9, 21–23). However, he did not develop the concept in any meaningful way. I believe the notion of shadow empires holds considerable explanatory potential and deserves much deeper consideration in future research.

In response to his latest discussion paper (*Macháček 2026*), I aim to demonstrate that much of the recent criticism stems from an incomplete understanding of both my model and the broader anthropological concepts and frameworks on which it is based. To begin, I wish to emphasise that dividing the complex scholarly debate on the relationships between centres and their hinterlands into three conflicting schools of thought is, in my opinion, an undue simplification that diminishes the explanatory potential of the currently available data. I will then respond to the critique of my market-system model, highlighting some shortcomings and simplifications of the original concept.

Three models or three aspects of one diachronic model?

The current discussion about the nature of economic interaction between centres and hinterlands is framed as a zero-sum game by Macháček. He introduces the reader to three schools of thought, which he views as fundamentally conflicting. He also interprets the Great Moravian economy as a static and homogeneous phenomenon. In reality, however, the Great Moravian economy was a dynamic process that could manifest differently across time periods and geographic regions within the archaeological record. As I will illustrate, in order to understand the relationship between centres and their hinterlands, it is essential to develop a diachronic image of urbanisation in early medieval Moravia and to integrate our analytical framework accordingly.

There are essentially two forces behind urbanisation: institutional (top-down) and generative (bottom-up) forces. While top-down forces are maintained by enduring institutions, social structures that persist beyond a single generation and incorporate divisions of labour, bottom-up forces such as self-governance and spontaneous coordination, emerge from people's actions and interactions outside elite control. It would be an oversimplification to attribute the emergence of urban centres and the maintenance of urban order to one of these forces alone. In reality, both are always at play (*Smith 2024*). Even the founding of a centre by ruling elites is rarely, if ever, a purely top-down project on a greenfield site, and archaeological evidence of earlier occupation is common (*Fernández-Götz – Smith 2024, 239*).

This interplay of institutional and generative forces likely characterises the development of major ninth-century Moravian centres as well. These centres were not merely greenfield projects established by Great Moravian princely elites but gradually developed from pre-Great Moravian settlements. Over time, the forces sustaining their urban order naturally evolved.

At Břeclav–Pohansko, considered the apex of the Great Moravian market system, the earliest settlement activity dates back to the sixth century (*Dostál 1985, 75–79*). Other significant Moravian centres with presumed market functions during the Great Moravian period such as Staré Město near Uherské Hradiště, Staré Zámky in Brno-Líšeň, Znojmo, Olomouc, and potentially others appear to have emerged, if not in the sixth century, then in the seventh or eighth century (*Galuška 2014, 189–191; Měřínský 2014, 201; Kalousek 1955, 14; Šlězár 2018, 120*). As I have argued in previous works (*Hlavica – Procházka 2020a; Hlavica 2023, 46–50*), their geographic locations reveal a spatial relationship with one another. Together, these sites formed a system that, according to my model, served as the backbone of the Moravian market network in the ninth century.

Due to the decentralised nature of the political landscape prior to the emergence of the Great Moravian polity in the 9th century, this nascent system of centres was unlikely to have been orchestrated through top-down planning by a single elite authority. Rather, these settlements emerged from prevailing generative forces driven by local communities. These communities may have found it advantageous to aggregate in specific locations that maintained spatial relationships with one another. Besides other possible initial motives, such as religious, defensive, or simply social ones, they likely sought to benefit from contact with merchants travelling along the inter-regional trade routes passing through eastern Central Europe at the time (*Curta 2025; cf. Theuvs et al. 2021, 455–459*), as evidenced by the presence of various imports and specialised craft production at these pre-Great Moravian sites (*Klanica 1974, 26–27; Macháček 2010, 454–455; Měřínský 2014, 204; Šlězár 2018, 120*).

This aggregation of people and the resulting need for more complex organisation, including the control of trade route segments, likely enhanced top-down forces, fostering the institutionalisation of Moravian princely authority (**kъnъnъg*) and the rise of a warrior aristocracy. As suggested by the spatial regularity of later market centres, Moravian princes were aware of each other's domains and segmented their controlled territories into zones with a semi-diameter of approximately 30 km around major centres. This distance, which I labelled *half-day travel* based on C. Spencer's model of territorial expansion (*Spencer 2010, 7119; cf. Unger 2024, 114*), also roughly corresponds to a one-day journey for a loaded merchant caravan (cf. *Spufford 2002, 200–201; see also Ohler 1989, 97–101*).

As with Scandinavian Bronze Age polities (Kristiansen 2016, 178; see also Ling *et al.* 2018, 499, fig. 7), emerging leaders may have sought to interconnect their domains into confederacies. Such alliances would have helped reduce intercommunal conflicts (see also Gibson 2011, 224–225) and enabled corporate control over longer stretches of trade routes, thereby increasing the revenues derived from them. In my opinion, this was one of the foundational elements upon which the Great Moravian polity was later constructed. Additionally, some evidence suggests that similar power decentralisation was not a phenomenon limited to Moravian territory but was originally characteristic of early medieval Slavic polities in Central Europe in general (e.g. Třeštlík 2010, 84–85).

Developing a diachronic model of urbanisation in Moravia – something that is currently lacking – is essential for understanding how Moravian centres secured their food supply. Subsistence strategies likely varied among emerging centres, depending on multiple factors, most notably environmental conditions. These strategies also evolved as top-down institutional forces became stronger, as populations grew, and as social and economic roles became more specialised. In the earlier stages, it is, however, not difficult to imagine that the communities within these centres sustained themselves through a variable mix of agriculture, hunting, and foraging. During the initial centuries of Slavic occupation of Moravian territories, it is important to consider that areas beyond the immediate surroundings of central settlements in the seventh and eighth centuries may still have been covered by dense forests or shrubland, as suggested by written sources such as Ibn Rustah (Bartoňková *et al.* 1969, 345). This would have complicated the creation of a denser network of agricultural settlements farther from the centres.

In my paper on early medieval iron production in Moravian peripheries (Hlavica 2025), I introduced the Scandinavian concept of *utmark*, an outlying zone where, due to environmental constraints, only seasonal settlements existed and from which resources (including food) were extracted seasonally (Øye 2005). This type of resource extraction, particularly in the case of iron production (see Loftsgarden 2021), led to deforestation and the transformation of forested areas into arable land. These lands could then be permanently settled, as illustrated by the case of medieval England (Lewis 2005). Current knowledge about iron-production landscapes in early medieval Moravia, such as the Moravian Karst, indicates that seasonal exploitation of the peripheries remained active, at least in part, even during the ninth century. In some areas, such as those around present-day Litovel and Uničov, this pattern appears to have continued into the tenth century (see also Hlubek – Šlězár 2014, 590, fig. 9).

The concept of seasonal exploitation becomes particularly relevant when considering the model (Macháček's Model No. 2) introduced by P. Dresler (Dresler 2016) and later adopted by M. Látková (Látková 2017), which presents Great Moravian centres as largely self-sufficient in food production. Although I consider this model somewhat reductionist, as it does not account for the parallel supplying of centres from the hinterland alongside their own production, it does potentially reflect one aspect of the subsistence strategies inherited from earlier phases of centre development that remained relevant into the ninth century. As emerging centres grew, they likely directly exploited agricultural zones in their immediate proximity, what Dresler calls *Umland*. This direct exploitation of the immediate surroundings may have been the most optimal strategy, as illustrated by classical land-use models in economic geography (cf. Smith 1976, 7–10, fig. 1). It remained optimal even when these centres began relying more on the wider hinterland for additional food supply.

The idea of centres producing food can be explicitly supported by the presence of agricultural tools from Břeclav–Pohansko, many of which show signs of regular use and repair (Dresler – Beran 2019, 294). Without more detailed metallographic analyses, an even more substantial assemblage has been recovered from Mikulčice (Poláček 2003). A very detailed evaluation also comes from the contemporary centre of Bojná in present-day Slovakia (Borzová *et al.* 2020). Direct exploitation, as evidenced by these agricultural tools, may have been carried out with the assistance of nearby worksites used either by centre-based communities or by groups closely linked to them. In this light, the presence of archaeologically attested ninth-century features in the close surroundings (*Umland*) of Břeclav–Pohansko does not contradict Dresler’s model.

However, as populations grew, food consumption and the demand for other resources inevitably increased, likely surpassing the centre’s own production capacity. The need for more efficient exploitation of distant areas most probably again strengthened top-down institutional forces. Institutions and their representatives not only maintained order and resolved internal conflicts within the settlements themselves during this period, they likely gradually extended judicial control over the exploited surrounding areas for the same purpose by applying a customary legal framework governing land use (cf. Øye 2005, 12; Baug 2015, 124). This extension of institutional authority beyond the centres likely contributed to the territorialisation of early medieval Moravia, as representatives from emerging centres began to assert control over the regions aligned with them (cf. Iversen 2017, 250–252).

Thus, more remote areas of the hinterland could be safely exploited, and at least in some instances probably under a seasonal or temporary regime. Environmental changes caused by this exploitation – mainly deforestation – then led to the formation of new permanent settlements in areas where this had previously been impossible. These newly established settlements then supported central places not only with agricultural products but also with goods from hunting, forest farming, and pasture, as well as other production, including, where possible, the smelting of iron and the crafting of stone products. As P. Dresler observes (Dresler 2016, 234–235), the depopulation of central places during the decline of Great Moravia may have accelerated this colonisation process, bringing new permanent inhabitants to both the former immediate surroundings and the more remote hinterlands of these declining centres.

The ideas summarised above certainly require serious elaboration, particularly regarding chronology. However, a key conclusion is that neither uniformity in the relationships between centres and their hinterlands, nor their synchrony, singular status, or function for rural settlements, can be assumed. Therefore, I argue that the model of rural settlements supporting central places with their production (Macháček’s Model No. 1) does not fundamentally contradict the model of centres producing food for themselves (Macháček’s Model No. 2). With appropriate refinement, they can in fact be seen as complementary.

The only missing element is the force that enabled the circulation of goods within this system of centres and rural settlements. In this context, the model of the Great Moravian market system (Macháček’s Model No. 3) simply describes the mechanisms that effectively facilitated the distribution of products within the ninth-century Moravian economy. Although Macháček argues otherwise, this model is not in conflict with the other two as he defines them. All three can be integrated into a single, coherent diachronic framework.

Redistribution, market, and money in Great Moravia

An anti-market stance is not uncommon among archaeologists, but it is often more ideological than rational in nature (*Blanton – Feinman 2024*, 2–3). In this vein, Macháček did not provide a detailed explanation of the economic context in which he places redistribution – supposedly the main driver of the 9th-century Moravian economy – nor did he explain why he views it as fundamentally incompatible with the presence of markets (see *Macháček 2012*, 15; *2015*, 473). In this regard, he should clarify his position by presenting a more elaborate model of the economic and political structure of Great Moravia, which could help move the scholarly debate forward.

The inconsistency in his reasoning becomes especially evident in the attempt to marginalise the role of elites in Great Moravian centres, as suggested in the final paragraph of his discussion article. Redistribution, which Macháček previously emphasised, is intrinsically linked to elite political economies. It serves as a mechanism for fulfilling the political agendas of elites, not as a strategy antagonistic to market exchange. It does not contradict the existence of markets, as he contends, because it does not significantly interfere with the circulation of everyday goods. Rather, redistribution typically involves mobilising such goods for institutional financing, alongside the mobilisation or production of prestigious items intended for building and sustaining elite power networks and hierarchies (*Earle 2011*, 239; *Schortman – Urban 2004*, 190–192).

This raises a fundamental question: how could a redistributive system operate without elites or with only marginal top-down forces? What would be its objective? The Moravian archaeological record clearly reveals redistributive artefacts such as highly decorated jewellery (*Ungerman 2020*; *Krupičková 2024*) and elite warrior equipment, pointing to the prominent role of a warrior aristocracy (*Košta – Hošek 2014*, 306–307; *Kouřil 2020*). In addition, elite residences are well documented, with ‘palatial’ structures (*Galuška 2011*, 106–108) and so-called ‘magnate courts’ (*Dostál 1975*; *Macháček 2010*, 478–484) attested in major centres.

Conversely, how were basic iron agricultural tools and low-cost stone artefacts such as quern-stones, whetstones, spindle whorls, and pottery distributed across the region through mere redistribution? While household self-sufficiency may partially explain this, it cannot account for the widespread distribution of certain artefacts such as quern-stones, which travelled over considerable distances, likely through multiple centres (e.g. *Přišáková 2016*, 118, 121; *Hlavica et al. 2023*, 62–63).

In contrast to Macháček, I have presented an explicit model that explains distribution mechanisms through market forces and situates them within the broader political and economic framework of a regional market system. Macháček rejected the model of the Great Moravian market system, viewing it as incompatible with his own model of redistribution. However, he fails to acknowledge that market activity is not inherently in conflict with redistribution, nor is it incompatible with the collective-action theory he recently employs in support of his position (see *Blanton – Feinman 2024*, 6).

One of Macháček’s current objections is that archaeological data are equifinal, i.e. that different processes can lead to similar outcomes in the archaeological record (*Renfrew 1977*, 83). He uses this argument to dismiss attempts to connect archaeological evidence with economic models. However, in the very text from which he draws the concept (*Hlavica – Procházka 2020b*, 75), Rudolf Procházka and I, drawing on anthropological theory, argued

that everyday goods, especially pottery, largely avoid the problem of equifinality. These low-cost, widely available items are subject to continuous resupply due to breakage and typically lie on the margins of elite economic interest (Hlavica 2023, 53, Klír – Štefan 2025, 125). Pottery, therefore, is not only a legitimate but an ideal archaeological material for studying exchange mechanisms, particularly those related to market dynamics, as there is no substantive evidence to suggest that its distribution was ever monopolised by elite institutions (Stark – Garraty 2010, 44, 49–50; Garraty 2009, 158).

The spatial distribution of morphologically and stylistically distinct ceramics around major Moravian centres clearly identify these sites as hubs within production-distribution networks, connecting them economically to their hinterlands. Macháček's analysis of pottery from one such hub – Břeclav-Pohansko – reveals an increase over time in ceramics produced by specialised potters at the expense of non-professional production. He originally interpreted this as a gradual shift from non-professional production toward greater reliance on the market, for which more professionally made ceramics were intended (Macháček 2001, 219–221, 256). Later, he abandoned this view in favour of a redistributive model. However, he has not provided a coherent alternative explanation for the aforementioned increase in professionally made ceramics that would align with his new argumentative position. What does this trend mean in the context of redistribution? How and why did such ceramics reach the broader hinterland?

Macháček further argues that the network between centres and rural settlements, as evidenced by identical potters' marks, was weak. He refers only to two identical marks – both associated with Břeclav-Pohansko – and claims that no identical marks are linked to Mikulčice. This, however, is incomplete. My assemblage, unfortunately, did not include evaluated material from rural settlements, but only from two rural cemeteries (Nechvalín – 5 marks, Prušánky – 23 marks) and one hamlet near Mikulčice's fortified area (Trapíkov – 2 marks). Nonetheless, identical marks between Mikulčice and Nechvalín have been explicitly presented (Hlavica 2023, 68, fig. 29). Additionally, an identical set of marks is found at the rural site of Pellendorf in modern Austria, as well as at Mikulčice and Pohansko (Hlavica 2023, 81–82, fig. 42; see also Kühnreiber 2019). Finally, more identical marks were identified and explicitly presented from Trapíkov and Mikulčice (Hlavica 2023, 80, fig. 40; see also Hladík et al. 2022; cf. Lebsak – Hlavica in press). Given that marked vessels are generally rare and most pottery circulated unmarked (see also Varadzin 2005, 170–174, tab. 1–2), these findings are not negligible.

Two of the marked vessels found in Mikulčice, which bear marks identical to those from Trapíkov, were of non-standardised forms, indicating production by less specialised potters possibly outside the centre of Mikulčice. This shows that ceramic flow in the system could be bidirectional: from centres to the hinterlands, but also the other way around. In my work, I hypothesised that craft specialists in centres could have been supplied by producers from the hinterland. This idea was based on the variability of pottery marks in production areas such as Břeclav-Pohansko – Forest Nursery and Staré Město – U Víta, which suggests a non-centralised, market-based production and distribution system in which craft specialists actively participated (Hlavica 2023, 72–80, fig. 38, 39). This hypothesis has since been further supported by archaeometric studies. Pottery from waste pits in the production area of Staré Město – U Víta originated from different parts of the centre's hinterland where settlement activity has been documented (Hlavica et al. 2024, 1007–1010, 1012–1013, fig. 12).

A lack of a solid argumentative basis is also evident in Macháček's rejection of the monetary role of axe-shaped bars. He asserts that such bars cannot be archaeologically proven to have functioned as currency. His position is, however, rooted in the work of P. Urbańczyk (2008, 156–157), who misinterpreted J. Piaskowski's analysis of Slovak axe-shaped bars. Piaskowski acknowledged that these bars could serve as raw material (Piaskowski 1964, 137), but he never claimed that their primary function was to serve as transportable semi-finished products. Urbańczyk's view was later adopted by I. Štefan (Štefan 2011, 343) and subsequently by Macháček (Macháček 2012, 15). However, Štefan has since revised his stance (Štefan 2014, 158) and most scholars now accept axe-shaped bars as currency tokens (see Curta 2025).

It is clear that iron, as a raw material, originated from multiple regions of early medieval Moravia. However, the primary semi-product transported from smelting sites was not bars but iron blooms. These blooms have been found in Great Moravian centres (Merta 2019; Merta et al. 2022), but they were rarely produced there, as analyses of iron slag confirm (Hlavica et al. 2022, n. 3 on p. 332; Lebsak – Kapusta 2024, 67, tab. 3). Additionally, in an archaeological experiment conducted by the historical smith Patrick Bárta and myself using a wrought-iron bloom experimentally smelted by O. Merta and his team, we concluded that processing such blooms into axe-shaped bars, and even more so further forging these bars into finished tools, results in enormous iron loss during the forging process (Hlavica et al. 2020, 25; Hlavica – Bárta 2021, 17). This demonstrates that axe-shaped bars were most likely intended as finished products, with their use as raw material reserved only for emergencies (see Hlavica et al. 2022, 346). Intentionally forging a semi-product into such a shape not only lacks economic rationality but also complicates subsequent re-forging into a finished tool, making it both technically and materially demanding.

Based on these experimental results and several cross-cultural analogies, I attempted to define an evolutionary sequence of axe-shaped bars. I proposed their origin in ritual practices, in which real axes served as grave goods or ritual offerings. This is not particularly surprising, as axes were the main tools for the transformation of the woodlands with which the Slavs were probably surrounded at the onset of the Early Middle Ages (cf. Hlavica 2025). In these grave goods, pieces of inferior quality or unfinished tools were likely often included, as can be demonstrated by an exemplar dated to the late 8th century found in Devín, Slovakia (Hlavica et al. 2022, n. 1 on p. 329).

In Moravia, I presume that through gradual simplification these objects evolved into forms from which a functional axe could no longer be made. This process of simplification is supported by several analogies (Hlavica – Bárta 2021, 18). Among the most interesting are finds from the 4th and 5th centuries in what are now the republics of Tatarstan and Udmurtia, where transitional types of axes and axe-shaped bars can be identified, sometimes with the remains of axe hafts still present (Szmoniewski 2022, 8).

The earliest stylised axe-shaped bars were apparently large items, with a weight comparable to that of real axes (Hlavica et al. 2022, fig. 1). These large, impractical pieces of iron probably already functioned as social currency, i.e. were used primarily in non-market exchange intended to transform social relationships (see Graeber 2012, 412). It is uncertain whether they were already used in parallel in market exchange at the time of their appearance, or if such market activity had yet to emerge. However, through an evaluation of the assemblage from Staré Zámky in Brno-Líšeň, I attempted to demonstrate that small

and miniature axe-shaped bars, which probably appeared later, were likely integrated into such exchange within Great Moravian centres, as they circulated within them without any apparent constraints (*Hlavica et al. 2022*, 331–347, fig. 11).

In his further search for inconsistencies in my argumentation, Macháček also attributes to me the claim that the economies of centres were controlled by elites, which he believes would make it impossible for craft specialists to sell their surplus. This is, however, a misinterpretation. In my original work, I stated that Great Moravian elites were in a position to create price monopolies (i.e. to apply bottlenecks) on the flow of imported commodities, which entered the market through a dendritic network with an apical market node controlled by Mojmirid elites (*Hlavica 2023*, 35). Among these goods was likely salt, which is explicitly mentioned in the Annals of Fulda (*Reuter 2012*, 124) and the Raffelstetten customs regulation (*Třeštlík 1973*, 874). Besides an uncertain volume from Bulgaria, salt arrived in large quantities aboard ships from the Frankish realm, travelling along the Danube and possibly partially transported by land (see *Třeštlík 2010*, 187). It then had to be distributed to the wider population in both the centre and the hinterland, as it was crucial for food production and long-term food preservation. I can hardly imagine a system of centralised redistribution of this commodity to the entire population of Moravia. How would such a system operate? From a purely economic perspective, it would be extremely costly and time-consuming (*Stark – Garraty 2010*, 44). This is why I hypothesised that elite (princely) patrons of markets hosted market events in their residence centres and benefited directly from market exchange, selling locally unavailable goods that they had obtained from long-distance traders. I therefore regard the Great Moravian princely kins as the first ‘entrepreneurs’, securing the inflow of goods from long-distance trade and offering them to the population. This granted the Moravian elites a monopolistic position within the market, enabling them to manipulate prices, accumulate wealth, and invest in prestige as a means of competing with other elites in comparable positions.

There are, in fact, indications that not only princely elites but also lower-ranking local leaders benefited from trade. The rural site of Brankovice, recently analysed by J. Benech, is situated almost exactly between the major market centres of Staré Město near Uherské Hradiště and Staré Zámky in Brno–Líšeň, and contains ceramic pieces characteristic of the market zones of both centres (*Benech 2024*, 228, fig. 68). Additionally, archaeometric analysis of ceramics and comparison with fabrics previously identified in pottery from Staré Město near Uherské Hradiště show that some of Brankovice’s pieces attributable to Staré Město’s fabrics A and D probably originated from sites in the southern or southeastern hinterland of Staré Město near Uherské Hradiště (*Benech 2024*, 64; cf. *Hlavica et al. 2024*, fig. 12). Also noteworthy are indicators of possible local production of professional ceramics in the Morava River ceramic style (Brankovice’s fabric A1) and evidence of other crafts, such as iron production (*Benech 2024*, 64, 125–144). This evidence, along with the evidence of imported ceramics, suggests that Brankovice may have functioned as a lower-tier marketplace, strategically situated between the major Moravian centres. Its location, accessible by a merchant caravan within one day from either centre, further supports this interpretation. In this context, more research is indeed necessary, not only on Brankovice, but also on other areas in geographically advantageous positions among major central places, such as those around Bořitov (see *Mikulec et al. 2022*, fig. 1) and Dolní Věstonice (*Hlavica – Procházka 2020b*, 78; see also *Poulik 1948–1950*, 84–87; *Macháček 2001*, 247).

Finally, I also find Macháček's attempt to support his anti-market position by comparing the distribution system of Přemyslid Bohemia in the 10th to 12th century, as defined by L. Varadzin (*Varadzin 2010*, 56), with the situation in 9th-century Moravia to be flawed. Systems of overlapping and non-overlapping distribution zones are not indicative of whether market or non-market forces were responsible for the distribution of goods. Aside from the fact that such zones also overlapped to some extent in 9th-century Moravia – as illustrated, for instance, by the aforementioned Brankovice – both systems in fact reflect different types of market systems as defined by economic anthropology (*Minc 2006*, 83–87, Fig. 1; see also *Hodges 2012*, 23–25, fig. 3; *Hlavica 2023*, 42–44, fig. 15).

While solar market systems (with non-overlapping market zones) indicate poorly developed hierarchies and networks among trade centres that combine political and economic functions – where political control coincides with economic influence – non-centralised market systems (with overlapping market zones) reflect a greater degree of horizontal networking not confined by administrative boundaries (*Minc 2006*, 84–86). This suggests a more advanced economic and political integration of the region in which regional elites act as less independent economic agents. Thus, the differences between the market systems in Přemyslid Bohemia and Mojmirid Moravia are more reflective of differing degrees of political and economic integration than of market or non-market forces underlying ceramic distribution. If Macháček wishes to reject the market-system model, he must seek alternative evidence to substantiate his position.

Concluding remarks

In the discussion section of his recent paper, Macháček argues that the presence of a market economy in Great Moravia was highly unlikely, as it was an uncommercialised economy lacking both a market for internal trade, a class of independent merchants or a currency that would have served as a universal medium of exchange. He further claims that craft specialists worked primarily for elites who benefited from long-distance trade, and that any surplus available was invested in enhancing the power and prestige of Moravian princes, who redistributed these 'goods' selectively based on their political goals.

I find a portrayal of such a system in which all producers would be controlled by elites and all production was channelled solely to enhance elite wealth and prestige highly questionable. This vision of total control of all aspects of economic life finds no support in the archaeological record of early medieval Moravia. Conversely, it relies on outdated social models inherited from the era of New Archaeology, popular in the 1960s and 1970s, which imagined that '*rulers and elites controlled, or strived to control, all aspects of life and society...*' (*Smith 2024*). The final attempt of Macháček to reinforce his redistribution model with collectivist theory as promoted by *Graeber and Wengrow (2021)* bears no meaningful connection to the preceding argumentation and lacks any substantial justification.

At this point, I must reject Macháček's criticisms. I fully acknowledge that my economic and political model of Great Moravia centred on the 9th-century Moravian market system is far from flawless (see *Šenk 2023*; *Unger 2024*; *Kalhous 2025*). Nevertheless, I continue to see it as a productive starting point for assembling the scattered fragments of Great Moravia and for subsequently exploring the lived experiences of our early medieval predecessors in greater depth.

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DISCUSSION – DISKUZE

The environmental perspective of the relationship between Great Moravian centres and their hinterland: A response to Jiří Macháček's polemic

Environmentální perspektiva vztahu velkomoravských center
a jejich zázemí: Reakce na polemiku Jiřího Macháčka

Michaela Látková

The paper presents a critical review of the interpretative model of the relationship between Great Moravian centres and their hinterland formulated by Jiří Macháček (2026), from an environmental and empirically based perspective. Based primarily on archaeobotanical analyses of the Mikulčice-Valy site, supplemented by archaeozoological data and new findings from settlements in the broader hinterland of the centre, the work endeavours to refine the methodological foundations of archaeobotanical interpretation and critically evaluate reductionist approaches that lead to a dichotomous understanding of the 'centre–hinterland' relationship. Using taphonomic models, the ecological evaluation of habitat requirements of wild species and spatial distribution of archaeobotanical assemblages, it is documented that Mikulčice-Valy cannot be interpreted either as an exclusively consumption centre dependent on redistribution from the hinterland, or as a unit that is fully self-sufficient in terms of the food supply. Empirical data, on the contrary, point to a complexly organised economic system in which the centre had its own production and processing capacities, combined with functionally differentiated and ecologically adapted links to the wider settlement hinterland. The study emphasises the need to abandon the schematic dichotomy of centre and hinterland in favour of an empirically testable model of the economic organisation of Great Moravian centres.

archaeobotany – Mikulčice-Valy – Great Moravia – hinterland – subsistence

Příspěvek představuje kritickou revizi interpretačního modelu vztahu velkomoravských center a jejich zázemí formulovaného Jiřím Macháčkem (2026), a to z environmentální a empiricky založené perspektivy. Studie vychází především z archeobotanických analýz lokality Mikulčice-Valy, doplněných archeozoologickými daty a novými poznatky ze sídel v širším zázemí centra. Cílem je zpřesnit metodická východiska archeobotanické interpretace a kriticky zhodnotit redukční přístupy, které vedou k dichotomickému chápání vztahu „centrum–zázemí“. Na základě aplikace tafonomických modelů, ekologického vyhodnocení stanovištních nároků planě rostoucích druhů a prostorové distribuce archeobotanických souborů je doloženo, že Mikulčice-Valy nelze interpretovat ani jako výlučně konzumní centrum závislé na redistribuci ze zázemí, ani jako plně potravinově autarkickou jednotku. Empirická data naopak poukazují na komplexně organizovaný hospodářský systém, v němž centrum disponovalo vlastními produkčními a zpracovatelskými kapacitami, kombinovanými s funkčně diferencovanými a ekologicky adaptovanými vazbami na širší sídelní zázemí. Studie zdůrazňuje nutnost opustit schematickou dichotomii centra a zázemí ve prospěch empiricky testovatelného modelu hospodářské organizace velkomoravských center.

archeobotanika – Mikulčice-Valy – Velká Morava – zázemí – subsistence

Introduction

The discussion of the relationship between strongholds and their economic hinterland belongs to broader topics of early medieval archaeology concerning the functioning of political centres, the organisation of production, and methods of food distribution in more complex settlement structures. Similar issues are also discussed within environmental archaeology and historical economics when studying early medieval centres in various regions (Klanica 1987; Dresler – Macháček 2008; Galuška 2008; Poláček 2008; Mařík 2009; Danielisová – Mařík 2012; Hladík 2014; Dresler 2016; Látková 2017; Dresler – Beran 2019; Látková – Hajnalová 2019; Hladík *et al.* 2022). Archaeobotanical data also play a crucial role in this debate (Látková 2017; Látková – Hajnalová 2019; Hladík *et al.* 2022), as they allow the reconstruction of subsistence strategies and agricultural production. The body of empirical findings presented in the monograph *The Archaeobotany of Mikulčice. Food Supply to the Early Medieval Stronghold* (Látková 2017) focuses on the systematic analysis of archaeobotanical finds from various parts of the Mikulčice agglomeration. The aim of this work was to critically review assumptions about the food subsistence of the Mikulčice-Valy Great Moravian stronghold based on taphonomic models, the ecological requirements of wild plants and spatial distribution of archaeobotanical assemblages.

Macháček responds critically in his discussion paper (2026), in which he attempts to systematise and compare three models of the relationship between centres and hinterlands in Great Moravia: hierarchically organised economic space with the systematic redistribution of products from the hinterlands to the centres (model 1); food self-sufficiency of centres, which assumes their own production activities within the agglomeration (model 2); and existence of local markets, where product exchange took place through semi-formal mechanisms (model 3). Macháček places the interpretation based on archaeobotanical data in the second category (model 2).

Although Macháček (2026, 109–113) presents centres as systems of redistributive domination with almost no production activity, archaeobotanical research offers an alternative view (Látková 2017, 71–129). However, it is necessary to note that Macháček interprets the conclusions of my study inaccurately in some points. The archaeobotanical study does not argue in favour of the full food self-sufficiency of the Mikulčice-Valy site in the sense of an isolated agrarian system, but points to a high level of economic organisation, which also included some of the production activities taking place directly within the central settlement. Archaeobotanical data interpreted using two taphonomic models provide support for the interpretation of the Mikulčice-Valy site, which appears to have been not only a passive consumer of external surplus products from the hinterland, but also had the capabilities and sufficient labour force for partial production and processing of crops (Látková 2017, 103).

The aim of this response is to systematically present the methodological foundations of archaeobotanical analysis, to supplement empirical findings that have not been considered in the discussion thus far, and to critically evaluate the consequences of reductive and schematic approaches in interpreting the relationship between the centre and its surroundings. The presented arguments are intended to contribute to a deeper understanding of the observed phenomena and to the formulation of an interpretative framework that will allow us to capture their internal complexity and regional conditionality without *a priori* assumptions.

Between consumption and production: Towards a methodological interpretation of archaeobotanical evidence from Mikulčice-Valy¹

The following chapter summarises the empirical archaeobotanical data from Mikulčice-Valy and explains the methodological framework for their interpretation. These assemblages represent one of the most extensive archaeobotanical datasets for the Great Moravian period, allowing for a more detailed assessment of the nature of agricultural production, crop processing, and the organisation of the food economy within the central agglomeration. Interpretation of my work (Látková 2017) as presented by Macháček (2026), there is rather a distortion of the original argumentative framework. My study does not present the model of local agricultural production as free speculation, but as an analytical alternative based on the ecological demands of cultivated species, soil conditions, taphonomic analyses, and structural differences in archaeobotanical assemblages. For this reason, I consider it necessary to comprehensively present both taphonomic models, including their methodological foundations, interpretative limits, and the potential they offer for the reconstruction of the agricultural organisation of archaeological sites.

The organisation of agricultural production, processing, and consumption of crops was analysed using the taphonomic models (specifically crop processing models) of Hillman (1981; 1984), Jones (1984), and Fuller and Stevens (2009). In the context of archaeobotany, these taphonomic models define the filters through which plant remains pass from harvest to burial. They are utilised here strictly as a site-formation methodology to identify the nature of agricultural waste, which must be conceptually distinguished from the broader socio-economic or spatial models of centre–hinterland relationships. These interpretative frameworks provide a basis for a deeper understanding of the functioning of agricultural infrastructure within the agglomeration (Látková 2017, 101–104; Látková – Hajnalová 2019, 411–412).

The taphonomic model according to Jones (1984) is based on the ecological classification of weed seeds (weed seed categories model). It distinguishes six groups of weed species linked to various phases of post-harvest crop processing – from winnowing waste to clean stocks (Jones 1984, 60; Látková 2017, 90). This approach aims to determine the phase of post-harvest crop processing in which individual archaeobotanical assemblages formed. The results of the analysis showed that most samples from different parts of the Mikulčice agglomeration were dominated by species typical of the late stages of cleaning before storage, especially waste from fine sieving and manual cleaning before storage or consumption. In contrast, weeds characteristic of the initial stages of processing (e.g. winnowing, coarse sieving) were not identified in any of the parts of the agglomeration (Látková 2017, 92–93).

These findings suggest that the central parts of Mikulčice, as well as the peripheral zones of the agglomeration (Kopčany-Kačenáreň and Mikulčice-Trapíkov), were not a place

¹ The results are presented only in abbreviated form. A more detailed description of the methodology, its practical application and an interpretation of the findings is published in the work *The Archaeobotany of Mikulčice. Food Supply to the Early Medieval Stronghold* (Látková 2017, 87–94).

of primary crop processing, but rather an area for final cleaning, storage, and consumption (Látková 2017, 92–94). According to the interpretation of Hillman (1981; 1984) and Jones (1984), these late phases are characteristic of consumer settlements. However, Hajnalová (2012, 112) points out that waste from fine screening may also be present at production sites.

Based on the concept of Fuller and Stevens (2009), the second taphonomic model assumes the ability of a community to mobilise labour during one of the most stressful periods of the agricultural year, at harvest. According to this approach, it is possible to distinguish in the archaeobotanical material settlements whose inhabitants produced crops at the household level and settlements where production took place at a higher level of social organisation (community and/or centrally controlled). Food-producing communities at a higher level of social organisation should indeed be able to mobilise a sufficient amount of labour during the harvest so that crops can be processed as quickly and efficiently as possible.

The results of applying this model to the assemblages from Mikulčice showed that in all parts of the agglomeration, including the acropolis, the outer bailey, the extramural area, and the peripheral parts, samples with a clear dominance of cleaned grain and traces of late processing phases, especially cleaning before storage, prevail (Látková 2017, 103). At the same time, there is an almost complete absence of waste typical for the initial stages of processing, such as threshing or winnowing. These data support the hypothesis that Mikulčice-Valy, as a power centre, had its own well-organised economic system and was able to mobilise a sufficient amount of labour (Látková 2017, 103–104).

Unlike the previous model based on Hillman and Jones, which evaluates the function of archaeological contexts based on the presence of ecologically specific weed species, the model by Fuller and Stevens allows for a broader interpretation linked to social organisation and mechanisms of agricultural labour. In the context of Mikulčice, this model supports the hypothesis of the agrarian autonomy of the centre and its ability to process significant quantities of agricultural products directly on site, while also calling into question the necessity of systematically importing cleaned grain from the rural hinterland (Látková 2017, 104–105).

The archaeobotanical data thus reveal a partly paradoxical image: on the one hand, all the analysed areas of Mikulčice show signs of a consumer character, but on the other hand, the data indicate that the harvest for this agglomeration was provided by a highly organised community that went beyond the framework of a typical early medieval rural household. Only under these conditions was it possible to effectively mobilise a sufficient amount of labour to process crops during key periods. This suggests a high probability that some residents of Mikulčice were directly involved in the production of plant-based foods.

The model of seasonal involvement is neither historically nor ethnographically unique. On the contrary, ethnographic studies from different regions of the world show that the combination of specialised and agrarian activities within a single community is a common phenomenon. Evans-Pritchard (1940) describes a society whose main livelihood is raising cattle, but during the harvest season, all members of the community, regardless of their primary occupation, participate in the millet harvest. A similar case is also documented among the Kalinga of the Philippines, where women devote most of the year to pottery production, while during the agricultural season the entire community regroups for planting and harvesting (Longacre – Skibo 1994). These ethnographic parallels point to possible

scenarios in which seasonal participation in agriculture, even within an otherwise specialised community, represents a long-term sustainable model (*Hodder 1982; Fratzkin 1991; Lane 2004*).

In the spirit of Hodder's approach (*Hodder 1982*), the involvement of different social groups in the harvest and agricultural work cannot be understood solely as an ecological or economic necessity; participation has symbolic and social significance, as it builds ties between different segments of society, strengthens collective identity and internal solidarity, and alleviates tensions between groups with different social roles. The collective work of diverse social groups on the harvest thus becomes a ritual that expresses mutual dependence and shared responsibility. These practices also reflect control over resources and the environment and function as a tool of social power and symbolic communication. Therefore, agricultural activities cannot be interpreted solely as a response to environmental conditions; it is also necessary to take into account that people consciously shape and maintain them. Harvesting and crop management thus become not only a means of subsistence, but also a tool for social relations, cultural self-presentation, and the formation of social identity (*Hodder 1982, 15; 1990, 72*).

In the case of the Great Moravian site of Mikulčice-Valy, it can therefore be assumed that in times of greatest need many residents could also lend a hand in agricultural production, although they were employed in craft, religious or administrative activities for most of the year. Taphonomic models, archaeobotanical data, and ethnographic parallels together support the hypothesis that the Mikulčice-Valy site was not only a consumer-oriented centre, but also had its own production capacities, which were in some cases activated seasonally.

Localisation of the agricultural hinterland²

In addition to the actual processing of crops, it is crucial to ask where these plants, especially cereals, could have been grown, i.e. where the closest economic hinterland of Mikulčice-Valy, was located. It has traditionally been assumed that the Great Moravian centres were dependent on the broader economic hinterland for food and that the nearest arable land, in the case of the Mikulčice stronghold, was located on the river terraces, several kilometres from the centre (*Klanica 1987; Macháček 2007; Poláček 2008; Hladík 2014, 166*). This assumption was based on the logical reasoning that floodplain areas were unsuitable for agriculture, which, however, is challenged by the latest analyses and empirical evidence (*Petřík et al. 2019; Adameková et al. 2025; Janovský et al. 2025*).

From the perspective of archaeobotanics, the key to revising this theory is the analysis of the habitat requirements of the identified plant species, especially their relationship to soil reaction (pH). Soil reaction does not change as significantly over time as other soil properties (*Hájková et al. 2023, 137*), and therefore it can provide important information about the character of agricultural habitats in the Early Middle Ages.

² Summarising argumentation on this issue is published in the work *The Archaeobotany of Mikulčice. Food Supply to the Early Medieval Stronghold* (Látková 2017, 122–125).

An analysis of archaeobotanical assemblages from Mikulčice showed a surprisingly high share of species indifferent by soil pH, along with a significant representation of acidophilic species, which does not correlate with the character of soils on chernozem terraces, but instead corresponds to the acidic subsoil of sandy sediments of the Morava River floodplain (Látková 2017, 119–121). This result indicates that in the 9th century, arable land was located within the floodplain, i.e. in the immediate vicinity of the stronghold and not outside the basin, as assumed previously (Látková 2017, 125).

This hypothesis is also supported by a comparison of archaeobotanical data with the ecological characteristics of species from selected sites of the current vegetation of the Lower Moravian Valley. Particularly significant is the high ecological correspondence between the archaeobotanical assemblage and the present-day flora of the Mikulčice-Valy archaeological site (Brzicová 2014), where, similar to the medieval material, pH-indifferent and acidophilic species are dominant. Species preferring neutral and alkaline soils are only weakly represented (Látková 2017, 122–125). This pattern differs from the data from terraces, where neutral and basic soil types dominate, confirming the difference in ecological conditions.

From an agricultural and strategic point of view, situating the fields in the immediate vicinity of the stronghold made sense, primarily due to intensive and time-differentiated land management throughout the year (Hillman 1984), and also from the perspective of protection and control over resources. As for the extent of the economic hinterland, with an estimate of the population of Mikulčice in the range of 1,000–2,000 people (Stloukal – Vyhnanek 1976, 40–42), it is possible to assume a need for 60–400 ha of arable land, which, with standard productivity, corresponds to a distance of a maximum of 1–2 km from the settlement (Klanica 1987; Poláček 2008; Hajnalová 2012).

Today, the floodplain area contains extensive grain and other agricultural areas, extending to the new archaeological base at the Mikulčice-Trápíkov site. Moreover, the very core of the agglomeration—the acropolis and the outer bailey—was intensively used as arable land before the start of archaeological research in the 1950s.

In addition to archaeobotanical evidence, new geoarchaeological research has also shown that the floodplain area around the Great Moravian centres was relatively stable and intensively used in the 9th–10th century. Sediments from the Břeclav-Pohansko site do not show significant flood deposits during the entire Great Moravian period, though the continuity of sedimentation is documented from the 3rd century BC until the end of the 10th century (Petřík *et al.* 2019).

Analyses of soil, sediments and plant macroremains demonstrate intensive agricultural use of the alluvial environment during peak Great Moravian activity associated with deforestation, an increase in nitrogen-loving species, and the anthropogenic enrichment of soils, which points to systematic cultivation of fields and fertilisation of crops and meadow vegetation (Petřík *et al.* 2019, 13–14). Archaeobotanical and palynological data from the Uherské Hradiště – Sady site confirm long-term and stable agricultural production in the floodplain environment since the 8th century, despite repeated flooding dynamics (Adameková *et al.* 2025, 18). Preferential modelling of landscape use also shows that the floodplain was purposefully used as the main production area for arable land, with a disproportionately large representation of agricultural areas and a direct link to settlements (Chrástek 2013, 88).

Economic hinterland of Great Moravian Mikulčice-Valy

For a long time, the interpretation of the economic functioning of Great Moravian centres such as Mikulčice-Valy was limited by the availability of archaeobotanical data from surrounding rural settlements (*Klanica 1987; Poláček 2008; Hladík 2014*).

The absence of larger collections from sites in the hinterland of the centre does not stem from the selective approach of archaeobotany, but a long-term archaeological research strategy, in which samples for archaeobotanical analysis were not systematically collected from these sites from the beginning of research on Great Moravian centres. Archaeobotany cannot replace missing field data and its interpretative potential is directly dependent on the methodology, scope, and structure of the collected samples.

The first archaeobotanical collections from settlements in the hinterland of the Mikulčice stronghold were only obtained in recent years as part of rescue archaeological excavations. These assemblages were immediately analysed and, at the time this text is being prepared, they are already processed and ready for publication, thus creating, for the first time, a substantial empirical basis for comparing the central area of the Mikulčice-Valy stronghold and its broader rural hinterland (*Látková et al. in press*).

At the same time, it should be emphasised that the taphonomic and palaeoeconomic models presented in previous works (*Látková 2017; Látková – Hajnalová 2019*) do not assume the necessity of archaeobotanical material from all parts of the agglomeration. Archaeobotanical samples from settlements in the hinterland did not represent a necessary condition for testing the hypothesis on the degree of economic self-sufficiency of the centre (*Jones 1984, 60; Fuller – Stevens 2009, 230; Hajnalová 2012, 102–103, 105–106; Látková 2017, 87, 93*).

New archaeobotanical and archaeozoological data from settlements in the hinterland of the Mikulčice stronghold (Prušánky-Podsedky, Mikulčice-Podbřežníky, and Hrušky – Tvrdonické podsedky) demonstrate that the differences between the centre and hinterland sites cannot be reduced to a simple model of unilateral agrarian dependence. On the contrary, the data point to a functionally differentiated, ecologically adapted and largely autonomous economic system in the Great Moravian period (*Látková et al. in press*).

Archaeobotanical analyses document the cultivation of various cereals, legumes and, to a lesser extent, fruits and oil or fibre plants in the broader hinterland. The central area of the stronghold was dominated by millet, which is characterised by a short growing season, minimal soil requirements, and easy processing. This crop made it possible to satisfy food requirements in more densely populated areas, where high concentration of people demanded rapid consumption (*Kuna et al. 2013, 134–135*).

In the rural hinterland, there was a predominance of wheat and barley, crops with a longer growing season, more demanding in terms of field maintenance, and suitable for more stable and long-term agricultural use. The difference in the share of cereals between the centre and the hinterland cannot be explained exclusively by selective harvesting by the centre, e.g. millet, because archaeobotanical data show that the fields were located directly in the floodplain environment near the stronghold, and the hinterland could have supplied the centre mainly with wheat from the chernozem terraces with higher fertility and a strategic advantage. Differences in the representation of cereals thus probably reflect natural variations in the production and use of fields and functional specialisation between the centre and settlements in the hinterland. Taphonomic analyses support this

differentiation of economic functions: crop processing at the stronghold took place in a comprehensive and organised manner at the level of a larger community, while at sites in the hinterland, the crop was processed gradually or stored unthreshed and processed on an ongoing basis according to current needs, which suggests farming at the level of a family or a smaller community.

An analysis of the ecological requirements of wild-growing species tested the hypothesis that when comparing identical segetal species, in the case of a uniform origin of field crops from the hinterland, weed assemblages from the centre and the hinterland would show comparable requirements for habitat conditions. The assessment of ecological requirements was carried out based on the presence of identical taxa documented in both types of environments.

However, the results show that this was not the case. Based on the requirements of field weeds for soil pH and nitrogen content, it is clear that the fields in the hinterland had a different structure and quality than the fields in the central part of the agglomeration. Finds of seeds of herbaceous species from the hinterland show higher requirements for soil pH and a higher trophic level, which indicates more naturally fertile soils. As such, the observed differences cannot be explained solely by the varied composition of weed communities, but reflect the different ecological conditions of the cultivated fields. These results support the idea of a mosaic agrarian system in which production was carried out within a broader settlement structure, suggesting a flexible and adaptive network of local producers rather than centralised redistribution (*Látková et al. in press*).

Archaeozoological data complement the palaeoeconomic picture. The raising of livestock was a stable activity at all types of settlements, but the species composition of osteological material varied according to the function and importance of the site. The stronghold was dominated by species providing quickly processed food (pigs) and allowing flexible use, while the hinterland was dominated by species associated with more stable and long-term farming, especially cattle.

The acquired data clearly indicate that central settlements had their own production capacities and relative self-sufficiency, while the hinterland locations functioned as complementary units involved in a network of interconnected activities and exchange. The long-term continuity of economic processes and the synchronisation of activities between the centre and its hinterland underscore the functional integration and complementarity of both types of sites.

Interpreting the obtained data from the broader economic hinterland leads to a model of a decentralised, ecologically adapted economy. Centres are not merely redistribution nodes, as traditionally assumed, but autonomous units combining their own production and consumption with exchange ties to the hinterland. Each location, be it a centre or a peripheral settlement, was to some extent self-sufficient and simultaneously integrated into a functionally interconnected system.

This model takes into account ecological conditions, resource availability, production variability, and population needs, while allowing for adaptive cooperation and flexible redistribution of surplus production. The overall palaeoeconomic image shows that the centre had the capacities to ensure its own consumption and processing, while the hinterland fulfilled a supplementary and complementary role. Mutual ties between the centre and the hinterland ensured adaptive cooperation, efficient use of the landscape, and a stable food

supply. Differences in ecological characteristics, the type of cultivated crops, and the structure of livestock production indicate a sophisticated system in which individual localities combined autonomy and mutual interaction (*Látková et al. in press*).

The political-economic character of Mikulčice in a comparative perspective

The interpretation of the economic organisation of Great Moravian centres, especially Mikulčice-Valy, inevitably touches upon broader theoretical questions of the political economy of early medieval societies. The key problem is not the existence of agricultural production itself, but the way it is organised, controlled, and linked to political power. In this sense, Mikulčice-Valy represents a suitable test case for the application and critical evaluation of two influential conceptual frameworks: the cyclical chiefdoms model of *Hodges (1982; 2012)* and the *staple finance* model formulated by *Earle (1977; 1997)*.

The model of the economic relationship between Great Moravian centres and their hinterland according to *Macháček (2026)* is in many respects carefully considered and supported by archaeological and historical arguments, but certain methodological issues emerge during a critical evaluation. As a basic starting point for interpreting the Great Moravian centres, Macháček uses the model of cyclical chiefdom (*Macháček 2005*, 100–103), which is based on the temporary consolidation of power and redistributive mechanisms.

Hodges' concept of cyclical chiefdoms is based on observations of early medieval centres whose political and economic stability was limited by the absence of systematic control over basic agricultural production (*Hodges 1982; 2012*). In this model, centres are primarily places of consumption and redistribution, whose food base is dependent on the hinterland and personal ties among elites. Food production takes place outside the centres and is not organisationally integrated into their political structure. The consequence is cyclicity—alternating periods of accumulation, expansion, and subsequent decline, when redistribution networks are disrupted or exhausted.

At first glance, some aspects of Mikulčice might appear compatible with this model, especially the absence of significant grain pits directly inside the area of the stronghold. However, this interpretation runs counter to a growing body of archaeological, archaeobotanical, and other environmental data suggesting a more complex picture. The location of Mikulčice in an intensively used river floodplain, the long-term continuity of settlement, and the size of the area point to the existence of a stable economic base that goes beyond the framework of a purely consumer centre (*Látková 2017; Látková – Hajnalová 2019; Kovačiková et al. 2020; Hladík et al. 2022; Janovský et al. 2025; Látková et al. in press*).

In this context, the concept of staple finance, as developed by *Earle (1977; 1997)*, appears to be more analytically productive. This model assumes that political power is anchored in the ability to control the flow of basic subsistence commodities, especially food, through a combination of local production, regional accumulation, and redistribution. The key point is that staple finance does not require centralised storage right in the heart of the centre or its complete agrarian self-sufficiency. Production can be spatially dispersed in the hinterland, but organisationally and politically integrated into the centre as a control node.

Earle rejects the notion that the political centres of chieftaincy societies were exclusively dependent on the redistribution of food from subordinate communities, and instead assumes that elites often had their own production base of key foods. In his theory of the political economy of chieftaincy, the key is control of the most productive lands, on which, through labour or dependent peasants, staples were produced and served to finance power.

The model is illustrated in detail using the example of Hawaiian chiefdoms, where farmers cultivated not only their own plots but also fields directly belonging to the chief, with the revenues from them supporting the chief's court, warriors, priests, and ceremonial activities (Earle 2011, 39–40). Earle also emphasises that the view of the chief as a central redistributor of everyday production is misleading, because the chief's intervention in local production was selective and focused primarily on securing his own political strategies (Earle 2011, 31–32). Earle rejects the older functionalist model of the chief as a universal redistributor and stresses that elite interventions in local production were strategic, oriented towards financing power, not regulating everyday subsistence (Earle 2011, 31–32).

Storage of agricultural stocks

The issue of storing agricultural products, especially grain, is one of the fundamental issues in interpreting the economic functioning of Great Moravian centres (Pleinerová 1995, 62–63; Klanica 2008; Mazuch 2008; Hladík 2014). In the case of Mikulčice, the discussion has long focused on the absence of typical underground storage pits within the fortified agglomeration, which has been repeatedly interpreted as evidence of the non-agrarian character of the centre and its complete dependence on an external hinterland (Dresler – Macháček 2008; Hladík 2014, 173; Macháček 2026, 112). However, this conclusion is based on a narrowly reduced understanding of storage strategies and does not reflect the variability of crop preservation forms or the ecological and taphonomic conditions of the site.

Grain pits are primarily evidence of storage practices (Beranová 1965; Kunz 2004; Jevtić 2011), not a direct indicator of agricultural production. Their presence is testimony to the method and organisation of crop storage, not about the place of its cultivation or the extent of farming activity of a particular community. Grain production took place in fields that leave only very limited traces in the archaeological record, whereas storage represents a subsequent, technical-organisational phase of the economic cycle. The automatic identification of grain storage pits with local agrarian production represents a logical short-cut that leads to incorrect economic conclusions. The centre could produce grain but store it in a different form, elsewhere, or consume it continuously; on the other hand, it could also store grain without the crop being directly grown in its immediate vicinity. Storage pits, therefore, reflect decisions concerning the technical method of storing agricultural products, not the existence or absence of agricultural production itself.

Moreover, it is also problematic that the term 'storage pit' is used very loosely in archaeological literature, where this type of feature is often identified as a grain pit *sensu stricto* without critical reflection. Many authors are unaware of the functional difference between a storage pit *sensu lato* and a grain pit *sensu stricto*. These are features with distinct purposes. While a grain pit (*s. s.*) is a specialised feature primarily intended for long-term storage of grain, a storage pit (*s. l.*), often of smaller dimensions, was used to store other

types of food (e.g. meat, dairy products, vegetables, feed) or various commodities (*Beranová 1965; Kunz 2004; Jevtić 2011*). Disregarding these differences and uncritically combining different types of pits under one terminological framework leads to systematic distortion of interpretations of the economic organisation of settlements, to overestimation of storage capacities, and to erroneous conclusions about the level of agrarian production and subsistence strategies of the studied communities.

Archaeology and ethnography clearly show (*Kudrnáč 1958; Kunz 2004; Jevtić 2011; Hajnalová 2012*, 30–32, 119–120) that underground grain pits represent only one of the specialised forms of long-term grain storage.³ Their function was not to ensure daily consumption, but rather to create strategic reserves that were quickly consumed once opened (*Kunz 2004*, 31–133). Grain stored in pits was intended primarily for consumption, not for sowing, as anaerobic conditions could partially degrade germination (*Fenton 1983*, 586; *Sigaut 1988*, 22). Ethnographic and experimental research shows that most storage pits could be reused over a long period of time, with one pit being able to serve for several years to decades if well maintained, though only if it was always hygienically cleaned and burned after the contents were removed (*Bevan et al. 2024*, 500–501).

In his text, *Macháček (2026, 112)* also refers to the claims of M. Hajnalová and interprets them as a rejection of the traditional idea of grain pits as grain stores. But this interpretation is misleading; Hajnalová's study does not question the storage function of grain pits themselves, but critically reassesses their specific purpose and method of use. Her hypothesis shows that the traditional idea of grain pits as universal seed storage is untenable, as the pits could have served various forms of long-term storage of grain intended for, for example, consumption, exchange, or as an emergency reserve (*Hajnalová 2012*, 119–120). Hajnalová's scepticism therefore does not concern the existence of storage in grain pits as such, but the reduction of their function to a single, normative model—seed storage.

Hajnalová (2012, 120) argues that it is necessary to take into account the basic agromonic connections between winter and spring crops, which directly affect the need and length of storage. Winter crops are sown in autumn and harvested in the first half of the following year. If some of the harvest is to be used as seed for the next growing cycle, it is necessary to preserve it only until autumn sowing, i.e. for a relatively short period. In contrast, spring crops are not sown until the following spring, and the seeds must be stored for significantly longer and in worse climatic conditions. Archaeobotanical research shows that in Central Europe, winter cereals were dominant in prehistoric times and the Early Middle Ages (*Bogaard 2004; Hajnalová – Varsík 2010*).

The interpretation by Macháček, who uses Hajnalová's conclusions as an argument against local storage or the agrarian engagement of centres, is therefore methodologically

³ Grain could also be stored in a wide variety of above-ground and other structures that allowed for its long-term preservation. Wooden storage containers were typically used, e.g. hollowed logs or chests, to protect the grains from rodents and moisture. Another option was woven baskets made of straw or other plant materials, which ensured good air circulation. Above-ground granaries could be built on stilts at strongholds and in central settlements to protect supplies from flooding and pests. These forms of storage allowed for flexibility, combining smaller underground pits with various types of above-ground structures, depending on available space and community needs (*Kunz 2004; Jevtić 2011*).

flawed because it confuses criticism of functional uniformity with the denial of storage strategies as a whole while simultaneously overlooking the basic agronomic logic of cereal production, which itself presupposes the existence of long-term storage mechanisms.

A comparison of Mikulčice with other Great Moravian centres, even if they are centres of lesser importance or of a different character than Mikulčice-Valy, supports this conclusion. At Great Moravian strongholds such as Nitra-Hrad (*Bednár 2007, 210*), Zalavár-Vársziget (*Szőke 2007, 414; Ritoók 2015, 104*), Bojná I-Valy (*Pieta 2015, 17; Borzová et al. 2020, 12*), Devín-Hrad (*Plachá – Hlavicová 2011, 75*), Svätý Jur – Neštich (*Vavák 2019, 72*), and Gars-Thunau (*Herold 2014, 237–238*), storage pits were documented directly in their central areas, in some cases even with preserved cereal grains (*Bednár 2007, 210*). And yet, even in these cases, their presence is not interpreted as evidence of local agrarian production, but as part of the consumption and redistribution mechanisms of the power centre from its hinterland (*Bednár 2007, 210; Pieta et al. 2007, 15, 39–40; Borzová 2020, 56*).

In the case of Mikulčice, on the contrary, the absence of pits is used to confirm the same conclusion, i.e. the non-agrarian nature of the centre (*Hladík 2014, 173; Macháček 2001; 2026, 112*), which leads to a double interpretational standard, where the presence and absence of the same phenomenon supports an identical hypothesis. From a methodological point of view, this is a problem because the model formulated in this way is not falsifiable in the spirit of the Popperian principle.

Ecological anthropology emphasises that agricultural production in pre-industrial conditions represents primarily a risk management strategy, not yield maximisation. Climatic instability, crop fluctuations, soil limits, and biological losses mean that production is oriented towards securing the household in ‘bad years’, rather than towards systematically creating long-term surpluses (*Halstead – O’Shea 1989, 2–3*). From this perspective, potential surplus is unstable, time-limited, and often unpredictable.

At the same time, short-term surplus product is rapidly absorbed in many societies through social practices such as feasting, reciprocity, or exchange. These forms of consumption do not lead to permanent accumulation, but serve to strengthen social ties and reduce future risk. The surplus product thus becomes a social instrument rather than an economic basis for hierarchisation (*Halstead – O’Shea 1989, 4–5*).

This approach also has important implications for the interpretation of archaeological evidence of storage. Storing grain is technologically demanding and risky, and households have a strong incentive to maintain control over their own production. The presence of grain pits cannot, therefore, be automatically interpreted as evidence of central accumulation of surplus product, and their absence cannot be understood as proof of the absence of production (*Halstead – O’Shea 1989, 5–6*).

An alternative explanation for the absence of grain pits at the Mikulčice-Valy stronghold is offered by the concept of dynamic consumption, in which the harvest was distributed and consumed continuously, without the need to build extensive long-term stores. The high concentration of residents in the centre, short distances between production locations and the settlement, and the possibility of rapid redistribution reduced the need to build large storage spaces. Such a model is well documented ethnographically and historically (*Halstead – O’Shea 1989, 5–6*) and best corresponds to the ecological and archaeological data from Mikulčice-Valy.

Production evidence

In the last decade, thanks to archaeological (Hladík *et al.* 2022), archaeobotanical (Látková 2017; Látková – Hajnalová 2019; Látková *et al.* *in press*), and archaeozoological (Kovačiková *et al.* 2020) analyses, new evidence has emerged that significantly challenges the traditional model of the complete food dependence of centres on the hinterland. The relationship between the central location of Mikulčice-Valy and its economic hinterland can be characterised as closely functionally interconnected, based on the cooperation of individual components of the settlement structure. The economy of the Mikulčice agglomeration is interpreted as a complex, functionally differentiated, and regionally interconnected system (Hladík *et al.* 2022; Látková *et al.* *in press*). The central fortified settlement served as a supra-community power and administrative hub, while Great Moravian society in the 9th century was socially stratified and individual strata participated in various tasks in the subsistence system—from primary production to resource management. The centre was not merely a recipient of products from the surrounding area but was actively involved in the organisation and control of economic processes (Hladík *et al.* 2022, 137).

Mikulčice can thus be understood as a centre that concentrated power and resources but was also part of an effectively functioning economic and social network based on reciprocal exchange between variously specialised segments of the population. Settlements on the periphery of the centre, such as Mikulčice-Trapfkov, functioned as distribution and processing points for food and craft products and at the same time as nodes through which power and administration moved (Hladík *et al.* 2022, 113). However, not all settlements fulfilled the same role; some specialised in crop production, others raised livestock, processed raw materials, or stored products, which points to horizontal differentiation and ecological adaptation framed by social relations and institutional control (Hladík *et al.* 2022, 125–128).

Archaeozoological evidence has special informative value (Kovačiková *et al.* 2020). Analyses of the settlement components of Mikulčice clearly demonstrate that active pig husbandry, including reproduction, took place directly in the acropolis and the outer bailey. The osteological material clearly demonstrates the presence of all age categories—from young to adult females older than three years, which rules out an interpretation as an exclusively consumer site (Kovačiková *et al.* 2020, 11–13). The authors state that ‘*pork consumption demand was partially met by pigs raised at the acropolis as well as at the bailey*’ (Kovačiková *et al.* 2020, 13), thus confirming that part of the food requirements, especially meat, was provided directly in the centre. This type of farming required not only space, but also planning, organisation, and knowledge of breeding processes, from securing feed to controlling the reproductive cycle.

Analogous conclusions also allow archaeozoological, archaeobotanical, and isotopic data from Břeclav-Pohansko. Cereal pollen grain finds were made to varying degrees in almost all samples from Pohansko, and in one case, their occurrence was recorded in larger quantities, specifically at the Great Moravian well in the northeast bailey (Doláková *et al.* 2020, 544). The fact that pollen grains were found in clusters in the well is key evidence of the local manner of handling agricultural products. This phenomenon indicates a low degree of natural transport, meaning that the pollen was not brought to the site by wind from afar, but remained attached directly to the grain stalks after harvest. The presence of such

clusters at archaeological sites clearly demonstrates the handling of cereals in the initial stages of their processing; for example, during threshing, pollen grains may be gradually released and deposited in archaeological features (Doláková *et al.* 2020, 544). This data confirms that the residents of Pohansko processed their own crops directly within the area of the stronghold. According to Doláková *et al.* (2020, 530), the inhabitants of the centre ‘to a certain extent participated in the provision and processing of agricultural products themselves’, including the cultivation of cereals and the raising of cattle. Isotopic analyses have shown that the cattle were fed on local vegetation, thus suggesting the animals were raised locally. Therefore, similar to the case of Mikulčice-Valy, the economy of the Great Moravian Břeclav-Pohansko stronghold was based on a combination of local production and specialised supply from the hinterland (Doláková *et al.* 2020, 552).

Archaeological analysis of agricultural tools from Břeclav-Pohansko (Dresler – Beran 2019) supports this picture. Agricultural tools represent a significant part of the metal inventory (Dresler – Beran 2019, 237). While opinions have appeared in the past questioning the centre’s own agricultural production due to the unsuitable inundation terrain of the Thaya River and it was assumed that supplies were provided in the form of mandatory contributions from surrounding settlements (Dresler – Beran 2019, 239–240), an analysis of the collection of finds from 1959 to 2015 does not confirm this model. Tools such as ploughshares and coulter exhibiting traces of intensive wear and subsequent blacksmith repairs are clear evidence of their actual use directly by the inhabitants of the centre (Dresler – Beran 2019, 294). Metallographic analyses reveal a high technological level of local production (Dresler – Beran 2019, 291). These findings indicate that the economy was not based solely on the passive receipt of commodities, but on advanced artisanal production and active land management, which ensured the viability of this important centre (Dresler – Beran 2019, 294).

Similar indicators of local agrarian production can be observed in other early medieval fortified settlements in Central Europe. The hillfort of Gars–Thunau in Lower Austria provides an interesting comparative case study in this regard (Herold 2014). Archaeobotanical results point to the close connection of the hillfort with local agricultural production in its immediate hinterland. The hillfort is situated on an elevated position, which, in terms of the availability of agricultural land, does not represent ideal conditions for larger-scale agricultural production. Nevertheless, archaeobotanical data indicate that the grain was brought to the hillfort unthreshed and that the subsequent stages of its processing, especially threshing and cleaning, took place directly in the hillfort or in its immediate vicinity. This method of crop handling assumes the existence of fields in the relative vicinity (Popovtschak – Zwiauer 2003, 241). The spectrum of weeds accompanying field crops shows that the fields were probably located both on the plateau west of the hillfort and in lower positions on the eastern side, with the archaeobotanical material representing weeds typical for both ecologically distinct areas (Popovtschak – Zwiauer 2003, 240–243; Herold 2014, 237). At the same time, species typical for forest clearing vegetation were identified, indicating that the inhabitants actively deforested the surrounding landscape to create agricultural land (Popovtschak – Zwiauer 2003, 240–243; Herold 2014, 237–238).

Archaeobotanical finds also document a relatively diverse spectrum of cultivated plants. Grapevines, plum trees, and cucumbers suggest the existence of certain garden areas next to the fields, although their exact location within the hillfort area or its immediate surroundings is unknown (Popovtschak – Zwiauer 2003; Herold 2014, 237–238).

Furthermore, imprints of plants in daub indicate that the processing of the harvested crop took place directly on the site. Likewise significant is the discovery of an iron hoard containing tools interpreted as those used in tilling the soil, which indicates that at least some of the inhabitants of the stronghold were directly involved in agricultural production (*Popovtschak – Zwiauer 2003, 231, 240–243; Herold 2014, 237–238*). Archaeozoological data create a similar image of the economic functioning of Gars–Thunau. Of the analysed assemblage of bones, approximately 88% of the finds come from domesticated animals, mainly cattle, pigs, and sheep. Analysis of age representation and anatomical parts suggests that these animals were raised directly on the site or in its immediate surroundings and served the needs of the local population, with no evidence of any extensive import or export of animal products (*Kanelutti 1990; Herold 2014, 238*).

These data indicate that even a relatively small hillfort lacking optimal conditions for agriculture from a geomorphological perspective had its own agrarian hinterland in the immediate vicinity and inhabitants likely participated in growing crops (*Herold 2014, 237*). In this context, it seems unrealistic to assume that even other centres situated in environments with significantly more favourable conditions for agriculture were completely dependent on external supplies. The economy of the stronghold was thus based not only on local crop production, but also on the local raising of livestock (*Herold 2014, 237–238*).

As the presented evidence shows, intensive and well-conducted archaeobotanical and archaeozoological research is of fundamental importance for the critical reassessment of long-accepted interpretive models. Systematic analysis of plant and animal remains allows us to confront traditional ideas about the functioning of early medieval centres with direct empirical data, in many cases leading to a revision of established interpretative ideas. Results from sites such as Mikulčice-Valy, Břeclav-Pohansko, and Gars–Thunau show that where such research has been carried out with sufficient intensity, evidence of local agrarian production and the raising of livestock repeatedly appears directly in their areas or immediate vicinity. These findings suggest that the economic reality of early medieval centres was more complex than the model of purely consumer sites that relied on supplies from the hinterland.

Conclusion

The results of interdisciplinary research (also presented in this text) apply exclusively to the Mikulčice-Valy and its immediate surroundings. Although some of the observed phenomena, such as differences in the processing stages of crops between the central agglomeration and the hinterland, indications of agricultural microspaces directly in the settlement structure, or the presence of selected crops in central areas, may find parallels at other Great Moravian sites, it is not appropriate to mechanically transfer these results to the entire territory of Great Moravia. Each power and settlement centre must be assessed regarding its specific natural background, settlement dynamics, archaeological preservation, and available source material.

At the same time, it should be emphasised that there is currently no other Great Moravian site in Central Europe that would have such an extensive and well-evaluated archaeobotanical data set as Mikulčice-Valy. It is the scope and systematicity of the research that has been performed, as well as its temporal and spatial depth, that makes this site a unique case.

However, this uniqueness also presents a methodological challenge: we do not have comparable data from other settlements of the same importance, and the model archaeobotanically documented for Mikulčice cannot be automatically applied to other contemporary centres. Any attempt at generalisation would ignore the specific ecological and settlement configuration of this site, as well as the qualitatively exceptional state of preservation and documentation.

The aim of the archaeobotanical analyses was not to formulate a universal model valid for the entire Great Moravian territory, but to open up space for alternative interpretations based on a combination of environmental, archaeobotanical and settlement data. The archaeology of economic relations in the Early Middle Ages requires not only an interdisciplinary perspective, but also consistent methodological reflection, critical evaluation of sources, and explicit formulation of interpretative assumptions.

The difference between the model of subsistence organisation that I present in my studies and Macháček's interpretation does not lie in the fundamental question of the existence of an economic hinterland of Great Moravian centres, but in the way in which this relationship is understood, modelled, and empirically supported. The traditional interpretation (*Dresler – Macháček 2008; Macháček 2013*) is based on an archaeological framework according to which the centres functioned as dominant consumer nodes, supplied by the surrounding area through a redistribution network.

In contrast, the archaeobotanical data indicate the possibility of a more complex organisation of agricultural production, which did not have to be exclusively tied to settlements in the broader hinterland, but could also include selected locations directly within the central agglomeration. This is not about denying the existence of the hinterland or returning to the idea of self-sufficient centres, but about refining and opening up the interpretative framework based on data that show a higher degree of diversity of subsistence strategies than the classical redistribution model assumes.

While the traditional interpretation is built on structural certainty, which is supported by synthetic works and generalised archaeological schemes, my approach emphasises an analytical, environmentally-anchored perspective that is not universal but instead based on specific evaluated material. In this sense, it represents a contribution to the discussion that can improve our understanding of the complexity of the economic functioning of early medieval centres.

The complete food dependence of Great Moravian centres on supplies from the hinterland appears to be a model that would have been extremely vulnerable in the real conditions of the early medieval environment. Given the uncertainty of transportation, the impermanency of production at hinterland sites, and frequent fluctuations in political or climatic stability, such a unilateral strategy would threaten the daily functioning of the centre. It seems more realistic to imagine that centres like Mikulčice-Valy took a varied approach to securing food and diversifying resources to buffer their economic resilience. Strategically, it is logical that the centres could not remain completely passive and dependent strictly on supplies from the hinterland. To a certain extent, self-production represented an adaptive solution. Raising animals and growing crops directly on site, as evidenced by research from Mikulčice, allowed continuous access to food and independence from supplies from the hinterland. This type of strategy is not a sign of isolated, independent management, but represents a well-planned model of redundancy—the deliberate use of multiple parallel resources that together increased the stability and operational security of the seat of power.

At the same time, however, it should be noted that the centres' hinterlands themselves were probably not a homogeneous and uniformly functioning unit. Each site could have had a specific relationship to the centre, derived from its size, origin, function, ecological situation, or the social status of its inhabitants. Some of these settlements may have provided grain, others raised livestock, still others produced specialised crafts or performed service functions. Likewise, the degree of their involvement in the supply system could vary: while some could fulfil the role of permanent suppliers, others could pay contributions irregularly or only in certain seasons.

This variability once again confirms that the stability of the centre required diversified means for securing subsistence, in which its own production was supplemented by a diverse and flexibly organised supply system. Archaeobotanical and archaeozoological data from Mikulčice-Valy, supported by comparable evidence from surrounding lower-level sites and partly also from other contemporary centres, consistently support the interpretation of the site not only as a political, ceremonial, and craft centre, but also as an agricultural and economic hub with locally organised food production adapted to specific environmental conditions. From the point of view of Popper's critical rationalism (Popper 1997, 10–11, 264), this is a relevant falsification, i.e. a situation where the hypothesis about the exclusively consumerist character of Great Moravian centres should either be abandoned or fundamentally reformulated.

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DISCUSSION – DISKUZE

The limits of models in the debate on Great Moravian centres: A view from the east

Limity modelů v debatě o velkomoravských centrech:
Pohled z východu

Zbigniew Robak

The paper examines the limits of existing models used to interpret the functioning of Great Moravian centres through the case study of Bojná-Valy in Western Slovakia. While recent debate has been structured around Jiří Macháček's triad of models (agrarian hinterland, autarky, and local market) critically revised by Michal Hlavica, this study argues that such frameworks are insufficient when applied to non-standard sites. Bojná-Valy, lacking a clear settlement hinterland and displaying strong military and logistical characteristics, cannot be fully explained by any of these models. Instead, it is interpreted as a specialised control and provisioning node, combining institutional redistribution, strategic resource management, and limited, segmentary exchange. The case highlights the coexistence of multiple economic mechanisms and underscores the need to distinguish between market exchange as a systemic integrative force and as a secondary by-product of logistics and control. More broadly, the paper suggests that the Great Moravian system was hierarchical, networked, and functionally differentiated, requiring more flexible interpretative models beyond rigid dichotomies.

Early Middle Ages – Great Moravia – economy – central places – market

Článek se zabývá limity stávajících modelů používaných k interpretaci fungování velkomoravských center na příkladu lokality Bojná-Valy na západním Slovensku. Zatímco dosavadní diskuse se strukturovala kolem trojice modelů Jiřího Macháčka (agrární zázemí, autarkie a lokální trh), kriticky revidovaných Michalem Hlavicí, tato studie ukazuje, že při aplikaci na nestandardní lokality jsou takové interpretační rámce nedostatečné. Na Bojnou-Valy, postrádající jednoznačně identifikovatelné sídelní zázemí a vykazující výrazné vojenské a logistické charakteristiky, nelze plně aplikovat žádný z těchto modelů. Lokalita je proto interpretována jako specializovaný uzel kontroly a zásobování, kombinující institucionální redistribuci, strategické řízení zdrojů a omezenou segmentární směnu. Tento případ poukazuje na souběžnou existenci různých ekonomických mechanismů a zdůrazňuje potřebu rozlišovat mezi tržní směnou jako systémovou integrační silou a tržní směnou jako sekundárním produktem logistiky a kontroly. V obecnější rovině příspěvek naznačuje, že velkomoravský systém byl hierarchický, síťově propojený a funkčně diferencovaný, a vyžaduje proto flexibilnější interpretační modely překračující rigidní dichotomie.

raný středověk – Velká Morava – ekonomika – centrální místa – trh

Introduction

Research on Great Moravian centres has traditionally employed hierarchical centre–hinterland interpretations. The current debate, however, is shifting from what these centres were to how they worked, how they were sustained, and how they interacted with their settlement hinterlands (Dresler 2016; Hladík 2020; Hladík et al. 2022; Hlavica 2023). At the heart of this debate is the question of whether centre–hinterland relations were struc-

tured primarily through redistribution and the politically coordinated or coercive mobilisation of resources, or whether market-oriented exchange played a more significant role.

A major recent contribution is that of *Macháček (2026b)*, who proposed three models of Great Moravian central agglomerations: (I) a central place, understood functionally as a space structuring particular spatial, political, or economic relationships, with an agrarian hinterland, (II) an autarkic model, and (III) a local agglomeration market. However, *Hlavica (2026)* has argued that this framework is overly rigid, since economic mechanisms were likely regionally variable, diachronically dynamic, and functionally mixed. Macháček presents his triad as a set of largely mutually exclusive options. This raises a definitional issue: he understands agglomerations as centres performing ‘all major central functions’ (political, administrative, economic, military, cult, etc.). Such a definition privileges the centre–hinterland model and risks overlooking sites that exhibit only partial or non-standard forms of centrality.

This article starts from the premise that the limits of both approaches are most visible not in the best-known centres of Southern Moravia, but in borderline cases that do not fit neatly into existing models. One such example is the hillfort complex at Bojná in Western Slovakia, particularly Bojná-Valy hillfort. Its location, settlement structure, chronology, and material record point to a centre of high political and economic importance (central place), yet one operating according to a logic different from that of Great Moravian central agglomerations with a defined agrarian hinterland. Bojná is used here not as a representative example of Great Moravian centres, but as a boundary case testing the transferability and limits of models derived primarily from the Moravian core.

This article aims to determine what type of hub Bojná-Valy represents and to assess how this case challenges existing models of Great Moravian central places. Was it a centre of power, a garrison, a distribution node, or a distinct category of site? I situate Bojná within the Macháček–Hlavica debate and identify the limits of both approaches when confronted with evidence from the eastern periphery of Great Moravia. I also propose an interpretative framework that better captures the role of Bojná within the broader centre–hinterland system.

Models, assumptions, and tensions

Within the framework of the Central European model of early states (e.g. *Macháček 2008; Štefan 2014; Kalhous 2022*), historiography has generally explained the functioning of the Great Moravian economy in terms of top-down exploitation of rural communities by hillfort elites. This system is thought to have operated through enforced tribute, occasional punitive expeditions, and possibly forms of service organisation, which may have subordinated otherwise free populations. In the interpretation of *Macháček (2026b)*, this ‘traditional model’ remains the most empirically grounded and has not been convincingly falsified. Accordingly, Great Moravian central agglomerations are seen as nutritionally dependent on their rural hinterlands, with goods transferred through redistribution, obligations, and elite control. This leaves little room for a market economy. Yet the absence of clear evidence for service organisation raises the question of how such transfers were secured – whether through coercion alone.

Macháček revisits this issue by restoring agency to ‘common people’, building on ideas already proposed by Štefan (2011). He suggests that centre–hinterland relations need not be interpreted solely in terms of coercion, but may also reflect voluntary cooperation, including collective defence and reciprocal exchange. In this view, central agglomerations developed through negotiation between farmers and specialised groups (craftsmen, merchants, warriors), with some degree of population mobility between village and centre. *Suburbium* zones may have functioned as areas of fluid interaction, supported by the distribution of military finds. Participation in warfare could thus have been conditional rather than a sign of permanent subordination. While compelling, this model does not resolve whether transfers were coercive, negotiated, or market-based. Progress requires clearer definitions and testable archaeological indicators, such as storage concentration, standardisation tools, provenance patterns, and settlement–provisioning relationships, as well as a more precise understanding of what could actually be negotiated.

Macháček presents three models: (1) agrarian hinterland, (2) autarky, and (3) local market as largely exclusive alternatives, ultimately rejecting the market model in favour of coercion or negotiated transfer. Hlavica (2026) challenges this binary framing, arguing that early medieval systems likely combined multiple mechanisms. He proposes a diachronic and regionally differentiated approach, in which production, redistribution, and exchange coexist and vary over time and space, using the elements of the Central Place Theory (CPT) and network approaches (Hohenberg – Lees 1985). The classical normative model of central places was formulated by Christaller (1966) and further developed by Evans (1980). In this approach, a central place and its surrounding area form a functional whole regulated by a dominant core, providing political, administrative, defensive, economic, cultural, and religious functions for the surrounding population. Although CPT has been criticised as overly schematic and insufficiently sensitive to geographical diversity (Bird 1973), it broadly corresponds to early medieval realities. Its main limitation lies in detailed application, which has led to the development of alternative, non-exclusive models (Siemianowska 2014). In network approaches, regions characterised by a generally higher level of socio-economic development (cores) generate impulses of demand directed towards the peripheries, understood as marginal zones subject to interaction with the core area. A distinctive position between them may be occupied by a centre located at the outer edge or forefield of one of these zones, where it performs the function of a gateway.

The debate can be understood in Polanyian terms: whether the economy was primarily ‘embedded’ in social and political institutions or whether autonomous market-like exchange also played a role. Macháček seeks a dominant systemic mechanism, emphasising redistribution and dependence on the hinterland. Hlavica, by contrast, focuses on the empirical mechanics of circulation and treats models as overlapping layers rather than alternatives. This flexibility, however, risks weakening falsifiability, as diverse patterns can be interpreted within a single framework. The disagreement also reflects different epistemological positions. Macháček stresses the ambiguity of archaeological indicators, while Hlavica relies on distribution patterns of everyday goods to reconstruct a ‘system of markets’. For Macháček, the functioning of centres is best explained through politically coordinated mobilisation of resources within a hierarchical system, with limited commercialisation. The market, in a strong sense, is not a necessary condition for system integration. Hlavica responds that this framing excludes the possibility that market mechanisms could coexist with redistribution. He argues that elite control over strategic goods does not preclude the

exchange of everyday items and proposes a more complex model combining ‘solar’ local markets with ‘dendritic’ controlled distribution networks. More broadly, such a bottom-up perspective also allows for economic responses initiated by rural producers themselves when centres created concentrated and predictable demand.

Underlying this dispute is a difference in views of political organisation: Macháček emphasises hierarchy and control, while Hlavica highlights decentralisation, polycentricity, and cooptation. The key issue is not simply the presence of markets, but how they are defined – either narrowly as formal institutions or broadly as one mode of economic integration among others. From the perspective of rural producers, these distinctions may have been less significant than their dependence on nearby centres.

Both scholars agree on the importance of pottery distribution for studying internal exchange. However, its interpretative value remains limited. At most, it indicates consumer circles (Štefan 2014, 161–162) rather than market freedom. Given the low cost and wide availability of pottery, long-distance distribution would have required specific conditions.

Both authors base their models on well-studied proto-urban centres in southern Moravia. These sites represent exceptional, almost ideal examples of central agglomerations. Yet this very representativeness may bias interpretation. Focusing on such cases risks overlooking the diversity of the wider system, including less typical centres and peripheral regions. It is therefore plausible that the core areas of Great Moravia functioned differently from its margins. A general model must take this variation into account.

Bojná-Valy as a borderline case

The hillfort of Bojná-Valy in Western Slovakia, together with its wider surroundings, has long been interpreted as a site of considerable political, economic, and military importance. From the beginning of research, its chronology has been central to discussions of its function. Initially, Bojná was regarded as a centre of power associated with pre-Great Moravian elites, particularly the presumed Principality of Nitra under Pribina. Subsequent excavations and new chronological data, however, showed that the individual components of the complex were not strictly contemporaneous, and that the Valy hillfort itself is considerably later, functioning mainly towards the end of the 9th century (Henning – Ruttkay 2011). Bojná-Valy and its surroundings were therefore later interpreted as a settlement–fortification agglomeration operating broadly between the 8th and 9th/10th centuries, focused on metallurgy, craft production, and trade (Pieta 2017).

This interpretation, however, leaves several issues unresolved: the absence of an immediate settlement hinterland; the site’s difficult location in a mountainous environment; the logistical problems of provisioning; the limited agricultural potential of the surrounding area; the predominance of weapons, equestrian equipment, and metallurgical tools; the near absence of personal ornaments; the lack of dense built-up occupation; and the absence of a substantial cemetery contemporary with the main hillfort. On the basis of these observations, derived from nearly two decades of fieldwork, I proposed interpreting Bojná-Valy as a form of spatial organisation distinct from a typical settlement agglomeration and displaying features comparable to a garrison-type arrangement (Robak 2021, 62), later conceptualised as a *crew fort*.

If compared with Macháček's definition of Great Moravian agglomerations, Bojná fulfils it only partially. Recent dendrochronological and radiocarbon studies suggest that the wider Bojná complex functioned continuously from at least the mid-7th to the mid-10th century (Robak – Pieta 2026), but its individual hillforts were not strictly contemporaneous, even if their chronologies may have overlapped. Settlement activity at Bojná-Valy can be dated from approximately the mid-9th century to the first half of the 10th century (after 908 AD). Its main phase falls in the 890s, when a substantial fortress was constructed on the Valy hill. Although traces of an earlier rampart are present, it remains unclear whether they belong to an earlier settlement phase or merely to a construction phase. Chronologically, Bojná-Valy corresponds closely to Břeclav-Pohansko (Dresler *et al.* 2010; Macháček 2026b, fig. 5), Mikulčice (Poláček – Hladík 2014; Rybníček *et al.* 2014; Barta *et al.* 2014; Hladík *et al.* 2022, 111–112, 133, 165–169), and the Staré Město complex (Galuška *et al.* 2018), with the caveat that it may have remained in use somewhat longer.

Spatially, however, Bojná-Valy differs markedly from these centres. The hillfort covers approximately 12 ha and occupies the flat summit of a narrow ridge at around 420 m above sea level. Apart from the inhabited and fortified western *suburbium* and faint traces of early medieval activity in the forefield, the site lacks a clearly developed settlement hinterland. No open settlements have been identified on the surrounding elevations, which were poorly suited to sustained colonisation and agriculture because of steep slopes and limited soil fertility. The nearest traces of open settlement occur approximately 5 km away, while the agricultural zone that could theoretically have supported the stronghold lay further away, on the more fertile terrace of the Nitra River, roughly 7–10 km from the site. This makes food self-sufficiency unlikely and indicates the absence of an 'inner settlement ring' (*Umland*), unless such a zone is reduced to the western *suburbium* itself. The lack of a cemetery within or near the hillfort strengthens the impression that there was no stable, immediate settlement base; the nearest Great Moravian period necropolis is known from the area of Závada, several kilometres away (Bialeková 1982; Robak 2018).

The location of Bojná-Valy therefore complicates its interpretation as a 'classical' settlement centre. Great Moravian agglomerations are usually situated in accessible wide river valleys, where open settlement could develop, and a dense *Umland* could emerge. Pobeďim and Nitra, surrounded by settlements and cemeteries, better fit this pattern. Bojná, by contrast, may have functioned as a prominent control point and symbolic focal site within the middle Nitra valley, even if it was not a central place in the agglomerative or geometrical sense. The longer tradition of using this landscape as a focal area for communities should also be taken into account (Robak *in press*; Robak – Pieta 2026).

The internal spatial organisation of Bojná-Valy is clearly structured but unusual (Robak 2021, 48–50). Archaeological excavations reveal distinct zones: residential areas with nearly identical square semi-sunken dwellings arranged along the axis of the hillfort; storage pits; a production zone with slag concentrations and pits containing fragments of iron objects; and an area associated with food preparation, including roasting plates and a furnace. Yet there is no evidence of sacral or elite residential buildings, internal divisions such as palisades, or organisation into larger household units. The site appears to have functioned efficiently and intensively, but not as a typical settlement. It suggests periodic, perhaps prolonged, occupation by people who arrived and departed without forming a stable community reflected in a funerary landscape.

This impression is reinforced by the material assemblage. The finds are dominated by weapons and equestrian equipment, while women and children are only weakly represented, mainly through a small number of ornaments. It is therefore difficult to avoid the hypothesis that Valy served primarily as a place for stationing and servicing a military retinue, whose members may have rotated. The hillfort also appears to have been abandoned suddenly but not destroyed internally: vessels remained on ovens, sets of metal objects were left inside dwellings, and there is no clear destruction layer or evidence of burnt houses. The massive fortifications, constructed with advanced and costly techniques, including dry-stone walling and auxiliary defensive lines, further support a predominantly military interpretation.

Material culture also suggests strong dependence on external supply. Grain may have arrived already threshed or partly processed, and the absence of chaff in soil samples is consistent with logistical provisioning (Mihalyiová 2017). The large number of agricultural tools might seem to challenge this view, but many derive from iron hoards or unstratified metal-detector finds, whose status as disturbed deposits remains unresolved (Boržová *et al.* 2020, 7, 20, 26, 32, 53–56). They cannot therefore be treated as direct evidence for permanent farmers or routine agricultural work within the stronghold (cf. Hlavica 2026, 134). Many tools are also damaged. Given the absence of household organisation and the distance to arable land, the scenario of a resident farming community is weak. Unlike Břeclav-Pohansko, where the autarkic model proposed by Dresler (2016) could at least rely on suitable land immediately beyond the fortifications, Bojná offered no such conditions.

Nor does Bojná provide clear evidence for highly specialised craft production aimed at goods such as ornaments. Some archaeologically visible craft activity, especially iron-working, may have been carried out *ad hoc* by the garrison itself to meet its own needs (Moździoch 1991, 29). Equally significant is the absence of local ceramic production. There is no identifiable ‘Bojná-type ceramic circle’. The ceramic assemblage does not show the dominance of a single production sphere; pottery of the expected Nitra-Lupka type is no more numerous than other groups, including forms with parallels in Moravia and Lower Austria (Vanglová 2017; 2020). Thus, the idea of a clearly defined consumer circle does not work well for Bojná-Valy (cf. Štefan 2014, 162). The expected ceramic zone of Pobedim has likewise not been identified. Although recent dating suggests that Pobedim was destroyed not at the beginning but rather towards the end of the 9th century (Henning – Ruttkay 2011, 268; Robak *et al.* *in press*), its chronology remains uncertain. The possibility that Pobedim was no longer functioning as a centre when Valy was active is also being considered (Robak 2021, 62–63).

Interpreting Bojná-Valy as a site with a primarily military and logistical profile does not imply the absence of economic processes. On the contrary, nodes with a garrison function often generate a stable (or periodically renewed) demand for goods and services, thereby creating conditions conducive to the emergence of mechanisms coordinating circulation, from the standardisation of transactions to the differentiation of service spaces. In the case of Bojná, such a mechanism appears particularly plausible. On the one hand, its settlement pattern and topographical setting make it difficult to interpret within the framework of a classical agglomeration centre; on the other, the archaeological record provides indications of economic activities extending beyond the immediate provisioning of the stronghold (e.g. glass from imported vessels, lead in ingot form), while offering no support for a model of autarky. In this context, it is also worth noting an aspect that brings Bojná closer

to themes present in the work of Jiří Macháček. The impression of a rotating population and the absence of a stable ‘settlement biography’ (no developed agglomeration-type architecture, no cemetery, and a limited presence of women and children) recall Macháček’s observations on mobility and interchangeability among populations inhabiting peripheral components of agglomerations (suburban zones), which may be interpreted as areas of movement between centres and rural settlements. In such a perspective, Bojná is clearly not a ‘proto-urban’ centre, yet it may have fulfilled an analogous function on a smaller scale: as a place where people and their competencies (military, craft, and commercial) appeared and disappeared in the rhythm of service rather than that of everyday life. Notably, potters themselves do not seem to have been among the most necessary specialists at this site.

What general model? The question of political organisation

Great Moravia was characterised by a complex and distinctly transitional structure, situated between earlier, tribal forms of organisation and the more stable model of the early state typical of the Central European developmental trajectory (*Třeštík 1997*, 293–294; *Štefan 2014*, 144, 160–161). This was not, however, a simple ‘overlay’ of state institutions upon an existing tribal order, but rather the gradual emergence of a kind of ‘beta version’ of statehood – unevenly institutionalised, and understood as a durable securing of diversified income streams for a particular group. This process unfolded in stages and through visible phases of intensification, especially in the construction and modernisation of hill-forts and defensive infrastructure (cf. *Henning – Ruttkay 2011*, who nevertheless interpret the construction boom of the 890s primarily as a response to military threats; and *Kalhous 2018*, 20).

From this perspective, Bojná may be seen as a particularly illustrative fragment of this transitionality. The site of Bojná-Valy, as described above (and broadly in *Robak 2021*; *Robak – Pieta 2026*), can be interpreted as evidence for an attempt, at the end of the 9th century, to construct a durable administrative and military order within Great Moravia, which was meant to rely on a planned network of control points, mobilisation centres, and storage–logistical nodes, managed from a regional centre – in this case most likely Nitra, where a bishopric was also established in 880. In this respect, it bears a strong resemblance to early Piast castellany centres and some of their basic functions (*Moździoch 1991*, 27–31; *Grążawski 2014*, 63–65; *Przybył 2018*, 73). It is noteworthy that the hillfort at Majcichov, founded in the same years (892–893) as Bojná-Valy, lies at precisely the same distance (33.2 km) from Nitra-Hrad (*Fig. 1*). Whether this emerging system ultimately failed to stabilise is a separate and debatable issue, especially given that the name *Bana* was later adopted and maintained until the 13th century by a Hungarian county located in the same general area as Bojná. The hypothesis of central planning is further reinforced by the scale of investment. The massive fortifications, constructed using advanced technical solutions characteristic of late Great Moravian defensive architecture (including dry-stone walling), are difficult to interpret as the product of a bottom-up initiative by a local leader lacking substantial organisational backing and the capacity to mobilise significant resources (cf. *Kalhous 2018*).

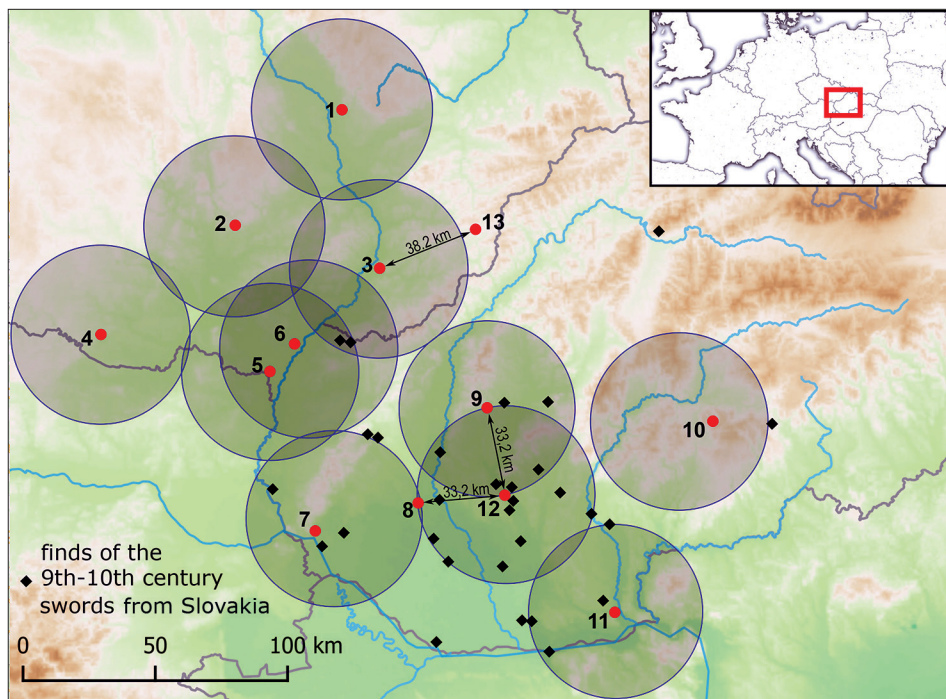


Fig. 1. Operational range (~33 km) of Great Moravian centres in the late 9th century and other sites mentioned in the text. 1 – Olomouc-Hrad; 2 – Brno-Líšeň; 3 – Staré Město; 4 – Znojmo; 5 – Břeclav-Pohansko; 6 – Mikulčice; 7 – Bratislava-Hrad; 8 – Majcichov; 9 – Bojná-Valy; 10 – Zvolen-Moťová; 11 – Biňa; 12 – Nitra-Hrad; 13 – Klášťov; black diamonds – finds of the 9th–10th century swords (after Jócsik 2024; Jócsik – Móc 2024).

At the same time, it seems likely that the Moravian core of the system functioned differently from its peripheries. In areas where agglomerations and centres (together with their resident elites) were concentrated within a relatively small space and reached the highest levels of complexity, the mechanisms of integration may have been more competitive and balanced (cf. Hladík 2020, 275, 312). It is not inconceivable that various strategies were tested in order to maintain equilibrium – among them perhaps autarkic *villae* inspired by Carolingian models. It is worth recalling that the Carolingian dynasty constituted an important point of reference for Moravian elites, providing both cultural stimulus and organisational templates.

By contrast, in the peripheral zones, more straightforward and effective solutions may have prevailed, in which recognised central authority was represented by a single agent linked to a local centre. This perspective may help to explain the emergence of small, isolated ‘manorial’ sites at Nitrianska Blatnica and Ducové – forms of spatial organisation that find no direct parallels in Moravia itself.

At this point, Bojná also becomes a useful case through which to pose a more fundamental, ‘constitutional’ question – one that lies at the heart of the Macháček–Hlavica debate. Could such a large and technologically advanced stronghold have been established and maintained without strong central coordination? If one adopts a more polycentric and

‘coopetitive’ vision of the political order (closer to that of Michal Hlavica), it becomes necessary to explain why other centres would have tolerated the emergence of such a control point, or how they would have contributed to its provisioning and staffing without recourse to coercion, obligations, or overarching coordination.

This question does not constitute an argument against the market as such, but rather against the proposition that a local market, left to itself, would have been capable of sustaining a node of such scale and power in so inconvenient a location, particularly in the absence of strong institutions able to enforce or at least stabilise supply flows, evidently without undermining the viability of local agricultural producers (through mechanisms such as dues, contracts, obligations, or control over routes). Although the multi-layered and complex models proposed by *Hlavica (2023)* are undoubtedly valuable in that they allow for the comprehensive testing of diverse cases, one may gain the impression that they leave too much room for interpretations invoking self-regulating market mechanisms. The same archaeological data can often be explained equally well through politically coordinated mechanisms (cf. *Štefan 2014*, 145–146, note 6). In this sense, the flexibility of the model may function as a kind of shield against falsification: almost any distribution pattern can be described as ‘market-based’, provided that one allows for a mixture of mechanisms and shifts the explanatory weight onto loosely defined ‘processes’ operating within a network.

If Bojná were to be interpreted as (I) a ‘regional market’, one would expect its influence to be visible within the micro-region as a service zone: goods arriving at the stronghold should subsequently appear in dispersed form in surrounding settlements, while patterns of provenance would display a zonal, stable, and repeatable character. At present, such a pattern can be identified primarily in relation to military equipment (*Robak 2018; 2023*), whereas no comparably unambiguous evidence is available for other categories of goods. If, on the other hand, Bojná functioned primarily as (II) a ‘dendritic node’, one would expect rather a corridor-like pattern: supplies arriving from multiple sources into the centre, without a clear signal of outward redistribution, and with a concentration of coordinating instruments within storage and logistical contexts. At the current stage of research, the available data lend stronger support to this second hypothesis.

The logistical character of provisioning does not exhaust the range of possible interpretations. First, a military node generates sustained demand not only for food, but also for services and the production of specific categories of goods. The archaeological material recovered from Bojná-Valy provides strong evidence in this respect. Within the *suburbium*, features and concentrations of finds indicative of ironworking have been recorded (including numerous fragments of slag, as well as fragmentary and bent axe-shaped ingots, large quantities of scrap metal, and blacksmithing tools). This would correspond to a zone of workshop activity servicing the needs of the stronghold. In comparative terms, it is important to note that such a functional zone may resemble the voluntary ‘camp-following’ service areas (*vicus*-like) known from other contexts. By definition, they do not necessarily constitute a regional market, but rather spaces in which service and production activities converge with demand generated by a military institution and, more generally, with opportunities for exchange and private profit (*Hanel 2007*). A potentially relevant parallel with Macháček’s bottom-up perspective concerns the capacity of concentrated demand to generate economic activity from below (e.g. *Kim et al. 2024*). A permanently or periodically occupied military node would have created demand for food, repairs, craft products,

various services, etc. Part of this demand may have been met institutionally, while another part could have stimulated voluntary, small-scale activities involving inhabitants of the surrounding region. In this sense, local market-like activity need not have constituted the mechanism responsible for the emergence or maintenance of the centre. It may instead have developed secondarily around an institutionally maintained garrison.

For the sake of interpretative balance, however, it is necessary to consider a counter-argument: the possibility that Bojná, alongside its defensive and logistical functions, simultaneously operated as a production node, in which iron smelting and/or working, as well as the manufacture of weaponry, constituted one of its principal outputs entering wider circulation. Such an interpretation is all the more plausible given that the site of Bojná-Valy and its surrounding area provide clear evidence of metallurgical and smithing activity (including traces of extraction, *tuyères*, slag, workshop areas, concentrations of waste, and hundreds of axe-shaped ingots). Its location within a resource-rich zone (*Robak in press*) would have favoured the placement of production of strategic importance. Yet production itself (and even the potential exchange of iron) does not demonstrate the existence of market mechanisms. If the production node remained under the control of political authority (as might be suggested by the permanent presence of a military force and the scale of the fortifications), then the distribution of its outputs may have operated through coordination by authorities rather than via an open market or negotiated exchange of the ‘iron for food’ type. In such a scenario, iron (and other metals) would function primarily as a politically managed resource – a material for weaponry, a tool of control, and a marker of prestige, while any exchange with the surrounding population would be secondary and segmentary, serving to secure provisioning and services rather than to enable self-regulating allocation at a regional scale. Dependence on external supplies and the absence of local production of certain everyday goods may thus create an impression that can easily be interpreted as ‘market-like’, although it may in fact result from entirely different mechanisms. From a methodological perspective, this constitutes a classic case of equifinality in the interpretation of archaeological indicators. This problem has already been encountered in the analysis of ceramic distributions in Moravia, as the same empirical pattern may arise either from a ‘market’ (in the sense of open exchange) or from ‘provisioning’ (in the sense of coordinated supply to a node).

At the same time, Bojná meets some of the ‘boundary conditions’ considered important by Michal Hlavica, particularly if it is viewed as a potential bottleneck – a node in which control over space (passes, routes) favours not necessarily the development of an agglomeration, but rather the concentration of flows, and thus also the monopolisation of selected goods and the benefits of mediation. In this light, one may interpret both its strategic position along the transit axis linking Staré Město and Nitra, as well as its location on the theoretical northern boundary of the Nitra ‘region’, together with its pronounced military and control component, which may have served not only defensive purposes but also the appropriation and management of territory. If, in addition, one takes into account the indications of the long-term significance of the Bojná landscape (as suggested in *Robak in press* and *Robak – Pieta 2026*, where a possible symbolic and ceremonial component predating the Great Moravian phase was proposed), then the later military function does not contradict this interpretation, but rather provides a logical mechanism for its stabilisation. A garrison, in this sense, operates as an instrument of security, control, and the political legitimisation of claims to space. One possible consequence of such an interpretation would

be a reconsideration of the origins of the nearby manorial site and rotunda at Nitrianska Blatnica (Robak 2024), understood as the residence and maybe private property of the controller of the Valy stronghold.

Finally, the evidence of imported goods (such as glass), monopolised items, and standardised goods, such as axe-shaped ingots (and possibly sickles), lead weights, or lead ingots corresponding in weight to the Carolingian pound (Robak *et al.* 2026), may be interpreted as the coexistence of two distinct phenomena: (1) selective demand for, control over, and monopolisation of specific flows (the ‘bottleneck’ logic), and (2) segmentary exchange of goods and services stimulated by the additional demand generated by the garrison, potentially including partly bottom-up activity, for example in the form of a kind of grassroots entrepreneurship. I would, however, remain cautious about treating these categories of finds as unambiguous indicators of a market. Standardised weights, weighing devices, and imported goods may occur both within systems of market exchange and within controlled redistribution, storage, the accounting of raw materials, or other forms of coordinated distribution.

In this configuration, Bojná appears less as a fully developed market centre and more as a node in which coordinated resource management (measurement, accounting, storage, and craft activity) and increased flows of goods resulting from concentrated military demand could jointly generate ‘market-like’ behaviour (Shaw 2012; Kim *et al.* 2024). Such exchange could therefore be economically genuine without constituting the primary mechanism through which the centre itself was created, supplied, or integrated into the wider political system. It is precisely this interplay of mechanisms of redistribution and politically coordinated provisioning, monopolisation at bottlenecks, and exchange within service zones that makes Bojná particularly valuable as a test case for both Macháček’s triad and Hlavica’s model, provided that these are not treated as zero-sum alternatives.

The case of Bojná does not so much refute the models proposed by Jiří Macháček and Michal Hlavica as it compels their reformulation. Rather than choosing between ‘market’ and ‘redistribution’, the more pertinent question is what type of node is being analysed and which logic of integration was most appropriate to it. In this sense, the two models need not be regarded as mutually exclusive. Bojná allows for the precise formulation of a hypothesis addressed in the Macháček–Hlavica debate without reducing it to a simple dichotomy.

From the perspective of Macháček’s triad, the site fits poorly with both model 1 and model 2, while it appears closest to model 3 – though only superficially, since the available data do not support the interpretation of local exchange as the primary mechanism integrating the system as a whole. This raises the possibility that the triad itself may be insufficient and that additional models should be considered. From Hlavica’s perspective, Bojná may indeed function as a ‘bottleneck’ and may even generate ‘market-like’ signatures. However, their origin need not be market-based in the sense of the CPT, but may instead derive from military function, logistics, and institutional coordination. In this respect, Bojná does not so much confirm or falsify the existence of a market as such, but rather compels a conceptual distinction between institutions of exchange and the existence of a market as a mechanism of regional economic integration.

As a side note and a recommendation for future research, it is worth observing that Bojná’s location and the range of its direct influence may correspond to the scales of interaction expected within central place models (Evans 1980, 870; fig. 1; Hlavica – *Pro-*

cházka 2020; Hlavica 2023, 48; fig. 14). If CPT is applied, this configuration corresponds to the transport principle, $k = 4$, in which a centre is located not in the middle of its own consumer zone or in an area particularly favourable for agriculture, but in a position advantageous from the perspective of communication – in this case, along the combined riverine and overland route linking Nitra and Staré Město. If Bojná had functioned primarily according to the market principle, $k = 3$, one would expect it to have served a relatively regularly distributed population within its own hinterland – settlements, producers, and consumers. So far, however, no such immediate and densely settled hinterland has been identified around Bojná.

It should also be clarified that the radius of approximately 35 km proposed by Hlavica as the sphere of a centre's influence is both realistic and methodologically sound, yet it does not correspond to a half-day travel norm. Rather, it reflects the range of so-called effective political control in pre-industrial societies (*Spencer 2010, 7119–7120*), i.e., a distance that could be covered within several hours under conditions of necessity, though not necessarily by the same individual. A range of studies on communication in prehistory and the medieval period (including analyses of the distribution of toll stations, networks of hillforts, and similar infrastructures) indicate that the daily travel limit for a pedestrian carrying a load was approximately 30–40 km, a comparable distance for ridden and pack animals (which also travel on foot, tire easily, and were costly), and around 20 km for wheeled transport (*Christaller 1966, 118; Bachrach – Aris 1990; Robak 2009, 182*). The measure of 20 miles (32.19 km) also recurs frequently in the early medieval period as an operational unit allowing for the effective mobilisation and movement of forces within a single day under typical conditions (*Abels 1988, 68–71*). Accordingly, it is useful to employ the concept of an operational range (32–35 km), which should not be conflated either with the area actually controlled by a given centre – this being dependent on other factors such as political decisions or geographical constraints – or with its immediate settlement and economic hinterland.

The distribution of most finds of belt fittings of the Bojná type, the only category of artefact that can currently be identified as a product made in Bojná-Valy (*Robak 2023*), falls within a circle of approximately 35 km in radius. At a comparable distance lies the hillfort of Dolné Vestenice II, where artefacts made of lead originating from the same source as the large ingots discovered in the Bojná hoard have been identified (*Robak et al. 2026*). If these observations are confirmed and further refined through provenance studies and the analysis of distribution networks, they may provide a rare empirical foothold for distinguishing whether we are dealing with a 'service zone' in the sense of a market or central place, or rather with a radius of influence resulting from logistics, control, and supply channels.

According to Jiří Macháček, Great Moravian centres were subsistentially dependent on their agrarian hinterlands, with which they were not connected through market relations in the sense of a dominant exchange mechanism; the transfer of goods was institutional and socially embedded, even if relations between centre and village could be subject to negotiation. For Michal Hlavica, by contrast, economic relations formed the principal axis of interaction. It is, however, fairly clear that Great Moravian agglomerations and their immediate surroundings constituted a single, integrated socio-economic system (cf. *Hladík et al. 2022*). Both approaches, however, tend to overlook non-economic factors that may have influenced the formation of networks (cf. *Siemianowska 2014, 33–34*).

It is within this broader frame that ‘jokers’ appear: sites such as Bojná (and perhaps also Klášťov, mentioned by Hlavica, see *Fig. 1*) which operate outside the classical agglomeration–hinterland model and according to logics tailored to unique conditions. These sites do not simply fail to fit the model. Rather, they introduce interpretative complications, as they seem to fulfil functions requiring different modes of provisioning and control. Their uniqueness makes it difficult to assign them to any established model. Location at the intersection of spheres of influence – for example, between Nitra and Pobedim in the case of Bojná (assuming the synchronicity of all three sites) – and effectively at the boundary of geographical structures (*Robak in press*) suggests that these sites may have been deliberately situated ‘at the edge’ of systems, or even just beyond them, as artificial extensions of central authority. They could serve as delegations of power, in the case of Bojná primarily military, in other cases perhaps economic (cf. the Břeclav–Pohansko – Mikulčice configuration in *Hlavica 2023*, 50; *Hladík 2020*, 312). It would be particularly interesting to investigate whether more such paired configurations can be identified in the late phase of Great Moravia (e.g. Biňa – Mužla–Čenkov).

It is also worth considering whether some of these arrangements may have functioned as ‘gateways’ (*Burghardt 1971*; *Westerdahl 2006*), i.e., sites peripheral to a given settlement territory, yet of considerable importance for long-distance connections, located as entrance points to producing regions. Alternatively, some of these configurations may represent survivals of earlier spatial arrangements. For example, the centre of the Bratislava region, whose role as a central place at the beginning of the 9th century remains questionable, and which may instead have functioned as a ‘gateway’ (cf. *Hladík et al. 2022*, 127; *Robak et al. in press*; see also *Burghardt 1971*, 280 for later periods), appears to have been located in the vicinity of Svätý Jur. Meanwhile, Pobedim fits well into classical patterns (a centre located in a river valley) and into Moravian-type configurations that may already have been forming at the turn of the 8th and 9th centuries (*Fig. 2*). At the same time, however, the sphere of influence of Pobedim clearly overlaps with that of Nitra. The configuration Pobedim (–Bojná–) Nitra thus represents a particularly striking case of spatial tension, and it is possible that the location of Bojná and the desire to control its surroundings was not without significance in this context. This opens up a range of further research questions. How did the still-functioning Avar Khaganate influence the formation of this system in the early 9th century (*Szenthe 2019*; *Szenthe – Gáll 2021*), especially given the presence of one of its settlement-production centres at Komárno (*Zábojník 2025*)? Could this have contributed to a northward shift in the sphere of interests associated with Nitra? Might Nitra, situated precisely on the cultural frontier of the Khaganate, initially have functioned as a ‘gateway’ for the middle Nitra region, with a centre at Bojná (notably Bojná III Žihľavník), only later giving way to a reconfiguration in which Nitra assumed primacy? Gateway theory explicitly allows for such a trajectory (*Burghardt 1971*, 272–273, 285).

I also diverge from Jiří Macháček in assessing the scale of ‘bottom-up negotiability’ in centre–village relations. The claim that temporary and conditional military assistance from armed villagers could have constituted a central element of negotiation with the centre, and that rural populations need not have been subordinated, does not seem to sufficiently account for the need for stable mechanisms enforcing obligations in the context of resource mobilisation in early medieval societies. It is, of course, possible to assume that large agglomerations did not always have to rest upon a rigid, authoritarian hierarchy, and that

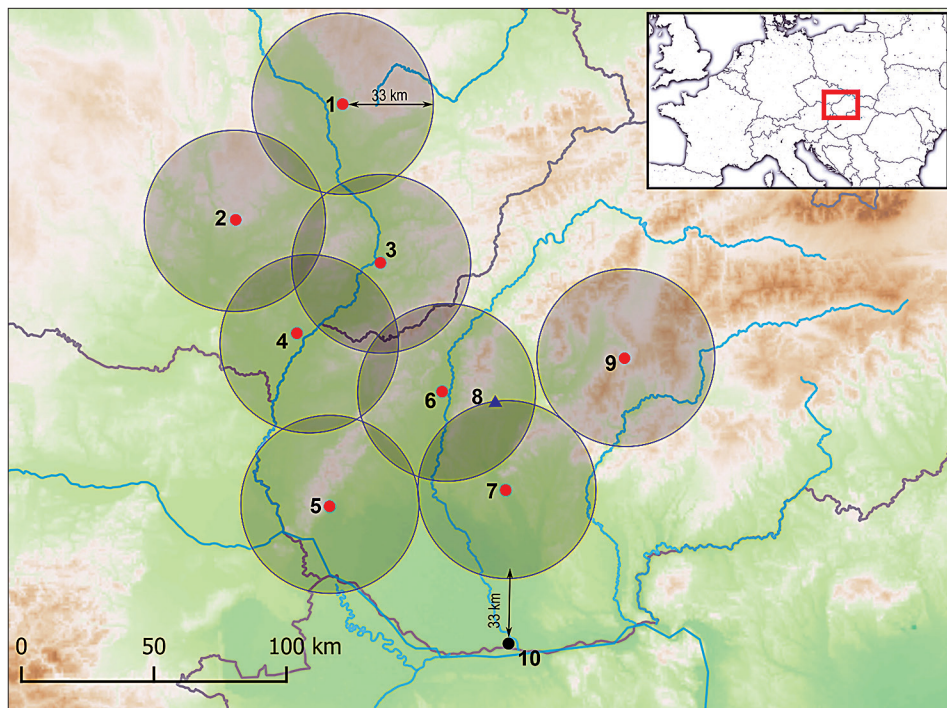


Fig. 2. Operational range (~33 km) of Moravian and Nitran centres in the early 9th century and other sites mentioned in the text. 1 – Olomouc-Povel; 2 – Brno-Líšeň; 3 – Staré Město; 4 – Mikulčice; 5 – Sv. Jur-Neštich; 6 – Pobedim; 7 – Nitra (Hrad?); 8 – Bojná-Žihlávnik; 9 – Prievidza-Hrade; 10 – Komárno.

elements of cooperation and reciprocity may have played a role. In practice, however, the maintenance of centres and the functioning of control nodes required stable and repeatable flows of obligations – conditions difficult to sustain solely on the basis of voluntariness or *ad hoc* ‘social contracts’. Where any activities are costly, cyclical, and burdensome, they typically require institutions of enforcement, at least in the form of continuous oversight, the threat of sanctions, and the regulation of flows. From this perspective, sites such as Bojná do not contradict the model of dependence on the hinterland; rather, they underscore the extent to which Great Moravia (particularly in the later phases of its existence) constituted a highly complex system. This system was most likely hierarchical-networked and functionally differentiated. Its core may have rested on relatively balanced centre-hinterland relations, while its peripheries and boundary zones were characterised by specialised military, logistical, and control sites operating according to a different logic.

The model proposed by Jiří Macháček nevertheless appears more plausible as a description of the underlying principle of the system, not least because comparable arrangements, namely the dependence of centres on their hinterlands and institutional mechanisms for enforcing obligations, are well attested in later phases of early state organisation in Central Europe, and are therefore known to have functioned effectively (e.g. *Moždziach* 1999; 2002, 220–225). One hypothesis requiring further verification concerns the possibility that individual graves containing swords in rural cemeteries may represent traces of

control systems. It is difficult not to observe that in Slovakia the distribution of 9th- and 10th-century sword finds is both concentrated and regular within an area of approximately 33 km in radius from Nitra (*Fig. 1*), which is effectively the only site on the eastern flank of Great Moravia with central functions comparable to those of the Moravian strongholds. This distribution corresponds closely to the communicative-administrative principle underlying Walter Christaller's model of central places (*Christaller 1966*, 63–66). It is therefore worth considering whether such finds might be interpreted as material indicators of individuals performing supervisory or controlling roles – either installed or appointed by the centre – whose maintenance was effectively transferred from the ruling authority to the local community (*Robak 2018; Macháček et al. 2021*, 279–281). Their function may have been to ensure the regular fulfilment of obligations without the need to resort to punitive expeditions only at the moment of attempted 'renegotiation' or open rebellion and the interruption of supply flows. This interpretation does not exclude the hypothesis advanced by Štefan (*2011*, 337) regarding a parallel stratum of *Bauernkrieger*. Rather, it offers a possible explanation for the disappearance of this group following the collapse of the system. Whether such individuals were recruited locally, which might suggest a degree of erosion within local communities (*Macháček et al. 2021*, 281; *Macháček 2026a*, 100), or originated from outside, thereby reducing the risk of clientelism and local entanglements, remains a secondary question. The verification of such hypotheses represents a promising avenue for future bioarchaeological and archaeogenetic research.

Conclusion

The case of Bojná demonstrates that the triad proposed by Jiří Macháček for central agglomerations is useful as a point of departure, yet insufficient when confronted with sites of non-standard functional profiles. Bojná, if interpreted as a typical central place, would fit poorly within the subsistence model of a fully developed agglomeration with an agrarian hinterland, because it lacks a clearly defined internal hinterland. It also corresponds inadequately to the autarkic model, since the available evidence does not support its self-sufficiency, even *Umland*. Centres such as Bojná may have, however, generated genuine, voluntary market activity without themselves having emerged through market mechanisms or being sustained primarily by them (cf. Klášťov, which occupied a position relative to Staré Město analogous to that of Bojná relative to Nitra). In this sense, I distinguish between a market sustaining the centre and a centre generating opportunities for exchange. This does not mean, however, that a centre belonging primarily to a non-market network cannot be useful for discussing the functioning and stimulation of market activity (cf. *Robak et al. 2026*).

At first glance, it appears closest to the model of a local agglomeration market; however, this variant likewise proves insufficient if local exchange cannot be regarded as the principal mechanism integrating the system as a whole. At the same time, this case partly supports the intuitions of Michal Hlavica, as it demonstrates that different mechanisms may coexist: institutional provisioning, control over strategic goods, segmentary exchange, and local craft-based services. At the same time, however, Bojná exposes the weakness of an overly broad application of the concept of the market. If almost any configuration of exchange and circulation can be described as 'market-based', there is a risk of losing the

analytical distinction between the market as a mechanism of integration and exchange as a secondary product of logistics and control. In this sense, Bojná does not so much falsify a particular model as compel us to ask what type of node we are dealing with and which logic of integration was appropriate to it. The interpretation of Bojná as a highly specialised military-logistical node therefore remains a hypothesis, but, in my view, one that is consistent with the current state of the evidence and open to further testing, analysis, and discussion.

If the proposed interpretation of Bojná is accepted, the Great Moravian system does not appear as one integrated by a single, exclusive mechanism. A hierarchical-networked and functionally differentiated model seems more plausible. Its core may have been based on classical centre–hinterland relations, redistribution, and to some extent local exchange, while in peripheral and boundary zones there also operated specialised military, logistical, and control nodes. These centres were not ‘failed agglomerations’, but rather a different category of delegated centres, organising space and flows in ways not fully consistent with the classical central place model. From this perspective, the dominant integrative force of the system still appears to have been the institutional mobilisation of resources, although its specific forms may have varied regionally and, in certain areas, coexisted with limited market exchange (segmental or micro-market). We are therefore dealing with a centre generating opportunities for exchange rather than a market sustaining the centre. Bojná therefore does not invalidate the model of dependence on the hinterland; it demonstrates that such dependence could also be organised through specialised nodes located outside the classical agglomeration framework.

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DISCUSSION – DISKUZE

Feeding power: Central places and their supply systems in 9th–12th-century Central Europe

Živit moc: Centrální místa a jejich zásobovací systémy ve střední Evropě 9.–12. století

Ivo Štefan

Even after 150 years of archaeological research on fortified centres, to which key central functions in early medieval Central Europe are generally attributed, we still do not have a clearer idea of how their populations were supplied with basic goods in practice. This text follows on the discussion opened by Jiří Macháček (2026) for Great Moravian agglomerations. It presents a systematic analysis of possible subsistence strategies, consistently linking them to the social profile of the inhabitants of the centres and to the property regimes that determined the forms of exchange. The evaluation of individual models is based not only on archaeological evidence, but also on written sources from the 11th–12th century. The author concludes that it is not possible to postulate a single universal mechanism; it is more likely that there was a concurrence of multiple strategies that overlapped and were used to varying degrees by different social groups for different commodities. Therefore, the 'hinterland' should not be understood as a homogeneous economic zone around the centre, but as a variable network of relationships and related commodity flows, which could reach even significantly distant regions.

Early Middle Ages – centre – agglomeration – hinterland – subsistence – agriculture

Ani po 150 letech archeologického studia opevněných center, jimž běžně v rané středověké střední Evropě přisuzujeme klíčové centrální funkce, stále nemáme jasnější představu o tom, jak byly jejich populace v praxi zásobovány základními potřebami. Tento text navazuje na diskusi otevřenou Jiřím Macháčkem (2026) pro velkomoravské aglomerace. Předkládá systémový rozbor možných subsistenčních strategií, přičemž je důsledně váže k sociálnímu profilu obyvatel center a k majetkoprávními režimům, které determinovaly formy směny. Hodnocení jednotlivých modelů vychází nejen z archeologické evidence, ale i z písemných pramenů 11.–12. století. Autor dochází k závěru, že nelze předpokládat jediný univerzální mechanismus; pravděpodobnější byl souběh více strategií, které se překrývaly a které v různé míře využívaly odlišné sociální skupiny pro různé komodity. „Zázemí“ proto nenavrhuje chápat jako homogenní hospodářskou zónu kolem centra, ale jako proměnlivou síť vztahů a na ni vázaných toků komodit, jež mohly zasahovat i do výrazně vzdálených regionů.

raný středověk – centrum – aglomerace – zázemí – subsistence – zemědělství

Introduction

Historical narratives and archaeological discoveries often emphasise grand stories, significant institutions, conflicts, and symbols of prestige, while the energy basis of early medieval politics remains less visible and glamorous. Power rested on human and animal labour, the availability of food and fuel, and above all, the ability to create, store, and move surpluses and convert them into logistics, armaments, hospitality, and loyalty. The extraction of surplus and its redistribution were therefore a key material expression of authority in relatively simple societies (Earle 2011, 32–41). In fragile subsistence economies – where

administrative buffers were thin and rule relied heavily on face-to-face ties – regular and dependable flows of staple commodities were a precondition for provisioning, feasting, and redistribution, and thus for the long-term reproduction of hierarchy. In this sense, surplus financed domination.

The ‘material’ becomes inseparable from social structure, political power, ideology and religion. In early medieval societies (including Central Europe), elite strategies of rule were closely tied to forms of landholding and control over labour (Wickham 2005). A useful heuristic is the distinction between ‘staple’ and ‘wealth’ finance (D’Altroy – Earle 1985). Staple finance relies on collecting food and ordinary utilitarian products and transforming them into the operation of the apparatus – above all, the maintenance of dependants and officials. Wealth finance, in contrast, privileges compact, high-value items (prestigious goods, ‘primitive monies’, coinage), whose production and circulation can be more tightly controlled. In Central Europe, the first model was fully outweighed by the second only in the course of the 13th century. Alongside these socially embedded forms of exchange, we must also assume a market sector of varying intensity for everyday products, one that scholarship has often marginalised for reasons addressed below.

From the 9th century onward, Central Europe witnessed a distinctive concentration of political authority, religious activity, military organisation, and economic practices into fortified enclosures of different sizes and ranks. Their networks reacted dynamically to political change: older strongholds faded, new ones were founded, and multi-tier hierarchies emerged. Fortified centres thus became hotspots of early state formation and territorial organisation (Herold 2022). The ‘castle’ system, around which a mosaic of *suburbia* gradually developed, persisted into the early 13th century, before being replaced by a new socio-economic and institutional model adopted from Western Europe (Klápště 2012, 325–459).

Against this background, the question of how centres were provisioned with food and other basic commodities – most recently sharpened by Macháček (2026) for Great Moravia – touches the core of the problem. Any reconstruction of the internal socio-economic relations of this short-lived 9th- to early 10th-century polity on the eastern periphery of the Carolingian world is constrained by an extreme scarcity of written evidence, leaving room for divergent readings of the same archaeological and paleoenvironmental record. The recent debate on Great Moravian statehood illustrates how radically interpretive frameworks can diverge on key issues (cf. Macháček 2012; 2015; Kalhous 2014; Profantová – Profant 2014; Štefan 2014).

When working with preserved written records from the 11th and 12th centuries, which, with a few exceptions, only record property donated by the monarch to important ecclesiastical institutions, we encounter the following unknowns: 1) what part of his property the ruler actually transferred to the church; 2) to which centres the individual donated people, burdened with various duties and often scattered across distant locations, originally belonged, who organised the work of serfs and craftsmen within the original princely economy, and how the system of collecting taxes functioned; 3) how much of their production was handed over to the princely apparatus, and how they disposed of the rest.

It is clear that the centres of Great Moravia, and likewise the extensive hillforts of early Přemyslid Bohemia in the 9th and 10th centuries, were not – unlike high medieval castles – private residences of a narrow elite and its household staff. Rather, they were ‘public’ complexes that integrated much broader communities. In this sense, the period

may also be understood as a late chapter in protohistoric societies of a ranked type. Their subsistence strategies, therefore, cannot be reduced simply to the problem of provisioning elites but also, amongst other things, to take into account the phenomenon of hospitality and communal feasting as important principles of archaic societies.

Compared to Great Moravia, Bohemia combines a growing archaeological and palaeo-environmental record with the presence of written sources for the 11th and 12th centuries. We can assume that there were significant differences between individual early medieval societies across space and time. Models from Bohemia in the 11th and 12th centuries, therefore, cannot be transferred *ad hoc* to the situation in Great Moravia in the 9th century. Nevertheless, I believe that the energy and logistical possibilities and the socio-economic framework of these early medieval societies were essentially similar and implied the search for similar practical solutions.

The hinterland as an archaeological black box

The question of how centres were supplied with goods has become closely intertwined with the concept of the hinterland in archaeological discourse. *Christaller's* (1933) original concept is well known. Urban geographer *van Cleef* (1941) then attempted to systematically categorise the geographical zoning of the hinterland. The immediate surroundings of the city, on which the city is directly economically dependent, are called the *Umland*, while the *Hinterland* is understood as a wider market zone with interconnected local market areas.

When applying these ideal models to early medieval realities, their 'default settings' need to be kept in view. They were designed to capture the geographical logic of market exchange in urban centres embedded in a fully commercialised landscape, where the key constraint is the cost–benefit balance of transaction costs (cf. generally *Klír* 2024, 522–530). In economies with a limited market sector, where rents were predominantly paid in kind, their explanatory reach may therefore be restricted.

Therefore, the hinterland of early medieval centres should be understood less as a fixed, clearly demarcated zone, as it has been done, quite out of necessity in the archaeological literature. Instead, it should be approached as a dynamic network of social and economic relationships that could extend to varying distances from the centre. In any case, in the absence of robust written evidence, this issue is difficult to address on the basis of archaeological and palaeoenvironmental data alone (cf. *Moździoch* 1999; *Poláček* 2008; *Mařík* 2009; 2011; *Dresler* 2016, 237–239; *Hladík* 2020).

Based on earlier research, *Macháček* (2026) discusses the background of Pohansko near Břeclav in relatively straightforward terms as a network of surrounding rural settlements within a radius of approximately 10 km, which were functionally connected to the agglomeration in such a way that together they formed an integrated socioeconomic system. Rural production (especially cereals and livestock) was understood to cover the consumption needs of non-producing groups in the centre, while any surplus was, in his view, channelled to the centre primarily in the form of renders/dues.

A more nuanced framework for studying the hinterlands of Anglo-Saxon emporia was proposed by *Naylor* (2016), and it can be applied heuristically to Central European centres as well. Naylor distinguished four ideal-typical dimensions of the hinterland. The

impact hinterland (1) covers the zone in which an emporium exerted an immediate influence on settlement patterns and the local economy. Naylor places this at roughly 15 km, i.e. a plausible distance for daily travel. It is precisely this zone that archaeologists – Macháček included – most commonly have in mind. Productive hinterlands (2) are the areas from which an emporium drew raw materials, potentially extending 40–50 km or more. Subsistence hinterlands (3) serve for the provisioning zone for foodstuffs. Here, Naylor stresses the difficulties of establishing food provenance, since supplies may have been either local or brought in from much greater distances. Finally, social hinterlands (4) define the social reach and contact networks of an emporium, which varied by social strata (elites versus the peasantry).

A heuristic perimeter around a centre, defined by ease of access, clearly makes sense for the transport of perishable foodstuffs, and for the direct organisation of labour and land management, which presupposes day-to-day oversight (intensive agriculture). Yet even in the case of durable provisions, such as grain, the staple of the early medieval diet, as well as honey or livestock (including horses), transport could, as I will demonstrate below, in principle operate over much greater distances. A marked reduction in transport costs and the relatively straightforward movement of bulky commodities over long distances was enabled by river transport, especially along major waterways. This, in turn, significantly distorts models of potential accessibility derived from overland routes, which was the case for most of the major agglomerations of early medieval Central Europe.

A separate category – one I do not wish to pursue here – is the modelling of variables such as the economic potential of the landscape, nutritional requirements, and the productivity of early medieval agriculture. As the modern world demonstrates, the spectrum between basic requirements for survival and culturally or socially expected needs can be very wide indeed. Written evidence from Bohemia seems to point towards two extremes. At the bare subsistence threshold were apparently the two rural canons in the village of Únětice in Central Bohemia and their families before the mid-12th century, whose maintenance was to be secured by the labour of three peasant households comprising about twenty unfree individuals in total (*CDB I*, no. 124, 129–131; *Friedrich 1904–1907*). At the opposite end of the spectrum stand substantial endowments assigned to provosts and several canons of major ecclesiastical institutions: entire villages, scores of unfree dependants, and various renders and dues. In addition, these clerics often possessed private property of their own.

In the latter case, however, the issue was not mere subsistence, but also the maintenance of wealth, splendour, and the prestige that flowed from them. *Jarrett (2019)* has recently subjected *Duby's (1974)* influential thesis of the extremely low productivity of early medieval agriculture – apparently grounded in a misreading of the evidence – to a fundamental revision. Jarret argues for stable and relatively high productivity in Carolingian agriculture, comparable to yields in the High Middle Ages. For the Slavic parts of Europe, there is probably no reason to assume any marked differences (*Sárosi 2022*).

Despite the sophistication of attempts to reconstruct the subsistence mechanisms of protohistoric and early medieval settlement agglomerations, modelling has so far not led to an unequivocal confirmation of any of the extreme scenarios. In most cases, authors ultimately conclude that the surrounding landscape offered sufficient resources for predominantly autarkic production, without thereby ruling out the inflow of part of the supply from outside (cf. *Mařík 2009; Danielisová – Hajnalová 2014; Dresler 2016*).

Rural population and inhabitants of agglomerations

The reconstruction of the socio-legal composition of agrarian communities is certainly not just a marginal topic for historians; it determined the basic possibilities and limits within which the elites could exploit their labour and surpluses. Archaeologically, this composition may be approached through settlement patterns and through material forms of social display. Throughout early medieval Europe, the rural population was basically divided into two broad legal categories – free and unfree. Written sources from the 11th and 12th centuries indicate that there was still a significant proportion of personally free peasants in Central European monarchies, who were formally subordinate directly to the monarch and could not be given to anyone else (for Poland *Modzelewski 1987*).

On the other hand, a very heterogeneous group consisted of personally unfree people, whose status ranged from actual slaves bound to the courts of the elite to individual farmers or small craftsmen scattered throughout the villages. Modern historians refer to the complex patchwork of various taxes and services paid to the monarch, his apparatus, and subsequently to church institutions as a *service organisation* (*Modzelewski 2000; Krzemieńska – Třeštlík 1978; Klápště 2012, 344–350; Petráček 2017; Curta 2009*). However, the share of both basic groups in individual agricultural communities or within regions cannot be determined more precisely. Nevertheless, the sources indicate a more significant concentration of unfree people in the hinterland of the centres (*Škvřáček – Janovská in press, obr. 8*).

Only the gradual erosion of the freedom of the free and their merging with the unfree into a single class of subjects opened up space for the gradual adaptation of the Western model of a landed estate. The question of the economic capital of elites and the origins and extent of landed property has thus become one of the cornerstones in debates on the functioning of early states in Central Europe (cf. most recently *Wihoda 2007; Klápště 2012, 13–110; Jan 2019; Žemlička 2024; Antonín – Macháček 2026*).

In the case of Great Moravia, where no written sources are available, the reconstruction of the social dimension of the rural landscape is based exclusively on archaeological or bioarchaeological evidence. It is usually traced through settlement patterns and funerary evidence, with militaria in rural graves suggesting a predominantly free population (*Štefan 2011, 335–339; Macháček et al. 2021*).

The most fundamental and at the same time the most challenging question in relation to protohistoric and early medieval centres concerns the motives behind their construction related to the range and proportion of functions they performed (written sources *Sláma 1986; Kalhous 2018b*; for Central Bohemia *Štefan – Boháčová 2018*; theory *Gringhuth-Dallmer 1999*). Estimates of their population size usually rest just on a handful of indirect variables: the extent of the occupied area, the parameters of fortification (and the inferred notions of defensive capacity derived from them), or the demography of adjacent cemeteries. None of these indicators, however, yields more than very approximate results. For the time being, little more can probably be said than that the populations of the most important centres in the 9th and 10th centuries did not exceed 1,000–2,000 people, while less prominent centres were permanently inhabited by communities of at most a few hundred. Comparable demographic parameters may be assumed for Great Moravian agglomerations (cf. *Mařík 2009, 139; Dresler 2016, 42–52; Štefan 2024, 49–53*). However, in the subsequent period from the 11th century onwards, population numbers undoubtedly rose markedly, above all in the case of Prague.

If centres drew on entire regional communities, their resident populations should be seen as highly dynamic rather than stable. Numbers could increase sharply in times of threat, during the ruler's presence, at assemblies, feast days, markets and other festive occasions, or seasonally. Rare written references scattered across Europe point to a close association between rural populations and military service in fortified centres, and the same must be assumed for the labour-intensive construction of ramparts that often extended for several kilometres. Anglo-Saxon sources of the 8th to 10th centuries show this particularly (Hollister 1961). From geographically and chronologically proximate evidence, one may cite Widukind's well-known account of Henry I's military reforms in Saxony in the 920s and 930s: '*First, he selected every ninth man from among the agrarii milites to live in fortifications. Each ninth man would build dwellings for the other eight, and would receive and store a third part of all of the grain. The other eight would sow and reap grain, and would gather up a ninth and would set this aside on their own properties. Henry desired that all law courts, assemblies, and festivals should be held in the fortifications. They were to train in these fortifications day and night so that they would learn in times of peace what to do when they faced the enemy. Aside from these strongholds, there were very few fortifications, and even these had poor walls.*' (Widukind, *Rerum gestarum Saxonicarum libri tres* I, 35, 49: Hirsch – Lohmann 1935).

A similar implication follows from the brief report of the Vyšehrad Canon on the Bohemian expedition to Poland in February 1134, which notes that the Czechs secured rich booty because the Poles – since Lent was approaching and they assumed no enemy would come – had left their castles and other fortifications, while remaining in their villages (*Fontes rerum Bohemicarum* II, 218: Emler 1874). In Poland, there is written evidence of specific duties performed by rural guards at castles ('posada') still in the 13th century (Jurek 2007, 79). In this light, Macháček's provocative metaphor of early medieval centres as South American 'favelas' is likely to be pointing in the right direction (Macháček 2026, 122).

The relationship between early medieval centres and the surrounding social landscape has recently been brought into sharper focus, *inter alia*, by the archaeological investigation of a bipartite fortified site at Prague-Vinoř, with a total area of 4.4 ha, established in the early 10th century. The site lay between two major centres – Prague Castle (13 km) and Stará Boleslav (9 km) – and can therefore hardly be regarded as a first-order centre in its own right. Yet in the northern part of the main enclosure, the excavation uncovered a large hall building with a high-status burial of a girl placed in one corner. Reaching the size of approximately 49.5 × 9.5 m, the capacity of the building may have reached several hundred people (Štefan – Hasil 2024). By whom and for whom, then, was this hall intended, situated in such close proximity to residential Prague?

It is even more challenging to determine what proportion of a centre's population was systematically and entirely supported by the surpluses of others due to their privileged social status or economic specialisation. The internal subdivision of agglomerations into distinct fortified areas and suburbia already points to the presence of different communities with varied status (cf. Macháček 2005; Štefan – Boháčová 2018). Alongside the principal authorities – members of princely kindreds, castellans, or the heads of noble families, as well as priests and members of ecclesiastical communities, whose presence is documented in written sources – discussion most often centres on 'professional' members of armed retinues present at hillforts. The influential Czech historian Třeštík even posited several

thousand such men for the Přemyslid army of the dukes Boleslav I and II in the second half of the 10th century, who should be maintained, paid, and equipped from the duke's resources (*Třeštlík 2001*; critically *Kalhous 2012*, 32). Archaeologists have tended to seek these professional warriors above all in richly furnished cemeteries associated with major centres. Recent work on Carolingian warfare, however, has raised well-founded doubts whether large professional armies could have existed in the Early Middle Ages at all. A model of situational or seasonal mobilisation of people of varying social standing, who normally pursued other activities, including agriculture, appears much more realistic (*Haack 2020*, 208–209, 215–216). In this regard, one may recall the testimonies cited above. Independent evidence is also provided by stable isotope analyses of buried individuals, which suggest that the richness of grave furnishings is not necessarily related to the quality and composition of diet; for some groups associated with centres, dietary patterns were indistinguishable from those of ordinary agrarian communities (*Kaupová et al. 2019*).

A useful example is provided by the cemetery of 152 graves around the church in the northern outer bailey at Pohansko near Břeclav. In my view, Macháček offers a highly plausible interpretation, arguing this community to be an early medieval *familia* headed by a noble authority buried within the church, perhaps the hillfort's administrator. His prestigious lineage was associated with individuals of varying social status (some furnished with militaria), including an unfree household workforce (*Macháček et al. 2016*, 191–198; *Macháček 2019*, 195). A comparable basic structure may also be assumed for Bohemian centres of the 9th and 10th centuries. One of its likely manifestations are the burials in discrete clusters corresponding to extended kin-based units in the immediate vicinity of centres (cf. Prague Castle, Budeč, Levý Hradec, Klecany: *Štefan 2024*, 53–55; 2026, 152–153). Yet can we assume that even the low-born members of these communities were sustained through the labour of others?

Another potential group exempted from agricultural production would have been craftspeople. Their presence in centres is clearly attested both by the archaeological record and – at least for the 11th and 12th centuries – by written sources (*Tomas 1983*; *Petráček 2017*, 64–75). However, caution is again warranted. Despite the intuitive assumption often made by archaeologists, part-time rather than full-time production was the norm in most pre-industrial societies, and producers were frequently self-sufficient (*Costin 2005*, 1055, 1062).

A specific social category associated with centres, which is relatively well known from written sources of the 11th and 12th centuries, comprised unfree individuals who either practised crafts under controlled conditions (above all textile production within the so-called *gynaeceum*) or performed a range of practical services (*Petráček 2017*, 52–58). They were sometimes grouped under the collective label *de familia*, being, with occasional exceptions, donated without land (*Kalhous 2018a*, 67, Tab. 10, Graph 8). Even for these people, however, full dependence on food rations is not unequivocally demonstrated. The majority of servants donated to ecclesiastical institutions were in fact settled at greater or lesser distances from the centres, to which they presumably travelled only temporarily – for example, to Litoměřice once a week (*CDB I*, no. 55, 56; *Friedrich 1904–1907*).

It follows from the above that attempts to quantify the number of people permanently present in centres who were, for various reasons, wholly removed from primary food production are subject to exceptional uncertainty. Substantial variation may be expected depending on the function and hierarchical rank of individual centres, alongside a gradual expansion of this segment in the most important agglomerations. The difference between

‘a few dozen’ and ‘several hundred’ such individuals must have had profound implications both for the choice of economic strategies and for the organisational demands of provisioning and redistribution. This, in turn, affects the extent to which and how such arrangements could leave a recognisable imprint in the archaeological record.

Ideal-type models of centre provisioning

I will attempt a heuristic assessment of the main variants of subsistence strategies following and developing the argumentative structure proposed by *Macháček (2026)*.

Model 1: Central places with their own agricultural hinterland

As noted above, the economic configuration of a central place with its ‘own’ agrarian hinterland constitutes the basic scheme to which archaeology most often returns – explicitly or implicitly. This is also the model most commonly invoked in interpretations of Great Moravian centres (*Hladík 2020; Hladík – Látková 2020; Macháček 2026*).

The current debate over the subsistence basis of Pohansko near Břeclav was above all triggered by doubts whether the settlement network identified in the agglomeration’s surroundings through fieldwalking is synchronous with Pohansko’s existence (cf. *Dresler – Macháček 2008; Dresler 2016, 180; Macháček 2026*). I shall leave the chronological assessment to specialists. A strong argument for the existence of a synchronous settlement structure around Pohansko is, in any case, the securely demonstrated concentration of agriculturally oriented settlements and cemeteries around the nearest major centres in Mikulčice (*Hladík 2020*) and Uherské Hradiště-Staré Město (*Galuška 2008*). If such a contemporaneous structure existed at Mikulčice, it seems unlikely that the subsistence of a neighbouring centre of comparable size and importance would have been based on fundamentally different principles.

A strong supporting argument for the interdependence of centres and surrounding rural settlements is that settlement intensification in the wider area occurred only in direct connection with the emergence of the centre itself. Unfortunately, clear separation of chronological horizons before and after the formation of centres is not straightforward, especially in regions with long-term settlement continuity. This is an issue that would certainly benefit from a new, detailed analysis. Convincing archaeological evidence of this kind is available, for example, in the hinterlands of the most important early Piast centres in Greater Poland (*Kurnatowska 1999; Janiak 2008*). Among the Great Moravian centres, settlement identification is convincingly documented around Mikulčice (*Hladík 2020; Hladík – Látková 2020*).

In Bohemia, a marked acceleration of settlement activity has recently been demonstrated – on the basis of both archaeological and palynological evidence – in the micro-regions around Prague–Vinoř and Stará Boleslav northeast of Prague. Up to the turn of the 10th century, the fertile region between the Vltava and the Elbe appears to have been only sparsely settled (*Fig. 1: A*). Pollen data from the immediate vicinity of the Prague–Vinoř hillfort still indicate, for the second half of the 9th century, an open, park-like landscape used primarily for grazing. In contrast, the emergence of centres around c. 900 is associated both with a marked increase in archaeological evidence for settlement across the region

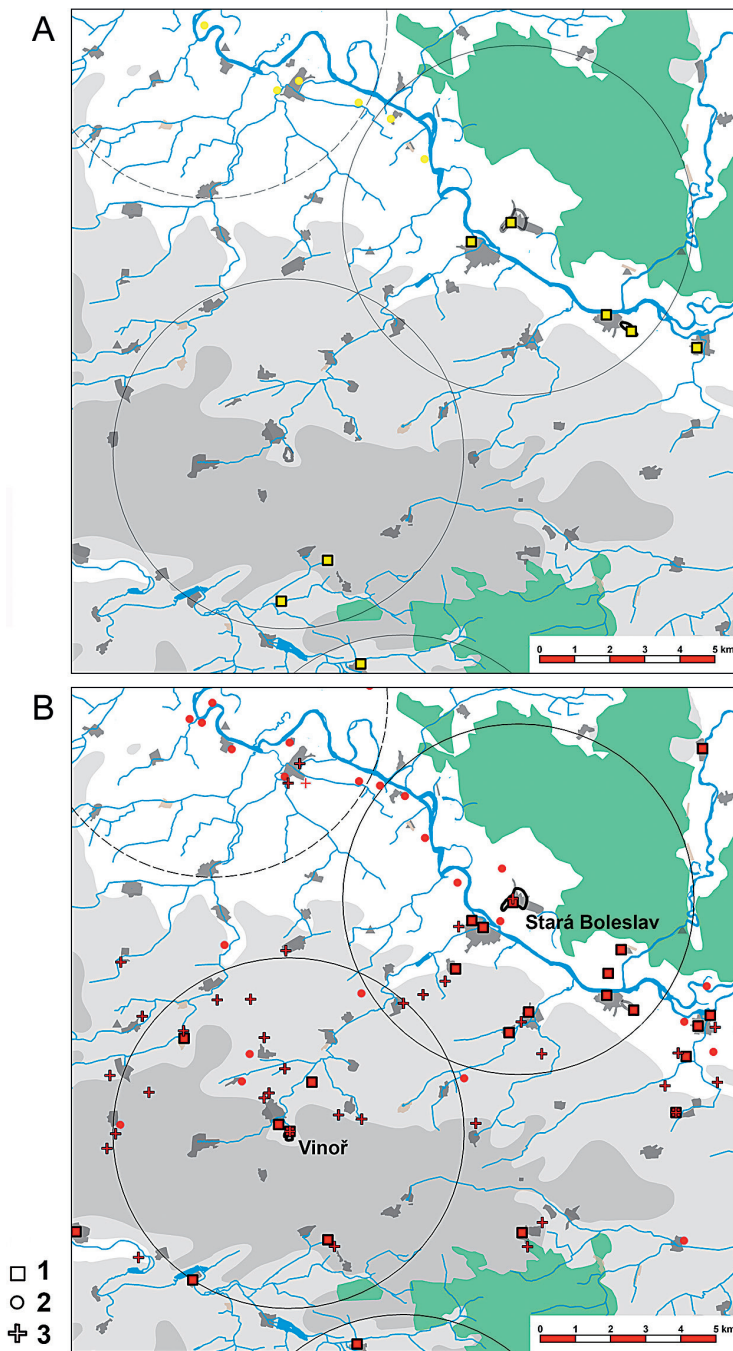


Fig. 1. Archaeological evidence of settlement development in the region northeast of Prague around the fortified settlements of Prague-Vinoř and Stará Boleslav. A – c. 700–900/950; B – c. 900/950–1200. 1 – settlements evidenced by archaeological research; 2 – settlements evidenced by surface prospecting; 3 – burial grounds (developed by Z. Neustupný).

and with extensive deforestation and the onset of cereal cultivation (*Fig. 1: B*) (Boháčová 2008; Pokorný 2024, 356–357; Štefan *et al.* 2024). In the case of Greater Poland, this ‘colonisation’ is usually interpreted as evidence for forced transfers of an agrarian population from other regions in order to meet the needs of military elites (e.g. Kurnatowska 1999, 55–57). As suggested above, however, relations between a centre and its surrounding population may have been considerably more complex, potentially offering a range of benefits not only to elites but also to the rural communities themselves. At the same time, the restructuring of settlement patterns may reflect a broader complex of social transformations associated with the formation of early states (Curta 2009, 41).

Let us focus on the structure of property and population in the area around the centres. Early medieval centres did not exist in splendid isolation. At least some of their inhabitants were undoubtedly linked by kinship to the surrounding agrarian communities, and the provisioning of hillforts with food may have been organised, at least in part, through broad networks of kin, as indicated by the cited reports. From this perspective, we really do not need to see ‘elites’ everywhere.

Princely donations to major ecclesiastical institutions in 11th- and 12th-century Bohemia – especially those located within, or close to, major princely centres – suggest that zones of settlements held in ducal property may have existed around centres and contributed to their provisioning (Škvrňák – Janovská *in press*). The original hinterland of the important centre in Stará Boleslav is partly reflected in the pattern of endowment of the chapter founded there before the mid-11th century (CDB I, no. 382, 358–362: Friedrich 1904–1907). The charter opens with the donation of seven entire villages, strongly concentrated within a radius of only a few kilometres of Stará Boleslav, whereas subsequent gifts of individual servants (both with land and without) and various dues were dispersed across a much wider territory (cf. *Fig. 2*). In addition, the duke assigned seventeen ploughmen (*aratores*) to these villages, which must have increased their economic productivity and, at the same time, points to the ruler’s capacity to reallocate people.

A further example is provided by the endowment of Břevnov Monastery on the edge of the Prague agglomeration, which, among other assets, received four entire villages in its immediate vicinity, together with dependants and land and various appurtenances (*‘cum omni familia et terra sufficienti’*). The most significant rulers’ zone was the extensive Prague agglomeration itself, from which the ruler appears to have alienated relatively little. Břevnov, in Prague, received thirty *animatores* together with land (CDB I, no. 375, 348: Friedrich 1904–1907). Comparable concentrations are suggested by charters relating to regional centres in Prácheň (ten villages; CDB I, no. 379, 352–354: Friedrich 1904–1907), Libice nad Cidlinou (seven villages; CDB II, no. 378, 422: Friedrich 1912), and Litoměřice (seven villages; CDB I, no. 55, 53–60: Friedrich 1904–1907).

On the basis of a geographical analysis, Mařík (2009, 155–156; 2011) identified a clear concentration of these settlements within roughly 8 km of the original centres. Yet the archaeological evidence for settlement does not, in fact, display distinct clusters around the centres in question; in fertile regions, settlement appears to have continued seamlessly beyond the notional zone. Without written sources, we would be unable to delimit the presumed catchment areas at all. Nor does the written evidence allow us to determine what share of his landed resources the ruler donated to ecclesiastical institutions. That the duke was not the sole landholder even in the vicinity of strongholds is hinted at by the Stará Boleslav foundation charter itself. In this document, ducal and non-ducal lands are

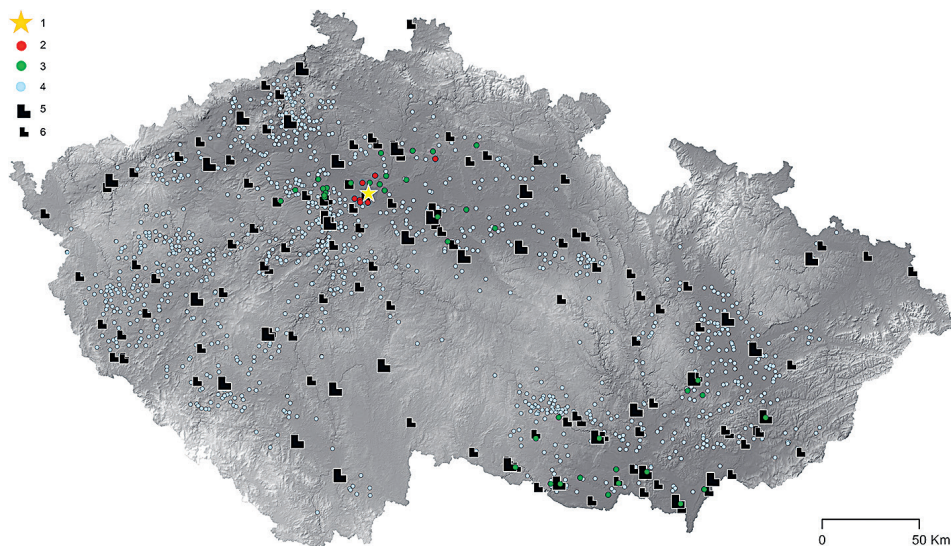


Fig. 2. Geographical distribution of the property holdings of the chapter in Stará Boleslav, founded in the 1050s from the royal estate on the basis of document *CDB* I, no. 382, 358–362: *Friedrich 1904–1907*. 1 – Stará Boleslav; 2 – donation of entire villages; 3 – individual plots of land, servants, levies, customs duties, and tolls; 4 – other locations mentioned in written sources until around 1200; 5 – main administrative centres of the 11th and 12th centuries; 6 – older and less significant fortified centres (data by J. Škvřák, graphics by D. Václavíková).

distinguished both in the Žatec area of north-western Bohemia and around Stará and Mladá Boleslav in east-central Bohemia (*CDB* I, no. 382, 361: *Friedrich 1904–1907*).

From where, then, was agricultural production organised, and what share of their output did rural communities deliver? As in Western Europe, the principal nodes of agricultural production and the collection of renders of all kinds were manorial estates (*curiae*), even though they are mentioned only rarely in the sources, presumably because rulers were reluctant to alienate them. Only a small number can be located with any precision. The phrasing of the written sources suggests that such estates stood in close association with all major castellany centres (explicit references to *curiae* occur at Prague and Stará Boleslav: *CDB* I, no. 393, 405; no. 382, 360: *Friedrich 1904–1907*), where not only agricultural produce but also goods of many kinds were assembled. Manorial estates – sometimes with a residential component, sometimes without – are, however, also attested in the open countryside without any direct connection to centres (*Petráček 2017*, 138–158). The best described is the estate in Radonice, with a substantial staff (*CDB* I, no. 156, 159: *Friedrich 1904–1907*; *Meduna 2009*). Valuable information is also provided by the foundation charter of the Hradisko Monastery near Olomouc, founded in 1179 from the property of the Olomouc duke and his wife, which mentions the estate at Úsobrno, situated some 35 km (!) from Olomouc, again together with villages said to belong to it (*CDB* I, no. 79, 83: *Friedrich 1904–1907*).

The situation around Prague is documented most clearly in the written sources, though the record is still very fragmentary (*Fig. 3*). In addition to the central ducal estate located somewhere in the vicinity of Prague Castle, a comparable economic institution must also

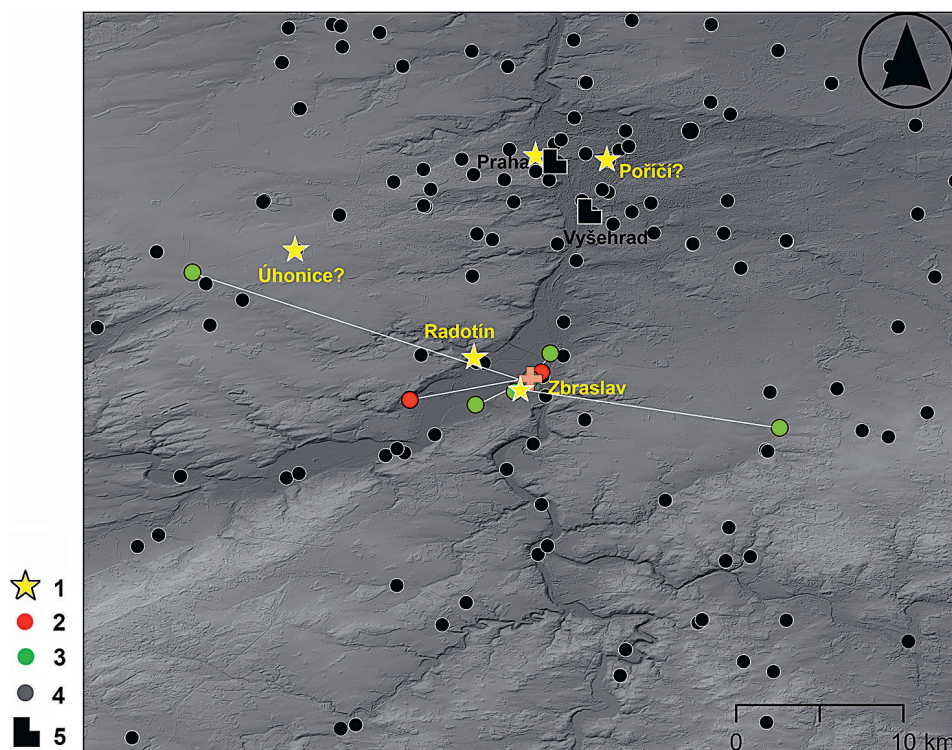


Fig. 3. Documented and potential ducal manors in the vicinity of the Prague agglomeration in written sources from the 11th and 12th centuries. 1 – manor; 2 – entire villages belonging to Zbraslav and the Church of St Gall; 3 – parts of villages or individual servants belonging to Zbraslav and the Church of St Gall; 4 – other settlements documented in written sources until around 1200 (graphics by D. Václavíková and I. Štefan).

have existed at the nearby Vyšehrad. A princely estate at Radotín (*curia mea Radotyn*) was about 12 km from Prague Castle (CDB I, no. 375, 348: *Friedrich 1904–1907*). Directly across the Vltava, the village of Zbraslav along with the nearby Church of St Gall were donated to the Kladrby monastery ‘with everything that belongs to it’. This record is followed by a list of several whole villages with fishermen and other dependants (CDB I, no. 390, 396–397; no. 405, 429: *Friedrich 1904–1907*). Evidently, this too was an additional manorial estate (*Petráček 2017*, 143). Both locations were situated on the banks of the Vltava River, which significantly reduced the transaction costs associated with transporting commodities to Prague. Other references are less explicit, yet they very likely point to a further autonomous economic centre at Poříčí, perhaps also at Rybník, from which the ruler granted Břevnov a tithe on agricultural production and a plot for the construction of barns and a mill (CDB I, no. 375, 348: *Friedrich 1904–1907*), as well as at Úhonice. Here, a detailed enumeration lists sixty-six men with no specified obligations and only a single female servant (CDB I, no. 156, 161: *Friedrich 1904–1907*). Further sizeable manorial estates were subsequently established on properties at the metropolitan fringe by ecclesiastical institutions and the secular elite (for an overview, see *Štefan 2024*, 89–94).

The available written sources for key castellany centres allow us to envisage zones of ducal property in their immediate vicinity. At the same time, however, they make clear that landholding even within these zones was far from uniform, and that the ‘hinterland’ cannot be reduced to a simple ring of settlements. The organisational backbone of the agrarian economy consisted above all of manorial estates (*curiae*), where production and renders were gathered, and which could operate both at the centres themselves and beyond them (see map *Škvřák – Janovská in press*, obr. 9). In the better-documented cases, the sources refer to their unfree personnel as well as to nearby settlements tied to these estates. The Prague evidence, in particular, suggests that princely agrarian provisioning extended to considerable distances from the metropolis and that its operation already required second-order nodes.

From a general perspective, it appears that the catchment area of agricultural manorial centres in the Early Middle Ages was around 8–10 km, i.e., a two-hour walk. Beyond this boundary, it was no longer possible to organise work directly, but this did not preclude the seasonal collection of surplus. Model 1 could therefore take the form of a local catchment area or a multi-level network. It would be appropriate to consider this question in the case of Great Moravia. In Central Bohemia, the network of fortified centres of the first Přemyslids was so dense that it was probably not necessary to add second-order centres (cf. *Fig. 4*). This became necessary after the complete restructuring of the entire system in the 11th century, when larger centres were abandoned in favour of the Prague agglomeration (*Štefan 2014*, 59ff.).

Model 2: Early medieval agglomerations as self-sufficient settlements oriented towards primary agricultural production

Before we delve deeper into the autarkic model, let us recall two well-attested analogies from economically more complex societies: even in Greek poleis and Roman towns, a substantial share of the inhabitants were farmers cultivating their own land outside the walls (*Hansen 2006*, 90–91; *Erdkamp 2015*, 185–186). Strong links to household cultivation and peri-urban land persisted in European towns of the High Middle Ages and the Early Modern period. The founding privileges regularly included large plots of land around towns (*Hoffmann 2009*, 134–135; *Isenmann 2014*, 672–676; *Klír 2020*). Can we, then, under the far simpler conditions of the Early Middle Ages, really assume a massive dependence of large segments of the population on food supplies from outside?

As far as the material evidence is concerned, a strong argument, in my view, is provided by the distribution map of fortified centres within the relatively small region of Central Bohemia in the early Přemyslid period (late 9th to 10th century). The mean distance between the principal centres was c. 10–15 km, which would imply an ‘ideal’ catchment for each of only about 20–40 km² (*Fig. 4*). If we accept a rough estimate of 22,000 inhabitants for Central Bohemia in this period and, for the ten largest centres (including Prague, which was certainly several times more populous), assume an average of 400 permanently resident inhabitants, we arrive at some 4,000 individuals living within fortified enclosures. This would amount to almost one fifth of the total population (see further *Štefan 2024*, 52).

For comparison, we may consider the sophisticated subsistence models developed for the La Tène oppidum of Staré Hradisko: at an estimated population of 800–1,500, it would

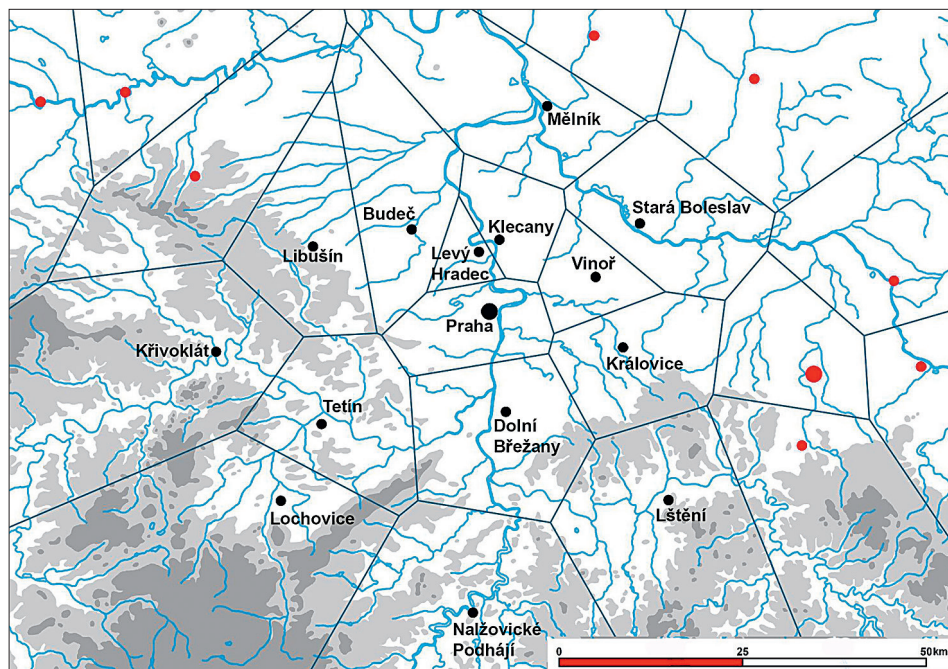


Fig. 4. Fortified centres founded c. 880–950 in the region around Prague with potential ‘hinterlands’ (graphics by I. Štefan and J. Hasil).

have required external provisioning for roughly 369–2,213 households, or 112–671 community settlements (*Danielisová – Hajnalová 2014*, 422). Therefore, a fully consumption-based model seems unlikely for the Central Bohemian centres, given the small size of ordinary rural settlements. On the contrary, all hillforts of the period under discussion had sufficient land in their immediate surroundings for their own potential economic production, without conflicting with the requirements of neighbouring rural communities (cf. *Neustupný 2024*, Fig. 3, 13–16). I thus lean towards the conclusion that at least part of the population of centres must have lived off their own production, cultivated on fields and pastures in the vicinity of the hillforts (similarly *Mařík 2009*; *Dresler 2016*).

In Central European historiography, the notion that elites and the administrative apparatus were fully dependent on the redistribution of ducal renders has deep roots and has become one of the cornerstones of the model of the so-called ‘Central European-type state’. Yet the corpus of written sources suggests that the ruler was not able, over the long term, to sustain even relatively small ecclesiastical communities from his revenues alone. Already at the moment of their founding, he routinely granted them, alongside a share in various dues, rents, and tolls, landed property together with the people settled upon it. These farmers (*rustici, aratores*), often at considerable distances from the seats of ecclesiastical institutions, constitute the largest category among the donated persons (*Kalhous 2018a*, Tab. 11).

If we set aside the hagiographic notice of a retainer Hněvsa possessing his own estate at Stará Boleslav in the 930s (*První staroslověnská legenda o sv. Václavu: Králík 1969*, 56), the silence of the sources is only broken by Cosmas’s story of the castellan of Bílina,

set in the 1060s, who built and furnished his own church in the suburbium beneath the stronghold that presupposes his access to private landed resources (*Cosmas, Chron. Boem. II, 19: Bretholz 1923*). At other castellany centres in Bohemia, we can identify further examples of proprietary churches founded by elites (*Klápště 2012, 46–58*). A crucial issue in this discussion, therefore, remains the interpretation of the term *beneficium*, which apparently referred to landed property attached to centres and granted in usufruct to their administrators (*Jan 2009; 2019*).

Macháček repeatedly invokes the example of Cosmas's Mstíš in attributing the social status of those buried around the turn of the 9th and 10th centuries inside the rotunda in the north-eastern outer bailey at Pohansko near Břeclav: '*This man was likely in possession of some landed property and real estates, possibly the curtis in the suburb, but certainly the church in which he was buried himself.*' (*Macháček et al. 2016, 212–216; Macháček 2019, 195*; to Great Moravian nobility see also *Antonín 2026*). Comparable churches in close association with centres are also known from the other most important Great Moravian sites, where they are likewise most often linked to the manorial estates (*curtis*) of early elites (*Galuška 2010; Poláček 2010; 2020*). If we accept this social interpretation, it is highly likely that the subsistence of a substantial part of the elite was secured through agrarian estates managed in their own right, worked by unfree members of their *familiae*. This again implies a variegated mosaic of holdings owned – or at least cultivated – by different communities. Unfortunately, written evidence only becomes more abundant in the course of the 12th century (*Klápště 2012, 46–58; Štefan 2024, 82–86*).

This solution, in turn, points towards a Western European manorial system, albeit one that existed in a range of regional variants (*Rösener 1989; Wickham 1995; Verhulst 2002, 31–60*). If the spatial distribution of private churches is taken as a primary proxy for 'nobilification' in Central Europe, the earliest evidence suggests that noble estates were concentrated above all in the vicinity of major centres. These zones may initially have marked localised enclaves of a new regime of property and rights, which only gradually extended into the wider landscape.

Model 3: Agglomerations as local markets with agricultural commodities

The role of markets and commercial ties in ancient and early medieval economies has been among the intensively debated questions of past decades (cf. *Smith 2004; Wickham 2005; Feinman – Garraty 2010; Skre 2016*). The issue was discussed in Central Europe for a long time without an adequate methodological framework. A major impulse came with Macháček's intervention, when he raised the question of the socio-economic complexity and political integration of Great Moravia. He concluded that Great Moravia did not meet the criteria of a state and was closer instead to an advanced (cyclical) chiefdom. His argument draws primarily on the neo-evolutionist framework associated with *Hodges (1982)*, inspired by the substantivist approach, which emphasised an 'embedded' economy and questioned the role of markets and commercial exchange in pre-industrial societies. One of Macháček's key arguments was the absence of coin circulation in Great Moravia's internal exchange; without it, he maintained, internal mobilisation would not have been possible. The cohesion of internal relations was instead to be provided by a gift-giving economy typical of chiefdoms (*Macháček 2012, 780–781; 2015, 468–473*). Under the influence of substantivism, I initially endorsed this view as well (*Štefan 2011*), but I later

revised it in favour of the existence of exchange in everyday products, which could have operated based on so-called commodity money. I proposed applying the concept of ‘separate spheres of exchange’, i.e. frameworks within which objects of comparable value and social prestige were exchanged through different mechanisms (Štefan 2014, 155–163). The debate was subsequently shaped in important ways by Hlavica and Procházka who – supported by a stronger theoretical background – also advocated a return of the market to the agenda. Their arguments draw above all on analyses of distribution patterns in pottery and axe-shaped bars, which they identify as non-monetary currencies (Hlavica – Procházka 2020; Hlavica et al. 2022).

Cross-cultural comparisons suggest that we would be hard pressed to find an agrarian society in which market exchange in everyday goods was entirely absent. Even modest forms of regional specialisation, or the concentration of particular skills, create the conditions for supply and demand (see the general literature cited above). I therefore think we no longer need to grapple with the binary dilemma of ‘market exchange – yes or no’. Rather, we should seek to reconstruct its significance and functional reach: whether it amounted merely to marginal barter in surpluses, or whether it constituted a regular channel carrying a more substantial share of provisioning for centres as well as ordinary households, and of the everyday flows between them.

In Moravia, the Raffelstetten toll tariff of 904–905 attests the existence of a stable market-place (or several such places), to which, among others, small-scale Bavarian salt traders, who were bringing a commodity not available locally, were expected to travel regularly along the Danube. A Moravian market is also mentioned in the less reliable Anonymous Arabic account (*Magnae Moraviae fontes historici* IV, 114–119; Havlík et al. 1971; Třeštlík 1973). In Bohemia, the existence of a major market in Prague, where agricultural commodities also circulated and payment was made in a local currency of small linen cloths, is famously described in Ibrāhīm ibn Ya‘qūb’s account from the 960s. The presence of markets at all major strongholds, presumably on a weekly rhythm, is further indicated by the various shares in tolls and market dues granted to ecclesiastical institutions in the 11th and 12th centuries. Markets and tolls, which until the 12th century remained under the ruler’s privileged control, evidently constituted a non-negligible source of income (Klír – Štefan 2025). Markets could be exploited in a straightforward manner even in non-monetised or only weakly monetised societies. An entry in the foundation charter of the abbey of Tihany in Hungary (1055), for instance, records that King Andrew I granted the abbey the market toll (*mercati tributum*) from Veszprém, paid partly ‘in cooking vessels, food, pails, and all ironmongery (tools)’ (Weisz 2018, 425). Comparable practices of collecting tolls in kind are also suggested by the Litoměřice toll tariff (e.g. ‘grnecne’: CDB I, no. 383, 363; Friedrich 1904–1907).

I believe that the absence of coin circulation cannot be used as an argument for the absence of market exchange as such. The interpretation of iron axe-shaped bars as local currency tokens of Great Moravia is now based on solid arguments (Hlavica et al. 2022). We can attribute the same role to the cloth scarves mentioned for 10th-century Prague by Ibrāhīm ibn Ya‘qūb’s account and Rani tribe in the early 12th century (Klír – Štefan 2025).

Archaeology has tended to assign exceptional indicative value to the distribution patterns of pottery when assessing the scale of exchange in everyday goods. I consider it highly plausible, both in Moravia and in Bohemia, that the distribution zones of distinctive regional vessel types corresponded to particular market circuits centred on the major

sites. Such circuits can be identified for the 9th and 10th centuries in both Moravia and Bohemia (Varadzin 2010; Hlavica – Procházka 2020, 79–81). Nevertheless, I agree with Macháček that the current corpus of evidence for identical marks on vessel bases, indicating production in the same workshop, remains too limited in Moravia to serve as a convincing basis for assessing the intensity of exchange between centres and the countryside (Macháček 2026, 117–118).

The distribution of salt must have been of exceptional, society-wide importance. In the context of a decentralised economy without real bureaucracy, it is difficult to envisage its transfer across the whole of society by mechanisms other than market exchange. Alongside salt, the main items exchanged between centres and rural communities were likely to have been everyday craft products requiring access to constrained raw-material sources or specialised technologies, yet carrying little in the way of overt social signalling. One might envisage a basic and indispensable set of iron tools, leather and textile products, quernstones, and perhaps also simple weapons and ornaments in copper alloys, as well as glass beads – items that form a routine component of inventories at rural cemeteries. Evidence for this range of productive activities is overwhelmingly concentrated at strongholds.

I suggest that the growth of a limited commercial sector was driven above all by the concentration of craftspeople at major centres, working either under dependent conditions or in freer arrangements to meet elite demand. Production beyond the renders or commissions owed to their patrons could then be exchanged on local markets for agricultural goods obtained from the surrounding rural population. I therefore see no need to posit a fundamental contradiction between a craftsperson's dependent status and their participation in market relations (for Bohemia Tomas 1983, 77–78; in general, Costin 2005, 1072).

Despite the undeniable existence of markets, I would argue that the written evidence for the complex material provisioning of ecclesiastical institutions in 11th- and early 12th-century Bohemia broadly supports Wickham's view that the Early Middle Ages were not a period in which exchange structures were sufficiently reliable to eliminate most existential risks and to abandon subsistence production organised on one's own account (Wickham 2005, 699). In terms of the overall degree of commercialisation, Great Moravia and Bohemia in the 10th to 12th century can most plausibly be placed within Smith's ideal category of '*economies with low commercialisation*', which '*have limited marketplace distribution of goods and services, but land and labour are not commodities. Government control of many sectors of the economy is strong, but typically a small independent commercial sector of merchants and marketplaces does exist. These economies are often of limited spatial scale*'. Such economies are typically characterised by solar and dendritic marketing systems (Smith 2004, 79).

The development of markets was a dynamic process shaped by a range of internal and external factors. One important stimulus was undoubtedly the gradual monetisation of taxation, which was arguably underway in Bohemia by the 11th century, whereas in Poland it is usually argued only in the 13th. It would have compelled regular participation in market exchange across social groups (Klápště 2012, 351–358; Guzowski 2021, 101).

The organisation and the provision of security for markets and merchants formed one of the important roles of the early medieval ruler (and potentially of other elites). For access to certain commodities, a functioning market was indispensable, yet markets also fulfilled significant social roles. The ruler's capacity to guarantee the market and to 'draw in' exchange from a wider region was undoubtedly a visible marker of prestige and reach.

When it comes, however, to provisioning the inhabitants of early medieval centres in the 9th and 10th centuries, I do not consider markets to have been the principal channel through which staple foodstuffs moved from producers to consumers on a regular and predictable basis.

Model 4: Long-distance transfer of commodities and taxes in kind

We should add one further option to the range of subsistence variants proposed by Macháček. Early medieval societies were evidently capable of organising the regular and reliable transport of staple commodities over long distances, despite high transport costs, even before the emergence of internally integrated states. *Naylor's (2016)* category of the subsistence hinterland extends this perspective into archaeological interpretation on a disconcertingly broad spatial scale – one that, inevitably, also bears directly on how we read palaeobotanical and archaeozoological evidence.

From the very outset of the Frankish expansion eastwards, the sources record the levying of tributes payable to the Frankish realm, which in aggregate must have constituted a non-negligible source of revenue. In the pre-monetary societies on the eastern periphery, these payments were typically rendered in livestock or horses (*Reuter 2006*, 231–250). According to Einhard, Charlemagne compelled not only the Czechs but also the Veleti, Sorbs, and Obodrites to pay tribute (*Einhard, Vita Karoli Magni*, 18; *Waitz 1911*). The chronicler Cosmas attributed the imposition of a traditional tribute, consisting of 120 selected oxen and 500 marks of silver, to Charlemagne's son Pippin (*Cosmas*, II: 8). The Moravians had committed themselves to regular tribute payments by no later than 874, in the peace concluded at Forchheim (*Annales Fuldenses*, 82–83; *Kurze 1891*). The collection of tributes from the Moravians – apparently in cattle – is also attested by the letter of Margrave Aribio (*Schwarzmaier 1972*). Such burdens were surely distributed across a number of regional units organised around local elites and hubs. Tribute in kind, as a material manifestation of subordination and loyalty, could moreover serve to materialise power relations among elites not only externally but also within a polity prior to its definitive unification (*Štefan 2026*, 150–157; for the early Anglo-Saxon kingdoms cf. *Yorke 1990*, 9–11, 81, 105). Livestock and agricultural produce could therefore circulate across regions to a significant extent even before the integration of those regions into larger political territories.

Even more complex organisation was required for the collection of the ecclesiastical tithe. In Central Europe, this was introduced, after the initial phase of conversion, already during the 10th century, at a time when the economy still operated almost entirely on staple finance. The issue has recently been analysed well by *Pauk (2024)*. A valuable document is, for instance, Otto I's charter recording the endowment of the newly founded bishopric of Meissen in recently annexed Slavic territory. Tribute (and thus the tithe) from five provinces was rendered in honey, animal furs, silver, slaves, clothing, pigs, and grain (*MGH Diplomatum regum*, no. 198: *Gesellschaft für ältere Deutsche Geschichtskunde 1879–1884*).

In Bohemia, the beginnings of the tithe after the foundation of the Prague bishopric in the 970s remain debated (*Kalhous 2016*). Reliable information is provided by the account of the tithe reform introduced by Bishop Ekkehard of Prague in 1017–1023 (*Cosmas, Chron. Boem.* II. 26; *Bretholz 1923*): ‘*This bishop established that, as a tithe, each person,*

whether powerful, rich, or poor, whether he possessed arable land from his benefice or his allod, would pay the bishop two measures of five palms and two fingers, one of wheat and the other of oats. Previously, as had been established by the first bishop, Thietmar, they gave two stacks (a hundred handfuls) of the harvest as a tithe’ (trans. Wolverton 2001, 104). For Poland, a key source is the charter for the archbishopric of Gniezno of 1136, which likely reflects earlier arrangements. It lists seventeen strongholds from which the metropolitan was entitled to a tenth share of the dues rendered by the population to the duke. Tithes were paid in grain, honey, iron, pigs, and marten and fox pelts. Comparable practices are, in any case, attested in other Slavic territories (further examples in Pauk 2024). Until the emergence of small parishes, tithe collection was evidently organised through the stronghold-based administrative system, by earmarking a portion of the dues owed by the free population.

Written sources of the 11th and 12th centuries allow us to trace complex transregional redistributive networks through which cattle, grain, honey, textiles, and slaves were moved, among other things. The principal fiscal institutions were strongholds, where a wide range of goods in kind was assembled from the surrounding provinces; these may be understood as an early form of taxation levied on the free population. The granaries, stables, and storehouses of the central manorial estates must in any case have possessed extraordinary capacity, yet none of them has been excavated to date.

A key junction of these networks within the Bohemian principality was the economic court situated somewhere in the vicinity of Prague Castle, which the Vyšehrad forgery refers to as a *curia* (CDB I, no. 393, 405: Friedrich 1904–1907). It was headed by a steward (*villicus*), who thus occupied one of the most crucial economic posts in the Přemyslid polity. Under his authority served specialised officials, including the cellarer, the master of horse, and a woman referred to as an *avia*, responsible for organising the production and distribution of clothing and textiles. From the 11th century onwards, the Prague ‘central office’ received both in-kind revenues collected in the provinces and monetary dues and tolls – that is, a combination of staple and wealth finance. The creation of this institution may, however, have had deeper roots, perhaps building upon older practices of collecting tribute from territories that were then only loosely controlled.

The Vyšehrad Chapter, for example, was to receive annually from the Prague *villicus*, among other items, ten sheep delivered as far away as the Netolice (115 km) and Doudleby (130 km). The chapter was also granted the tenth denarius from market fees, the tenth sheaf of grain, and the tenth bull from the province of Dřevíč (45 km), and, in addition, from the collector of pigs the tenth sack of salt. The canons further received a shepherd with eight shares of land, together with a hundred sheep and six cows at Čachovice (45 km), a herd of mares at Ouholice (27 km), and a vineyard at Žitenice (58 km) (CDB I, no. 111, 111–115: Friedrich 1904–1907). A real logistical challenge must have been the annual transfer of 16 oxen from distant Moravian castles, which were to be used ‘to restore the chapter’s farmland’ in Stará Boleslav (CDB I, no. 382, 361: Friedrich 1904–1907; cf. Fig. 1).

Foodstuffs and livestock did not necessarily have to pass through the Prague ‘central office’. The chapter at Stará Boleslav, for instance, received the tenth sheaf of grain and a tenth share ‘of all animals, small and large, that are raised there, from all fields belonging to the strongholds of Žatec [80 km] and [Mladá] Boleslav [28 km]’ (CDB I, no. 382, 361: Friedrich 1904–1907). Alongside such arrangements, ecclesiastical institutions were

also routinely granted only small fragments of the settlement network, often at distances of many tens of kilometres. Sometimes these were entire villages, at other times merely individual dependent servants residing at them. How such dispersed fragments of domains were administered, and how effectively they could be exploited economically, remains entirely unclear. In any case, the Prague centre (and through it the endowed ecclesiastical institutions) obtained agricultural produce quite routinely from very distant areas, even though transport costs must have been extremely high. One advantage of such arrangements was the dispersal of risk within an inherently vulnerable early medieval agrarian system. This dispersed pattern of holdings was also common in Western Europe (e.g. *Meier 2009*).

How far back did the roots of the levy known as the *tributum pacis* – a tax paid annually ‘per plough’ by the entire free population – extend in Bohemia remains unknown. By the early 12th century at the latest, it was reliably collected across all of Bohemia in the amount of twelve denarii (*Žemlička 1997*, 165). According to *Smetánka’s* (2010, 182) estimate, this sum was roughly equivalent to one sheep or twenty chickens. Whether Great Moravian rulers exercised territorially comprehensive control over their *regnum*, and were therefore capable of a similarly systematic fiscal extraction, also remains unclear. Drawing on *Třeštík’s* authoritative judgement, *Macháček* assumes that they did not (*Macháček 2015*, 476–477). It is nevertheless worth asking what, precisely, financed the operation of the Moravian bishopric during *Methodius’s* episcopate.

We also need to consider these issues in a broader perspective. If we accept that Great Moravian centres were capable of organising the large-scale transport of raw ore from distant mining areas (*Lebsak – Kapusta 2024*), or quarrying of building stone for the Pohansko fortifications in the Mikulčice hinterland (*Macháček et al. 2007*, 305), we cannot *a priori* rule out seasonal movements of durable foodstuffs over longer distances either, especially where transport costs were reduced by access to navigable rivers, on which all major hillforts were situated. These considerations further weaken any mechanical understanding of the economic hinterlands of early medieval centres as merely their immediate catchment region.

Conclusion: Provisioning as a strategic patchwork

There is no doubt that, unlike today’s scholars, the Early Middle Ages did not follow the blueprints of ideal production-consumption models. Contemporaries were forced to make fuzzy choices between different economic strategies. The limiting social framework for the functioning of long-term sustainable mechanisms for securing the elites was specific property relations, which were strongly conservative. *Polanyi’s* reduction of forms of exchange to three categories (reciprocity, redistribution, market) is so schematic that, without further elaboration, it proves to be an analytically unproductive tool (cf. *Feinman – Garraty 2010*, 45–47).

Even *Krzemieńska* and *Třeštík*, as one of the main proponents of the concept of a ‘Central European type of state’, faced the problem of identifying the parallel existence of several distinct modes of elite provisioning in 11th- and 12th-century written sources (cf. *Krzemieńska – Třeštík 1978*). All participants in the ongoing heated debate on the socio-economic matrix of early medieval states generally accept the parallel existence of various

forms of economic organisation, but they disagree on which mode of production was dominant in Central Europe and where to look for its origins. The important debate on strategies for supplying the Great Moravian agglomerations, opened by Macháček (2026), can thus be understood as a continuation of the Central European discussion, but conducted mainly on the basis of archaeological and paleoenvironmental evidence set within schemes adapted from economic theory and cultural anthropology.

I find a certain methodological contradiction in the fact that, on the one hand, Macháček acknowledges that ‘*various forms of distribution of material goods (market, redistribution, reciprocity) exist in parallel and are not mutually exclusive*’, but ultimately strongly advocates the existence of a single correct solution. According to him, this was the prevailing subsistence dependence of Great Moravian agglomerations on food supplies from the surpluses of surrounding agricultural communities. Denying the importance of market exchange and the predominance of redistributive mechanisms is an important argument for his vision of Great Moravia not as a state but as a complex chiefdom, following the simplified scheme of chiefdom equals redistribution, state equals market). The degree of commercialisation is, of course, an extremely important variable, but it was probably only indirectly related to the degree of social integration (cf. *Smith 2004*). Let us mention the economy of ancient Egypt, based on pervasive redistribution, and, conversely, the decentralised La Tène society in Central Europe with its developed monetary exchange.

We have shown that even pre-state societies were able to systematically extract agricultural surplus and transform it into political power. The supply of food to centres from nearby, more distant, and very distant agricultural settlements is an indisputable fact based on written sources from the 11th and 12th centuries. However, behind this stood a number of different socio-legal mechanisms that are difficult to distinguish archaeologically. Sources mention fixed taxes and levies from the free population in kind, but also the production of serfs on *curtes*. Some sources also indicate that food supplies from the countryside, mediated by kinship networks, may have played an important role for the underprivileged inhabitants of the centres.

In my opinion, it is very likely that a significant portion of the underprivileged population of the centres was involved in the direct production of food on the surrounding land. However, this was probably not some kind of spontaneous ‘hippie’ farming. The organisational hubs of agricultural activities seem to have been the manorial estates of the ruler and other elites. The work of the unfree servants of the *familia* was most likely also secured by the prestigious line of builders of the rotunda in the northeastern outer bailey of Pohansko near Břeclav. Nonetheless, I find the ‘revisionist’ shift towards complete autarky of the centres (*Dresler 2016*) problematic, as it is based on less convincing arguments and does not take into account the settlement patterns identified in the vicinity of nearby Great Moravian centres.

As far as trade on the market is concerned, I consider its existence in Great Moravia and Bohemia since at least the 10th century to be unequivocal. The question, however, is the degree of commercialisation of society, which could have undergone dramatic situational fluctuations (wars, crop failures). In the long-term perspective, it undoubtedly increased in Bohemia as a result of monetisation. Nevertheless, I do not regard marketplaces as having played a decisive role in provisioning major settlements before late 12th century. The basic reason is structural: the volume and regularity of consumption of basic foodstuffs by stable groups required a more reliable and better controllable mechanism than occasional

exchange. This view is supported by the complex structures of donations to church institutions in written sources from the 11th and 12th centuries from the monarch's property. Although the documents also mention market exchange, the main burden of supply was based on the extraction of surplus in kind. I believe that the market then functioned more as a supplement. It balanced out short-term fluctuations, enabled the exchange of surpluses, and provided necessary specific commodities and handicrafts. Strict control of craft production, especially for everyday products without a significant social signal by the elites, is, in my opinion, highly unlikely.

The impressive large-capacity grain silos discovered near Pohansko and Mikulčice were undoubtedly connected to the economy of these centres. However, it seems easy to fall into them (see various interpretations: *Curta 2009*, 36; *Dresler 2016*, 22–26; *Látková 2017*, 105; *Hladík 2020*, 295–296; *Macháček 2026*). I believe that archaeology and archaeological sciences should take all of the aforementioned variants of exchange into account when interpreting their data. Rather than seeking a single, definitive answer, it seems more productive to ask under which socio-economic conditions and at what scale particular forms of exchange could operate.

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BOOK REVIEW – RECENZE

Jan Kysela – Petra Goláňová – Tomáš Mangel – Jan Mařík (eds.): Reflections of the Iron Age. Studies dedicated to Natalie Venclová. Institute of Archaeology of the CAS, Prague – University of Hradec Králové – MUNI Arts – Faculty of Arts Charles University, Praha – Brno – Hradec Králové 2026, ISBN: 978-80-7581-063-2, 640 pages.

It is rare for a researcher to be honoured with a second *Festschrift*, but as this volume makes clear, Natalie Venclová is a rare kind of researcher. Over the course of six decades, her research has expanded our understanding of a range of topics, not only for Czech Iron Age archaeology but, in many cases, at a European scale also. The contributions to this volume reflect the breadth and depth of research topics that she has examined in her ongoing career. One of the most notable things about this volume is the wealth of new discoveries. *Festschriften* have developed a (not entirely baseless) reputation over the years as being a place where papers that could not otherwise be published are allowed to be printed. As a former professor of mine once remarked a '*Deadschrift*'. This is certainly not the case here. Several of the papers present newly discovered finds, in some cases of national significance. Additionally, the positive role that Natalie Venclová has played in the careers of many of the authors is apparent from the dedications and words of thanks found in several papers.

This is a substantial publication, with 34 papers split across four chapters. Although this volume is dominated by Central European archaeology (Bohemian, Moravian, Slovakian, and Polish), all of the contributions are in English. This will no doubt prove useful in helping to spread understanding of Central European Iron Age archaeology to the (increasingly monoglot) Anglosphere. This wealth of information is also available at a very reasonable price of 830 CZK (€34.26) which works out at a mere 0.65 CZK per page (well below a cent).

There is no overriding theme which unites the papers, nor does this volume make any claim to offer a paradigm shift in Iron Age archaeology (although individual papers do offer some very interesting and thought-provoking insights). Rather, it is an exhibition of new discoveries, theoretical perspectives, and methodological approaches. Nevertheless, the editors have attempted to create a sense of narrative from the various contributions. Chapter I, titled *From Materials to Objects*, is dedicated exclusively to small finds, whilst Chapter IV, *From Regions to Landscapes*, is, as the name suggests, concerned with archaeological landscapes. Chapter II, *From Objects to People*, and Chapter III, *From People to Regions*, seek to create a logical progression from Chapters I to IV. The approach is not always successful. However, this is due to the challenge of categorising submissions with a variety of approaches and topics, rather than any failure on the part of the editors. Likewise, the editors are to be commended for the inclusive nature of this volume, which contains submissions from both long-established, renowned researchers (Vincent Megaw, Pavel Sankot, Anthony Harding) and young, up-and-coming colleagues (Leona Kohl, Carole Quatrelièvre) among others.

As noted, and as is to be expected from a *Festschrift* which honours Natalie Venclová's work, the geographical focus of the papers is primarily Central European. Nevertheless, the geographical scope extends as far west as the Paris Basin (Carole Quatrelièvre and Oliver Nakoinz) and south to the Adriatic (Boris Kavur) and Romania (Mariana Egri and Aurel Rustoiu). A few papers, such as Anthony Harding's survey of Bronze Age faïence beads (Chapter I) and Jan Kysela's study of La Tène hilts (Chapter II), are noteworthy for their international scope. This volume will be especially welcomed by glass specialists, with seven contributions dedicated to glass-related topics. Ceramics (four papers), numismatics (three), and brooches (three) are also well-represented. Rather than review the contributions on a chapter-by-chapter basis, it is more efficient to consider them thematically, starting with glass and faïence.

Anthony Harding's paper on Early Bronze Age faïence (Chapter I) provides an excellent, international review of the evidence for these artefacts. Crucially, it underlines that faïence was produced locally in Central Europe and not, as once theorised, introduced from the eastern Mediterranean. Jan John and Ondřej Chvojka's paper on Late Bronze Age glass beads from Břežnice (Tábor distr.; CZ) offers a detailed overview of new finds, demonstrating that beads from cremation burials at the site likely had different geographical origins. In Chapter II Jana Matzerová and colleagues discuss a fascinating discovery: a Phoenician head-shaped pendant from Prague-Radotín (CZ). As the authors note, the presence of a potentially 4th century BC Mediterranean import to Bohemia raises new questions about long-distance contacts during this period. Malwina Urák's review of Haevernich's Group 8E glass bracelets in the same chapter is an excellent example of the role which typological studies still have to play in archaeology. This is a paper which clearly adds to recent work on glass bracelets by *Rolland (2021)*. As someone with an Atlantic research focus, I particularly enjoyed Urák's discussion surrounding the discovery of the bracelet from Brech (dep. Morbihan; FR).

Tereza Jošková (Chapter III) considers the evidence for La Tène B–D glass jewellery from Pardubice and Chrudim (CZ). Here, a unique find is also presented: a fragmentary group 3c bracelet from České Lhotice (with a wonderful footnote about the risks of archaeologists selling reproductions of their work near archaeological sites). A concise, but no less interesting, survey of glass finds from southwestern Slovakia is also offered by Gertrúda Březinová and colleagues. In Chapter III Maciej Karwowski examines glass ornaments from the production centres at Etzersdorf, Haselbach, Ronthal, and Roseldorf (AT). The patterns identified here, especially with regards to the main phases of glass production at these sites in La Tène C1b and La Tène C2, will no doubt be of interest to those examining glass production, urbanisation processes or other patterns of manufacture in Central Europe (e.g. *Thér – Mangel 2024*). In the final paper discussing glass, Boris Kavur provides some thought-provoking conclusions about production and trade by considering Early Iron Age glass beads with prunts.

The ceramics papers begin with Radoslav Čambal's preliminary report (Chapter I) on La Tène Period finds from Tvrdosovce (Nové Zámky distr.; SK). This includes a charming find of a La Tène C1/C2 anthropomorphic ceramic handle with stamped decoration. Irena Ostrá and Karel Slavíček's discussion of a late La Tène painted vessel from Hněvotín (Olomouc distr.; CZ) proposes the intriguing possibility that it was produced locally, and not at the nearby oppidum of Staré Hradisko. Tomáš Mangel and colleagues (Chapter II) offer a detailed and fascinating discussion of a horse (or donkey) graffito on a sherd from Čistěves (Hradec Králové distr.; CZ). Building upon *Venclová's (2018)* study of zoomorphic motifs on La Tène pottery, the authors highlight the dynamic nature of zoomorphic graffito during the Late Iron Age. In Chapter III, Mariana Egri and Aurel Rustoiu combine ceramics, typological studies and a discussion of inter-regional contacts when reviewing *krater*-shaped vessels from Dacia. At first glance, this paper appears to be a straightforward typological study, but the authors effectively demonstrate the multiple, interregional origins of these vessels and thereby pose new questions about how we understand contacts and cultural exchanges in South-Eastern Europe.

Metalwork is well represented, with brooches being the most common theme. Joanna Ewa Markiewicz and colleagues' comments (Chapter I) on use-wear analysis on copper-alloy small finds from Nowa Cerekwia (Głubczyce distr.; PL) will no doubt be a welcome reference source for any researchers examining object biographies, especially fibula brooches. In Chapter II, Vincent Megaw and András Márton offer a story and origin for an early La Tène fibula brooch in the Louvre Museum's Campana Collection (in true Megaw style). Moving from the past to the present, Karol Pieta introduces new finds of zoomorphic brooches from Udiča (Považská Bystrica distr.; SK). This includes a beautiful example of a *Maskenfibel*, which in future years will almost certainly come to be recognised as one of the finest representatives of this group. In Chapter III, Viktoria Čistáková and colleagues introduce new late Hallstatt and early La Tène brooches from Central Bohemia with comments about the local and interregional significance of these finds.

Weaponry is also represented, with both Pavel Sankot and colleagues and Tomasz Bochnak (Chapter I) demonstrating the value of consulting museum collections, in this case La Tène and Tyniec group weapons, respectively. Marko Dizdar's study of late La Tène Scordiscan buttons provides a thorough and detailed overview of these objects and serves as an excellent reference paper for future studies. The metalwork papers also include two of the most striking discoveries (Chapter II). These are Przemysław Dulęba and Jacek Soida's presentation of a copper-alloy finger-ring from Samborowice (Pietrowice Wielkie distr.; PL) and David Vích and colleagues' discussion of new discoveries of two *Kronenhalsringen* from the border of Bohemia and Moravia. The Samborowice ring was decorated with a double-omega pattern, well-attested from Central Europe, but also finding echoes as far west as Britain (Jope 1996). The *Kronenhalsringen* belong to a Scandinavian tradition, and offer a fascinating contribution to the evidence for contacts between Northern and Central Europe in the La Tène Period (e.g. Martens 2023).

In contrast to other themes, all of the numismatic contributions are collected in Chapter III. I will readily admit that my knowledge of Iron Age numismatics in Western Europe is bad. My understanding of coinage in Central Europe is effectively non-existent. As a result, there is a limit to what I can say on this topic. Marek Budaj and Radoslav Čambal provide a review of the evidence for new finds of coins from Southwestern Slovakia, including some nice associated metalwork. Tomáš Smělý offers a different approach to Iron Age coinage with his analysis of how the monetary system of the Bratislava oppidum functioned, and what this system may tell us about the origins of the ruling elite. Wioletta Pazowska then introduces the Kuyavian coinage group in a brief analysis which demonstrates how Central Poland was not a peripheral region in numismatic terms in the La Tène D phase. Despite the limitations of my own knowledge, I found all three papers accessible and easy to follow.

Papers dealing with landscape studies and social modelling are unique in that they are all in the same chapter: Chapter IV. Leona Kohl begins with a supposedly preliminary analysis ('supposedly' because there is a very high standard of research here) of chronological and cultural variations in Austria's Traisen valley. This valley is central to understanding the early La Tène Period in Eastern Austria. Much of the most important literature on this region is published in German, so an English-language account is very useful for spreading understanding about these sites to colleagues unfamiliar with the extant literature. Carole Quatrelivre and Oliver Nikoinz's paper on Late Iron Age societies in the Paris Basin is equally fascinating. The methodological approach alone (which was pioneered by Carole Quatrelivre in her *Prix européen d'archéologie Joseph Déchelette*-winning doctoral thesis) has much potential. Likewise, the discussions of different social structures will also be of use to ongoing debates about modelling Iron Age societies (e.g. Moore – González-Álvarez 2021). Sabine Hornung continues the theme of dynamic regions and societies by considering the landscape context of Europe's smallest oppidum: the Hunnenring (Otzenhausen distr.; DE). Thanks to her ongoing research at the site, Hornung is able to demonstrate how landscape use and communities changed in the western Hunsrück between the late La Tène and early Roman Periods. A key takeaway from Hornung's paper is the value of supporting long-term fieldwork projects and the discoveries which they can enable. Lastly, Petr Šída and colleagues conclude with a thought-provoking account of how forest-herders in the Bohemian Paradise can be contextualised within the wider later prehistoric North Bohemian world.

Mortuary archaeology is represented by two papers, in addition to Leona Kohl's contribution. Sándor Berecki offers a new interpretation of a La Tène teenager's grave from Fântânele-Livada (Transylvania; RO) as well as a wider survey of the evidence for adolescent graves in the Carpathian Basin. A brief discussion of recent excavations in Plav (České Budějovice distr.; CZ) is provided by Ondřej Chvojka and colleagues, and with it the possibility that a La Tène settlement may be associated with a Hallstatt burial ground.

The remaining papers cannot be placed in one of the above categories. Nevertheless, these include some of the most interesting contributions. Petra Goláňová (Chapter II) examines the evidence for

textile production in Moravia and neighbouring regions by focusing on finds of spindle whorls in graves. Although, as Goláňová notes, the evidence for spindle whorls in graves is limited, she draws on a variety of datasets to construct a very interesting discussion on the often overlooked topic of Iron Age textile production. Immediately after, Jan Kysela, in what must be the most ambitious paper in this volume, conducts an overview of the iconographic evidence for La Tène sword hilts. The breadth of his study, which ranges from the Isles of Scilly in Britain to Palmyra in Syria, is remarkable not just for its scope, but for the fact that Kysela could fit it into a single chapter. Finally, in Chapter III, is perhaps the most unique paper in this contribution: Miloš Hlava's study of the relationship between Josef Ladislav Píř and Innocenc Ladislav Červinka. A contribution considering Czechia's two most important prehistorians of the late 19th and early 20th century appears particularly suitable for a volume honouring Natalie Venclová, as her work (along with other key figures such as Pavel Sankot and the late Jan Bouzek) has played such a key role in later prehistoric Czech archaeology in the last six decades.

On the basis of my own research interests, there are several papers which stand out. The first two are David Vích and colleagues' announcement of new finds of *Kronenhalsringen* and Jana Matzerová and colleagues' paper on the Phoenician head-shaped bead. These papers offer fascinating hints at the degree to which communities in Bohemia were connected with groups to the south and north.

Jan Kysela's review of La Tène hilts demonstrates an envious understanding of interregional data. The same is true of Mariana Egri and Aurel Rustoiu's study of Dacian *krater*-shaped vessels. Tomáš Mangel and colleagues' paper on the graffito sherd from Čistěves stands out not only because of the nature of the find, but also how the authors draw attention to the changing way in which graffito was applied to La Tène ceramics. As someone who has mostly written on mortuary practices, Leona Kohl's discussion of the Traisen valley is another paper that appeals to me. Finally, the methodological approaches discussed by Maciej Karwowski, Carole Quatrelièvre and Oliver Nakoinz could certainly be applied to other regions and data types (and hopefully will be).

In terms of critique, there is very little to be made. It would have been useful if more details were provided on some of the cultural groups mentioned. For example, the Tyniec group is referred to twice, but readers unfamiliar with its characteristics are not informed how the Tyniec group differs from the Przeworsk and La Tène cultures. The counter argument to this, of course, is that (ignorant British) archaeologists should find these things out for themselves! As noted, the editors have attempted to create a coherent structure from such a wide range of papers. At the same time, I am left wondering if this volume would have been better served by being grouped thematically. Even in Chapter IV, which is the most thematically coherent, the structure could have been arranged differently. Petr Šída and colleagues' paper on the Bohemian Paradise would have been better served by appearing at the start of Chapter IV. This would have allowed the chapter to move westward from Bohemia, before concluding in the Paris Basin. Lastly, a useful inclusion would have been a bibliography of Natalie Venclová's work to date, as has appeared in some British and Irish *Festschriften* (e.g. Gosden *et al.* 2007; Cooney *et al.* 2009). These minor points aside, this is an excellent volume, and the editors and contributors deserve much praise for their hard work.

Andrew W. Lamb

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BOOK REVIEW – RECENZE

Ladislav Varadzin – Lukáš Reitingera (eds.): Vyšehrad ve středověku. Archeologický ústav AV ČR, Praha, *Praha 2025*, ISBN 978-80-7581-061-8, 190 stran.

Předkládaná kolektivní monografie představuje významný příspěvek k poznání jednoho z hlavních symbolů starších českých dějin. Publikace navazuje na referáty přednesené na konferenci uspořádané ke stoletému výročí archeologického výzkumu na Vyšehradě a svým záměrem cílí na bilanci i revizi dosavadního bádání. Kniha se pokouší nově promyslet vznik, funkce a proměny Vyšehradu od 10. století do raného novověku, a to v těsném propojení archeologie a historické vědy.

Publikace je rozdělena do tří chronologických celků: knížecí Vyšehrad, královský Vyšehrad a Vyšehrad pozdního středověku. Úvodní kapitola Lukáše Reitingera a Ladislava Varadzina vhodně zasazuje bádání o Vyšehradu do dlouhého historiografického rámce. Autoři sledují cestu od kronikářských a barokních fabulací přes obrozenecké mýtotočnou konstrukce až k pozitivistické kritice a moderní archeologii. Důležité je, že starší tradice nejsou prostě odmítnuty jako omyl, nýbrž analyzovány jako součást historické vyšehradské paměti.

Zásadní význam mají archeologické kapitoly Ladislava Varadzina. V první z nich autor představuje knížecí Vyšehrad jako lokalitu založenou pravděpodobně již za Boleslava I., nejspíše kolem poloviny 10. století. Varadzinova argumentace je přesvědčivá a kombinuje archeologická data s širšími otázkami raně středověké rezidenční kultury. Vyšehrad plnil funkci rezidenčního i mocenského sídla a měl mít důležitou ekonomickou i rituální roli, o čemž svědčí například doklady metalurgie stříbra a zlata, dřevěné auly, opevnění akropole, sakrálních staveb či nezastavěného shromažďovacího prostranství. Vyšehradská akropole je zde tedy prezentována jako prostor schopný soustřeďovat reprezentaci, správu, rituál i produkci cenných kovů. Neméně důležité je Varadzinovo pojetí královského Vyšehradu. Přestavba za Vratislava II. je zde vyložena jako mimořádně ambiciózní projekt, který přetvořil původní rezidenční areál v nejstarší známý kamenný hrad v českých zemích. Románský palác, bazilika, kapitulní zázemí, hřbitov, most i fortifikační systém vytvářely celek, jenž měl sloužit královské sebezprezentaci prvního korunovaného českého panovníka. Výklad se zde vyhýbá starší redukci Vyšehradu na útočiště Vratislava před biskupem Jaromírem (např. *Novotný 1913*, 141–145; *Žemlička 1997*, 98–99). Naopak ukazuje, že šlo o pozitivně formulovaný mocenský program, spjatý s představou královské hodnosti, dynastické reprezentace a sakrální legitimace.

V následující části se Libor Jan zabývá vztahem Vyšehradu k přemyslovskému rodovému mýtu, zejména k tradici lýčených střeviců a mošny Přemysla Otáče. Téma je zásadní, protože spojuje dynastickou legitimitu, historickou paměť a literární obraz českého dávnověku. Právě jejich srovnání by však mělo vést k opatrnějším závěrům, než jaké autor místy naznačuje. Přemyslovský mýtus sotva lze chápat jako pozůstatek stabilní archaické tradice; spíše jde o literární konstrukci, jejíž jednotlivé motivy byly postupně rozvíjeny a nově významově zatěžovány. Kristiánova legenda zná jen stručné jádro pověsti, nikoli lýčené střevíce, mošnu, bílého koně či jejich vazbu k Vyšehradu. Tyto prvky se výrazněji prosazují až u Kosmy, který původní látku přetvořil v dynasticky účinný legitimizační příběh. Pozdější doklady o ukazování střeviců při korunovacích či jejich uchovávaní ve vyšehradském kostele proto dokazují existenci středověké tradice, nikoli autenticitu jejích počátků. Podobně Janovy úvahy o možné výmalbě kaple sv. Jana Evangelisty přemyslovským cyklem a jejím vztahu ke znojenské rotundě zůstávají podnětnou, avšak neprokazatelnou hypotézou. Kapitola je tedy cenná především tím, že prezentuje Vyšehrad jako místo dynastické paměti. Kritické čtení Janova textu však zároveň ukazuje, jak nesnadné je tuto paměť oddělit od literární fabulace a pozdější politické instrumentalizace.

Martin Wihoda v kapitole o prvním českém království navazuje na své předcházející bohaté výzkumy tohoto problému (např. *Wihoda 2004; 2006a; 2006b; 2015*) a zasazuje Vratislavův krá-

lovský titul do širšího středoevropského kontextu. Ukazuje na mimořádnost Vratislavovy hodnosti (která se vymykala říšským i českým zvyklostem) i na praktické limity udělení titulu, který nebyl dědičný, zůstával osobní poctou a jeho interpretace nebyla jednoznačná. Cenná je také kapitola Michala Cihly o románském mostu, která upozorňuje na opomíjenou technickou památku mimořádného stáří a zasazuje ji do kontextu evropského mostního stavitelství. Vyšehradský most zde nevystupuje jako kuriozita, nýbrž jako součást královského rezidenčního a rituálního prostoru.

Lukáš Reitingер se pak zabývá celou řadou problémů vztahu mezi Přemyslovci, Vyšehradem a Pražským hradem. Reitingер právem odmítá příliš ostré protiklady mezi Vyšehradem a Pražským hradem, případně mezi soukromým a veřejným charakterem vyšehradské rezidence. Jeho pojetí duality obou pražských mocenských center patří k nejpodnětější částem knihy. Vyšehrad podle něj nebyl pouhou alternativou ani krátkodobou epizodou, nýbrž jedním z klíčových míst panovnické moci, inauguračních rituálů, vojenské kontroly a setkávání elity. Takový přístup umožňuje lépe pochopit, proč si Vyšehrad podržel význam i tehdy, když se hlavní rezidenční těžiště přesouvalo jinde.

Pozdně středověkou část reprezentuje kapitola Heleny Soukupové o Karlu IV. a dalších Lucemburcích a studie Jiřího Hofmana o podobě Vyšehradu před stavbou barokní pevnosti. Soukupová připomíná, že Karlova obnova Vyšehradu byla součástí širšího ideového programu, v němž se lucemburská vláda napojovala na přemyslovskou tradici. Hofmanova kapitola pak přináší rekonstrukci předpevnostního Vyšehradu, založenou na plánech, ikonografii, archivních dokladech a archeologickém výzkumu.

Celek publikace působí velmi přesvědčivě. Její hlavní síla spočívá v interdisciplinaritě, která zde není deklarací, ale skutečnou metodou. Archeologické nálezy nejsou pouhou ilustrací písemných pramenů a písemné prameny nejsou mechanicky používány k potvrzení archeologických hypotéz. Jednotliví autoři se pokoušejí o dialog mezi různými typy dokladů, přičemž čtenář zpravidla vidí, kde končí jistota a začíná hypotéza. Vyšehrad ve středověku je mimořádně důležitá kniha pro všechny, kdo se zabývají raně a vrcholně středověkými Čechami, přemyslovskou mocí, královskou reprezentací, sakrální topografií a historickou pamětí. Přesvědčivě ukazuje, že Vyšehrad nelze chápat jen jako romantický symbol nebo pozdější národní mýtus, ale jako reálné mocenské centrum, jehož význam se v čase proměňoval a jehož dějiny spoluutvářely politickou imaginaci českého středověku. Kniha zároveň důstojně navazuje na dlouhou tradici vyšehradských výzkumů a otevírá nové otázky, které budou další bádání nepochybně zaměstnávat ještě dlouho.

Martin Šenk

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