TOM MOORE, RALF HOPPADIETZ, HOLGER WENDLING,
AND KATJA WINGER

Considering European Iron Age *oppida* and Comparative Urbanism

The Case of Bibracte and Manching

ABSTRACT The Late Iron Age (second century BC to first century AD) agglomerations in Europe known as *oppida* have long defied easy categorization leading them to be described using various terms, such as proto-urban, rurban, and polyfocal. Despite the diversity of *oppida* many share characteristics, including large open spaces and low-density settlement, which appear similar to a range of other social centres from around the world which also struggle to fit conventional definitions of urbanism. Despite this, discussion of the relevance of such comparison remains limited. Through assessment of the two best investigated *oppida* in Europe (Bibracte, France and Manching, Germany) we explore the nature of the *oppida* phenomenon, the commonalities they share, and how these compare with agglomerations elsewhere in the world.

KEYWORDS *Oppida*; assembly; environs; sanctuaries; trade; low-density urbanism.

Acknowledgements

This paper draws on the research of a variety of colleagues working at Bibracte and Manching to whom we express our thanks.

Introduction

The appearance of the large complexes known as *oppida* (sing. *oppidum*) in Late Iron Age Europe (second century BC–first century AD) represents one of the most fundamental transformations in European societies (Fig. 9.1). Characterized by their huge size, monumental ramparts, and role as social foci, discussion of *oppida* has been dominated by debate over whether they are urban (Collis 1984; Fernández-Götz, Wendling, and Winger 2014; Woolf 1993). Recent discussions have recognized both the usefulness of comparing Iron Age agglomerations to Greek and Roman urbanism (Winger 2017) while recognizing that considering them simply in reference to classical cities is problematic (Moore 2017a). Many of the unusual aspects of *oppida*, discussed further below, such as their scale, low-density, and trajectory of development, has subsequently led to considering them as potentially related to a range of other 'Anomalous Giants' or 'mega-sites' found throughout the global past but which struggle to be defined as 'urban' (Fletcher 2009). *Oppida* have subsequently been considered using concepts such as low-density urbanism, rurban systems, and as assembly places (Fernández-Götz 2019a; Moore 2017a; 2017b; Moore and Fernández-Götz 2022). This allows our under-

Tom Moore (t.h.moore@durham.ac.uk) is Professor of Archaeology at Durham University, UK. His research focuses on the western European Iron Age. He has conducted major research projects on Late Iron Age *oppida* in Britain and France. ORCID iD: 0000-0003-1482-277X.

Ralf Hoppadietz (hoppadietz@uni-leipzig.de) is completing his doctoral research at the University of Leipzig, Germany, and is associate researcher at the Centre archéologique européen, Bibracte in France.

Holger Wendling (holger.wendling@salzburgmuseum.at) is Head of Department of Archaeology and Dürrnberg Research at Salzburg Museum/Keltenmuseum Hallein, Austria. He is associate professor at Munich and Salzburg universities.

Katja Winger (winger@neubukow.de) received her doctorate in pre- and proto-history on the *oppidum* of Manching. She is the director of the museum in Heinrich Schliemann's birthplace, Neubukow, Germany.

BREPOLS PUBLISHERS 10.1484/J.JUA.5.133455

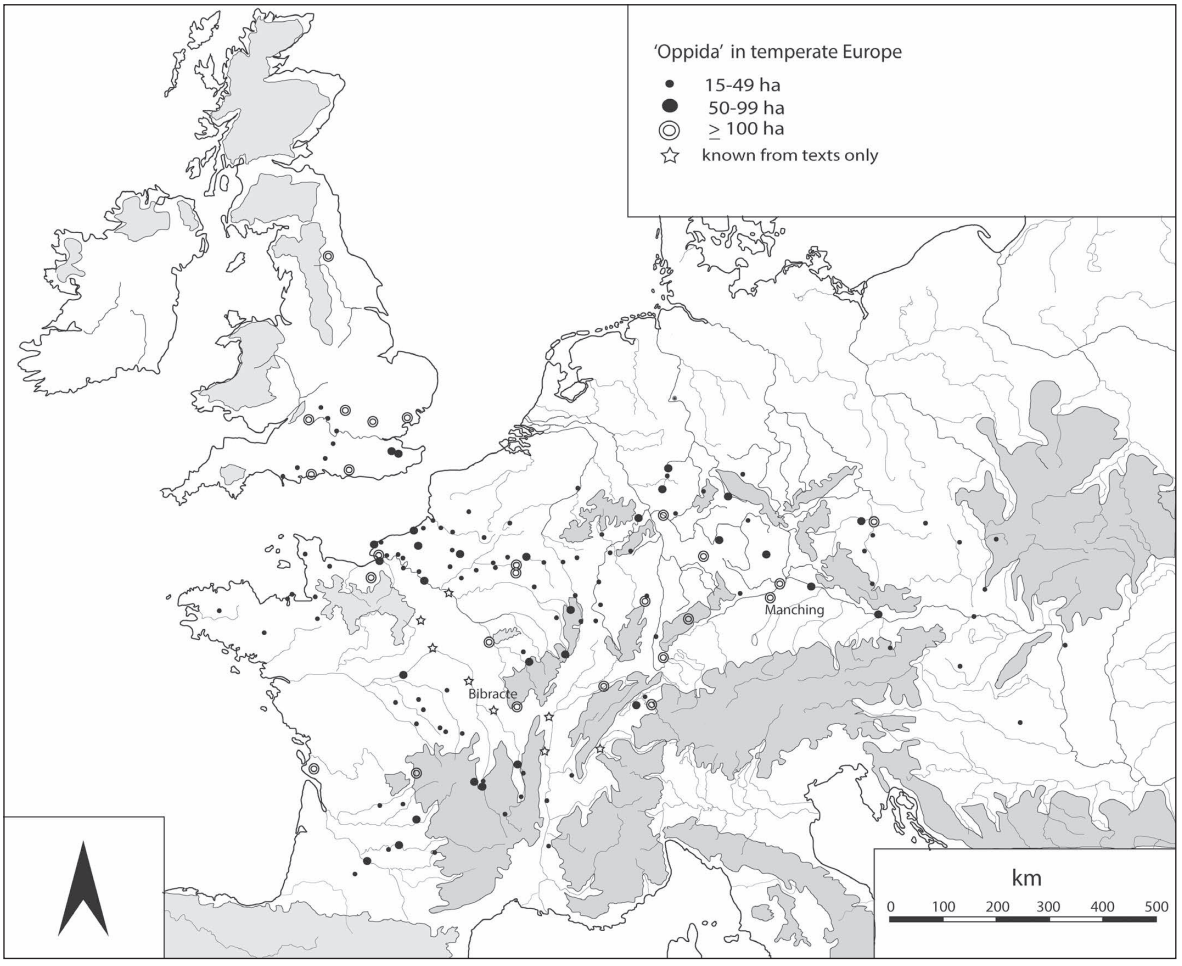

Figure 9.1. Location map of *oppida* in Europe with Bibracte and Manching highlighted. Drawn by T. Moore.

standing of Iron Age agglomerations to move beyond comparing them solely against a yardstick of classical urbanism and assess if similarities with other forms of urbanism and socio-political centres may help explain *oppida* morphology and roles.

In this paper we focus on perhaps the best investigated *oppida*, Bibracte (France) and Manching (Germany), as case studies through which to discuss the roles and trajectories of the *oppida* phenomenon more generally. From this, it is clear that many aspects of *oppida* echo those of a range of sites around the world which are of huge scale but in many respects differ from conventional urban sites. We suggest that comparison with other settlements which struggle to be defined as urban and might be referred to as 'Anomalous Giants' is beneficial in indicating that, while *oppida* sometimes share some characteristics with conventionally defined urbanism, and may have imitated some aspects of classical cities, they also represent alternative ways in which complex societies created places for social interaction and the articulation of power.

Defining and Contextualizing *oppida* in Late Iron Age Europe

The term *oppidum* originated from classical sources, most significantly Julius Caesar used it to describe fortified locations he encountered in Gaul during his conquest in the mid-first century BC. By the early twentieth century *oppida* were recognized as a Pan-European category of monument and began to be regarded as a phase of urbanism prior to the Roman conquest (see historiography in Salač 2012 and Lukas 2014). Roughly translatable from the Latin as 'town', over the last fifty years the urban nature of these complexes has been at the forefront of their analysis after a long period in which the focus was primarily on economic issues (Collis 1984; Fichtl 2005; Sievers and Schönfelder 2012; Woolf 1993). It is now recognized that the development of large agglomerations in Iron Age Europe was a longer and more complex process while increasingly nuanced concepts of urbanism have been sought to reconsider these phenomena (Fernández-Götz,

Wendling, and Winger 2014; Moore 2017a). The late Hallstatt centres (often referred to as 'Fürstensitze'), which flourished in the sixth–fifth centuries BC, have been revealed to have been much larger than originally considered (e.g., Heuneburg, 100 ha; Bourges, 250 ha) leading to claims that they should be regarded as Europe's first 'cities' (Chaume 2020; Fernández-Götz and Krausse 2013; Krausse and others 2016). Meanwhile, large unenclosed agglomerations in the Middle La Tène, some of which like Aulnat-Gandaillat could be of significant size (*c.* 200 ha), indicate that another phase of social centralization existed prior to the development of enclosed *oppida*, with some authors regarding these as also potentially urban in character (Fichtl 2013).

Oppida are hard to define as a unified phenomenon, varying in form and areal extent (Fig. 9.2) (Woolf 1993). Definitions of *oppida* are usually based on specific characteristics, including size (usually a minimum of 25 ha); that they should be enclosed with a rampart; densely occupied and acted as centres of trade and ritual (e.g., Buchsenschutz and Ralston 2012). Such definitions, largely developed in relation to the central European sites, however, mask the diversity of comparable complex sites which emerged during the late first millennium BC, and their potential wider significance. Discussions of *oppida* thus, for example, often exclude British polyfocal complexes and large Iberian enclosures, largely because of historiographic research traditions rather than clear differences in morphology or social roles (Moore 2017a; Ruiz-Zapatero, Álvarez-Sanchís, and Rodríguez-Hernández 2020). However, this range of sites might represent the impact of similar pressures on European Iron Age societies in the late first millennium BC (Moore 2017a). These issues remind us that *oppida* were part of a long development of large agglomerations and that it may be more fruitful to consider *oppida* within the context of long-term settlement trends than regard them as isolated phenomena (Fernández-Götz 2020).

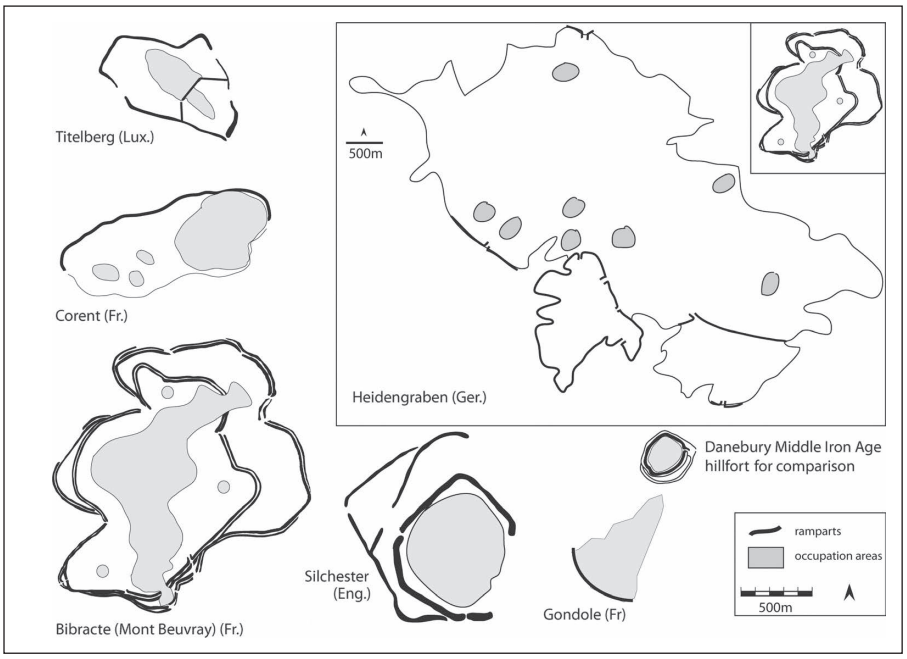

Figure 9.2. Plans of varied *oppida*. Drawn by T. Moore.

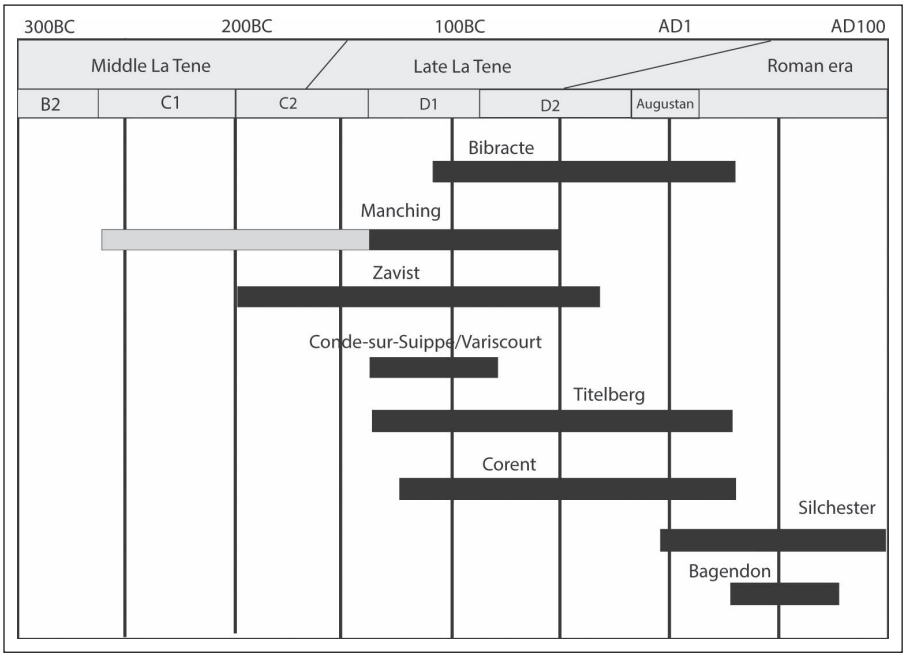

Figure 9.3. Chart of chronology of select *oppida*. Drawn by T. Moore.

The development of *oppida* varied chronologically across Europe (Fig. 9.3). The earliest appear to have emerged in central and eastern Europe, for example Závist and Stradonice date from the second century BC and the *oppidum* phase at Manching began in the last third of second century BC. In Gaul, major examples emerged in the mid–late second century BC with others flourishing in the first century BC (Fichtl 2005, 37). The sprawling complexes found in Britain emerged later, dating from the late first century BC to mid-first century AD (Moore 2020).

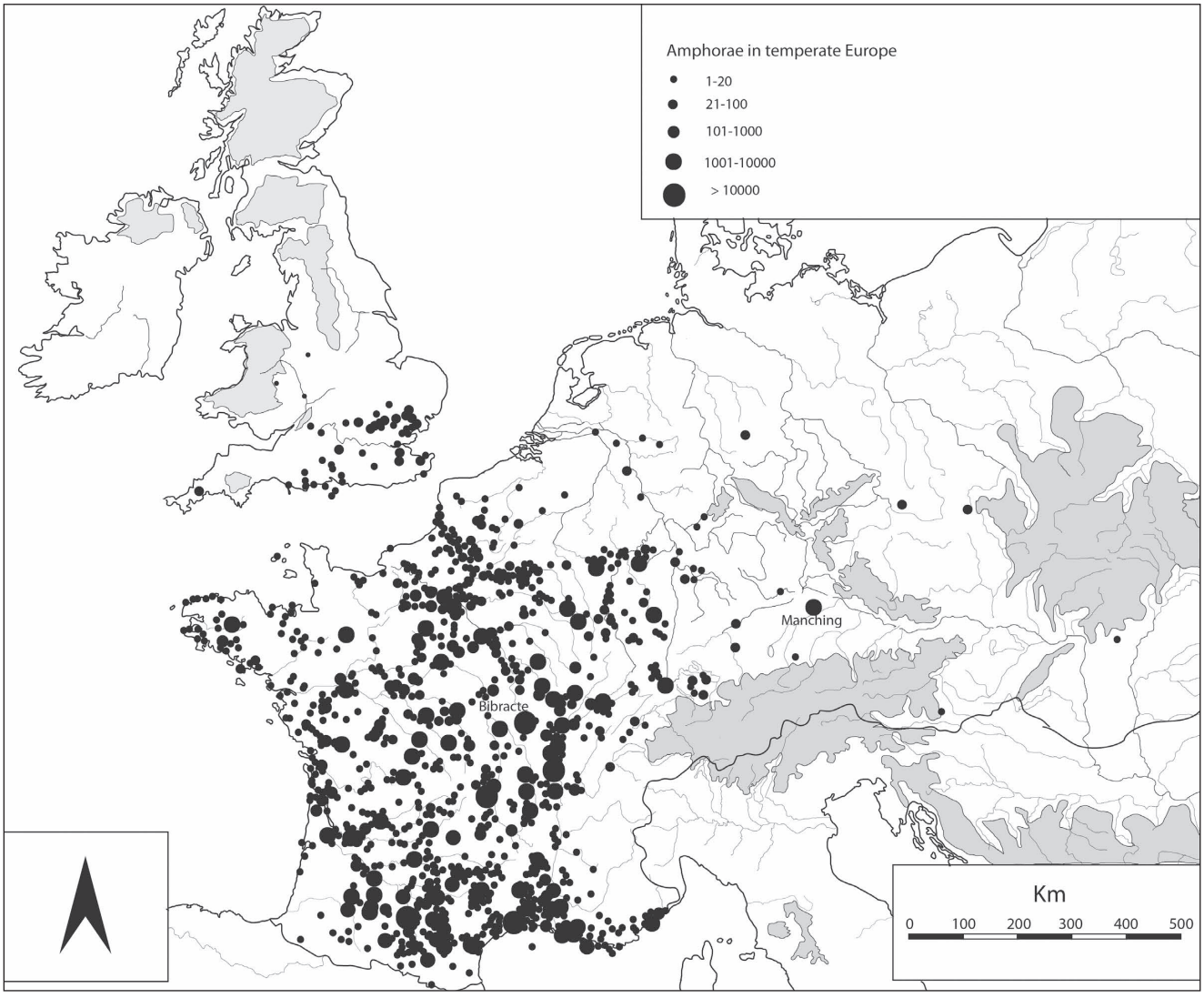

Figure 9.4. Distribution of second–first-century BC Italianate wine amphorae in temperate Europe. Drawn by T. Moore after Olmer 2018.

Environmental and Economic Change in the Late Iron Age

Approaches to *oppida* have often concentrated on the impact of the expansion of the Roman Empire in their emergence. This has particularly focused on the role of Roman trade in stimulating economic transformations in Rome's hinterlands (Cunliffe 1988). However, recognition that Iron Age societies were already developing large agglomerations focused on regional exchange and craftworking in the third and second centuries BC (Fichtl 2013), has led to recognition that external forces were only one factor in the transformation of Iron Age society.

Understanding *oppida* development needs to consider the longue durée of settlement change over the later first millennium BC. Across most of northern and western Europe from *c.* 300 BC there was a marked increase in rural settlements (Bradley and others 2016; Malrain, Zech-Matterne, and Blancquaert 2015). This probably reflected an increasing population, although the picture across Europe more widely suggests such a pattern may not have been universal (Nikulka 2016). Climate models indicate that *oppida* development coincided with a period of relatively warm conditions across much of Europe which began around 300 BC following a wetter and cooler climate in the Early Iron Age (*c.* 800–400 BC). Possible further warming took place around the turn of the millennium (often referred to as the 'Roman warm period') which lasted through the early first millennium AD (Brun and Ruby 2008; Franconi and Gosden 2021). The impact of local factors on climate is undoubtedly complex and short periods of climate deterioration may have occurred during this period, some causing periods of instability (Fernández-Götz 2016). However, the long-term

impact of prevailing climate conditions on improved farming productivity seems likely to explain the settlement increases witnessed in many regions and a concomitant rising population. How these transformations relate to the emergence of *oppida* remains to be fully understood, but a growth in population, resulting in increasingly contested landscapes make it likely that societies required more complex means of managing resources and places for social interaction and negotiation. An increase in population may also have led to social transformations in the context of inheritance and thus to the emergence of large population concentrations. Ethnographic comparisons of such processes in relatively recent alpine societies offer plausible interpretations for the Late Iron Age situation (Wendling 2010).

Changing dynamics in trade with Mediterranean societies remain important when considering the development and role of *oppida*. After sustained interaction between Iron Age communities north of the Alps and Etruscan and Greek societies, in the sixth–fourth centuries BC, a period of less intense engagement prevailed, although contact via other means, such as roles as mercenaries and cultural interaction, remained important (Schönfelder 2007; Wells 2020). By the late second century BC, the expanding Roman Empire's incorporation of the Greek city-states on the southern French coast meant it was increasingly engaged with Iron Age European societies. By the first century BC exchange with Roman traders was on a large-scale, reflected in the millions of Roman wine amphorae which entered Gaul at this time (Olmer 2018) (Fig. 9.4).

Past studies have tended to see the appearance of imports in temperate Europe as driven by Rome; traders seeking out new markets and exploiting the region for raw resources (e.g., slaves and metals) required by an expanding empire (Cunliffe 1988). More recently, the agency of Iron Age societies in these exchanges has been recognized, noting for instance the role of many imports in local ritual and consumption practices (Poux 2004). The role of some imported materials as symbols of authority in Iron Age society and connections to Roman imperial power is also evident (Creighton 2000), emphasizing a complex interaction between these forces. In some regions, particularly southern Britain, the role of imports in new power dynamics and as expressions of novel identities seems to have been more important than what they signified in terms of trade (Hill 2007). By contrast, in central Gaul by the first century BC, trade was on a vast scale (Olmer 2018). It is clear, however, that Iron Age societies were already developing regional exchange networks and centres for craft specialists (Fichtl and others 2019), indicating that Roman trade was incorporated into networks of long-distance trade rather than stimulating the development of *oppida* to control and maintain it (Collis 2014).

Bibracte and Manching: History of Research

The chronological and morphological diversity of *oppida* entails that identifying examples as representative is liable to provide an unrealistic impression. Despite their variety, however, wider trends can be discerned within the development, roles, and organization of *oppida*. These are potentially significant in explaining how and why *oppida* developed and why they took forms somewhat different from classical urbanism.

Two *oppida* have been the focus of greatest research in Europe. Bibracte, located largely on Mont Beuvray, in Burgundy, France (Fig. 9.5) has long been a type-site for the *oppida* phenomenon (Collis 1984). Identifiable by its ancient name, recorded by Julius Caesar, Bibracte was where he overwintered in 52 BC, after the decisive battle of Alésia that brought about Roman victory in the Gallic Wars. Caesar claimed it was the pre-eminent centre of Aedui (Caes., *B.Gall.* 1.23), a people who were close allies of Rome. This association means Bibracte has a prime place in classical history and French national identity (Dietler 1998). It has attracted the attention of scholars since the nineteenth century and was subject to large-scale investigations by pioneering French archaeologist, Jaques-Gabriel Buillot. It became a major archaeological research centre in the 1990s, leading to continued large-scale excavations by a multinational group of researchers (Guichard 2014; Guichard, Meunier, and Paris 2018).

Using Bibracte to discuss the development and nature of Iron Age *oppida* is complicated by the development of monumental and elaborate architecture in the late first century BC, after the Gallic Wars, when the indigenous leaders were clearly enhancing their power in the new Roman imperial era. This was a phase when the architecture of the complex often imitated Roman architectural styles, even if it was modified through an Iron Age lens and when the influence of Mediterranean architectural styles can also be traced back to foundation of the settlement (Hoppadietz forthcoming). How much the layout of Bibracte after the Roman conquest mirrored its earlier organization remains uncertain, although recent assessment suggests there were significant elements of continuity, as well as dramatic transformations (Guichard and others 2018).

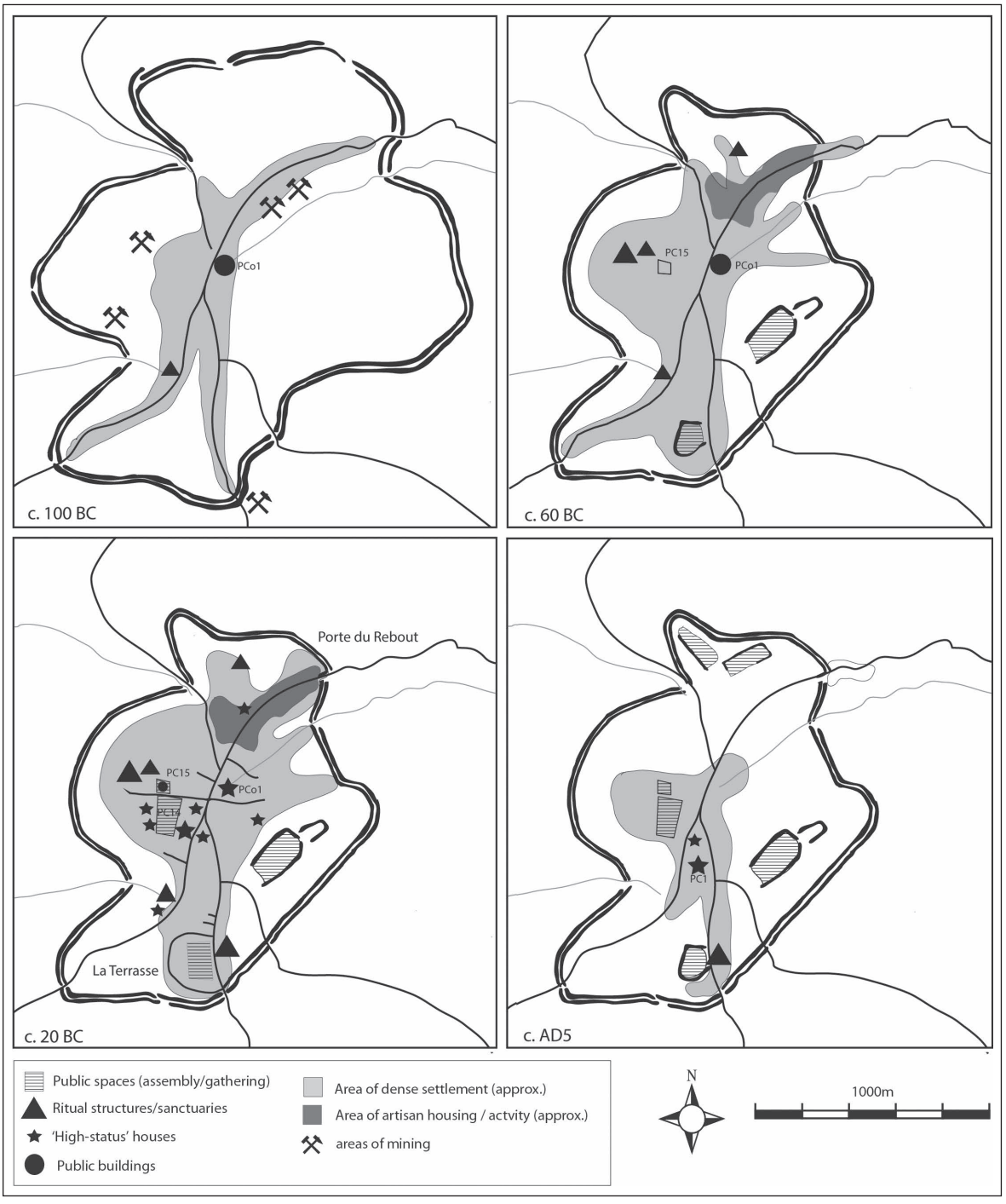

Figure 9.5. Simplified plan of Bibracte and its development over time. Drawn by T. Moore after Dhennequin, Guillaumet, and Szabó 2008 and Guichard, Meunier, and Paris 2018.

Manching, close to Ingolstadt in Bavaria, Germany, has been subject to long-term investigation in advance of development on the site (Fig. 9.6) (Sievers and Wendling 2014). Beginning systematically in the 1950s, until 2016 most of these were conducted by the Roman-Germanic Commission (RGK). These revealed large areas of the complex (Sievers 2007, 9–18) with excavations continuing in recent years in the southern part of the complex further elucidating its layout and development (Wendling and Winger 2014; Winger 2020). Combined, this is allowing for an increasingly detailed understanding of the development of the complex and its spatial layout (Wendling 2013).

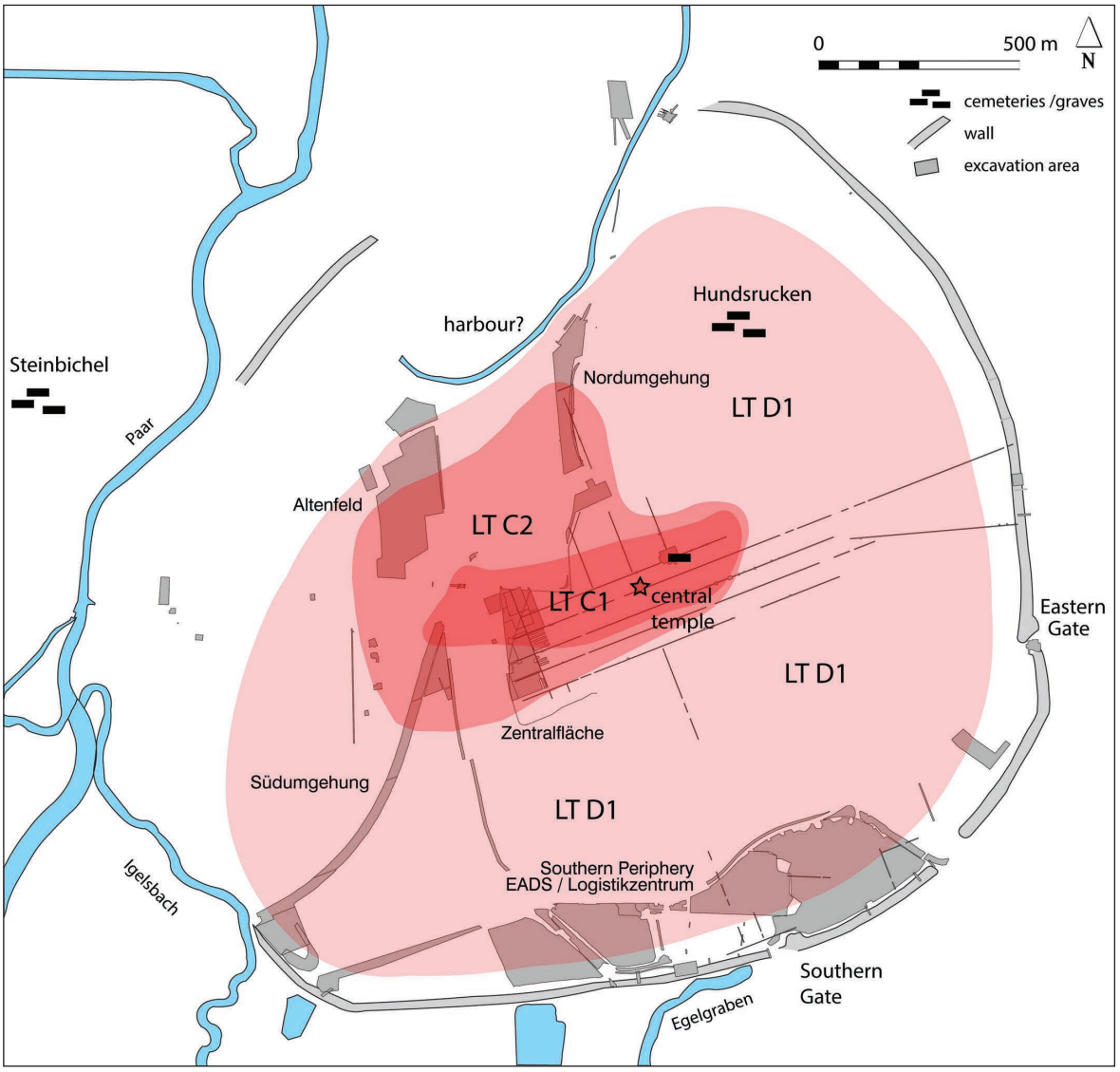

Figure 9.6. Plan of Manching, showing the major excavation areas, the location of Iron Age cemeteries, and surrounding rampart built in La Tène D1. Shaded zones indicate the continuous expansion of the settled or otherwise used areas, from the pre-fortified phases (La Tène C1/C2) to the *oppidum* (La Tène D1). Drawn by H. Wendling after Wendling 2013, 461, fig. 1, with additions.

The extent of research at both *oppida* means that despite their large size, they have seen relatively large areas excavated in comparison to many *oppida*. At Manching *c.* 11 per cent (40 ha) of the interior has been excavated, although to different levels of methodological and documentational quality, with LiDAR and *c.* 100 ha of geophysics providing further evidence of its layout (Wendling 2013). At Bibracte *c.* 4 per cent (8 ha) has been excavated, of which at least 6 ha to a modern standard. Another *c.* 30 ha (22.2 per cent *intra muros*) has now been surveyed using geophysics, which alongside LiDAR data, provides further clarity on the nature of activity within the complex (Wendling 2023). At both sites, recent research has seen greater attention to their environs, with surveys and excavations around Bibracte (Barral and Nouvel 2012; Creighton and others 2008; Moore and others 2013) and Manching (Eller n.d.; Eller and others 2012). This has revealed important new information on the relationship to their environs and even expanded the limits of what we might consider the extent of these sites (Moore 2017b). Despite the wealth of work at both complexes, like many 'Anomalous Giants', their scale means that investigations have still only examined a relatively small proportion of their overall extent. Recent discoveries at both sites emphasize too how new discoveries continue to challenge preconceptions on the nature and extent of occupation at many *oppida*.

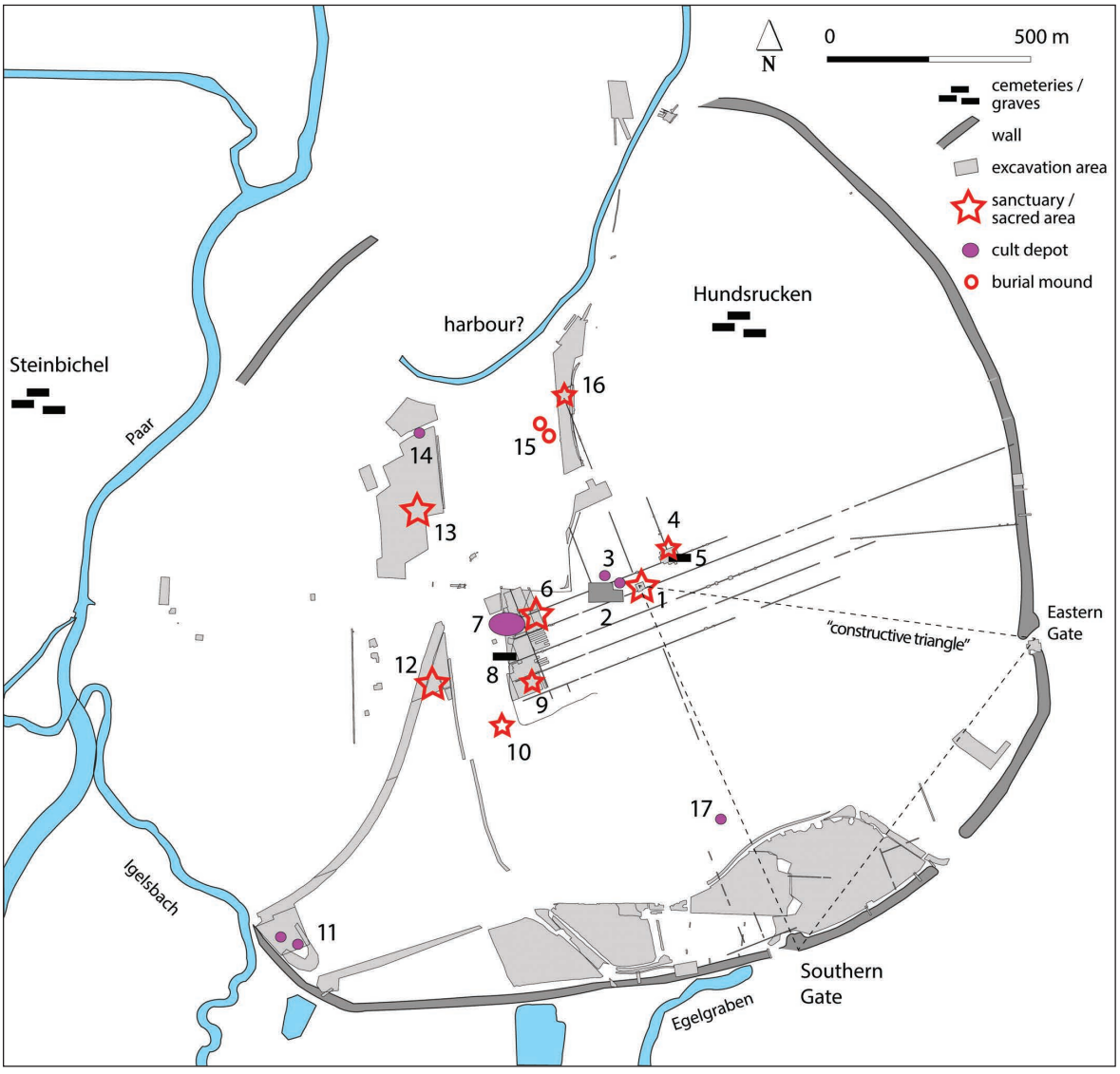

Figure 9.7. Plan of Manching, showing the location of sanctuaries/shrines, other sacred areas, votive and funerary deposition locations, cemeteries, and burial mounds. **1**) 'Central temple' trench 20. **2**) Stone pavement. **3**) Depot A12. **4**) 'Zentralfläche Ost', ditched enclosure. **5**) Burial 103 f. **6**) 'Zentralfläche' sanctuary/shrine. **7**) 'Zentralfläche' deposition zone. **8**) Burial 725b. **9**) 'Zentralfläche', circular building. **10**) Circular geomagnetic anomaly. **11**) Depots 550/1 and 576/3. **12**) 'Südumgehung', sacred area. **13**) 'Altenfeld', special buildings 24 and 36. **14**) Depot 1490a. **15**) Bronze Age burial mounds. **16**) 'Nordumgehung' Gold tree/shrine. **17**) 'Leisenhart', mass deposition. Drawn by H. Wendling after Wendling 2021, 156, fig. 1.

Ancestry and Development

The origins of *oppida* have always been difficult to assess. Many were replaced with Roman towns, some also becoming medieval and modern towns, ensuring that their earliest phases have often been truncated and are hard to investigate. This means that it is at sites like Manching where abandonment in the Iron Age allows for greater assessment of its origins. Despite their differences, Bibracte and Manching reflect a pattern of development which occurs at many *oppida*, suggesting a relatively common trend in how they emerged. Many *oppida* appear to have emerged from pre-existing socially significant places, often in the form of small timber-built sanctuaries, which began as early as the fourth century BC (Fichtl, Metzler, and Sievers 2000), or places which already appear to have been a focus of the social assembly

of rural communities (Moore 2020). This evidence indicates that while many of these locales were lacking in pre-existing large settlements, the places in which they were constructed had long histories of social significance, sometimes stretching back into the Early Iron Age (Moore 2017a). While the *oppida* themselves only emerged from the second century BC, their development was clearly part of a longer trajectory of settlement change. This was potentially related to longer term population growth, perhaps linked to climate changes (discussed above) which began in the Middle La Tène (400–200 BC), and as part of the formation of larger social entities in Iron Age societies, the named peoples who were later recognized by Roman writers.

The area occupied by the agglomeration at Manching has been recognized to have a complex earlier history. Its origins as a regional focus seem to have emerged in the form of a cult site, built in the late fourth century BC/early third century BC (Fig. 9.7), in the area which was to become the centre of the *oppidum* that emerged later (Maier 1990; 2000; Wendling 2019a, 165–69). This attracted regional communities to assemble at this location in the third–second centuries BC (Wendling 2021, 157–60; Wendling and Winger 2014, 133) with a large unfortified settlement developing here.

Bibracte was first intensively occupied, in a rather ad hoc fashion, around the end of the second century BC, when the outer ramparts were constructed, with internal occupation consisting of timber buildings (Guichard, Meunier, and Paris 2018, 102). Its antecedents are less obvious than Manching, but the earliest activity here may also have been in the form of a sanctuary, perhaps dating as early as the third century BC (Fernández-Götz 2014, 391), situated in the area of the later Roman temple complex. Recent research at the temples on Sources de l'Yonne extra-mural settlement at Bibracte (discussed more below) hints that here too an early phase of Iron Age ritual activity represented the origins of the settlement (Moore and Hoppadietz 2019).

Manching and Bibracte reflect a wider pattern, with the antecedents of many *oppida* represented by sanctuaries, such as Gournay-sur-Aronde, which emerged in the fourth–third centuries BC around which settlement agglomerated (Fichtl, Metzler, and Sievers 2000). Such sanctuaries represent the emergence of an increasingly interconnected, but still largely rural, populace in the Iron Age. These sanctuaries seem to represent places for collective assembly, slowly leading to the development of regional identities and allowing the development of larger, more centralized social structures (Fernández-Götz 2014).

Manching's emergence as an unenclosed settlement reminds us that it was also part of a wider trajectory of agglomerations emerging in France and central Europe in the third–second centuries BC (Fichtl 2013; Fichtl and others 2019). Frequently situated in river valleys and plains, as Manching was, these were centres of craft specialization and regional exchange, representing communities who were more than self-reliant farmers. While sometimes overlooked as having the potential to be defined in urban terms, the scale of some unenclosed agglomerations and the fact that many preceded the development of enclosed *oppida*, indicates they were part of Iron Age societies' trajectories to greater centralization and specialization (Fichtl 2013; Salač 2012). However, it has been noted that while the open settlements of the second century show some standardization in size and orientation, apart from Manching there is little evidence of spatial organization, planned layouts, collective facilities, or monumental buildings (Trebsche 2019, 377), which many regard as crucial evidence of urbanism. For this reason, many scholars argue these large unenclosed agglomerations should not be regarded as urban in the same way *oppida* might be (Buchsenschutz and Ralston 2012, 358; Buchsenschutz 2015, 306; Rieckhoff 2021, 122). Manching, therefore, provides important evidence concerning the development of an *oppidum* from an unenclosed agglomeration. The settlement was enclosed *c.* 140/120 BC with a 7 km long *murus gallicus* style rampart (see below), although it may have had an earlier palisade. Prior to this, in the third century, the settlement was unenclosed but it is increasingly recognized that the nature of occupation in its earliest phases is comparable and even superior in density, spatial organization, and complexity to many enclosed *oppida* and might even be regarded as 'urban' as many such centres (Fichtl 2021, 90–96; Wendling 2013, 460). At present, Manching seems to be the only clear example of an unfortified agglomeration becoming an *oppidum* in the valley, suggesting that such continuity may have been the exception rather than the rule (Rieckhoff 2021, 122). This may make the development of Manching even more extraordinary.

Even where it is difficult to establish whether sanctuaries preceded *oppida*, many of these locations appear to have had long biographies which indicate their prior social significance. New settlements were often situated in places with earlier activity, such as extant ramparts, much of which would have remained visible. Gergovie and Corent, for example, reused hilltops with Early Iron Age and Late Bronze Age occupation (Poux 2012, 282–84). Many continental European *oppida* reoccupied Bronze Age or late

Hallstatt centres (Danielisová 2014; Moore 2017a, 78) while British examples may have had earlier roles as assembly places (Moore 2020). It seems likely, based on chance finds, that Mont Beuvray had also been occupied in the Early Iron Age, although related structural remains have yet to be identified (Gruel and Vitali 1998, 12). At Manching the presence of earlier Neolithic and Bronze Age activity, including tumuli, indicates this too had long been an important point in the landscape (Krämer and Schubert 1970). The presence of fourth–third-century BC cemeteries predating the settlement suggests this was a focus for rural, dispersed communities (Krämer 1985). Similarly, finds from the central sanctuary sites of earlier objects, including a Hallstatt sword and earlier La Tène helmets, emphasize the longevity and significance of this place prior to the *oppidum* (Krämer and Schubert 1970; Nieszery 1992; Wendling 2013, 466; Winger 2017, 100).

Such long biographies, alongside the choice of what were often topographically striking or significant places (such as prominent hills and river crossings), suggests *oppida* locations were integral to the creation and maintenance of community identity and explains why these places developed in the Late Iron Age. The sanctuaries at these locations also imply that many had long histories as social foci, perhaps as places of social memory (*lieux de mémoire*) for the rural population (Fernández-Götz 2014). Conversely, the choice of locations which were socially significant, but often marginal from densely settled farming landscapes (Danielisová 2014, 78; Moore 2020), may stress the changing nature of power at the end of the Iron Age, deliberately locating these centres away from existing social mechanisms (Hill 2007).

At both Bibracte and Manching their positioning on naturally important routeways is also likely to be significant in their development, allowing them to become specialist production and exchange centres (see below). This may reflect the changing nature of Iron Age societies, becoming more focused on exchange, and representing new sources of wealth and power in what remained a predominantly agrarian society. As has been suggested for Manching, its establishment represented a way to stimulate and benefit from trade, outside of pre-existing social mechanisms (Wendling 2010; 2013, 463, 470–73).

Spatial Organization

The focus of the *oppidum* at Bibracte is the large enclosure situated on the 809 m hill of Mont Beuvray. The hill is encompassed by two lines of rampart, the first stretching for *c.* 7 km (constructed around 110 BC), encompassing *c.* 200 ha, which was later replaced by an inner rampart of *c.* 5 km (constructed *c.* 90 BC) enclosing an area of *c.* 135 ha. The latter rampart was of the *murus gallicus* style, found at many *oppida*, which included a stone facing with timber revetment, and stood some *c.* 4–6 m high (Buchsenschutz, Guillaumet, and Ralston 1998).

Internally, occupation encompassed *c.* 100 ha of the interior, although the density of occupation changed over time (Fig. 9.5) (Guichard, Meunier, and Paris 2018, 58). The interior was organized in a way that suggests a complex social structure. Craftworking areas were confined largely to the road leading into the complex near the gate at Porte de Rebout, although divisions between low and high-status areas of occupation should not be too finely drawn. Ritual areas, in the form of sanctuaries and other activities, were located at the summit of the hill and in relation to the numerous springs on the site. By around 50–30 BC at PC01 a monumental building, probably a forum basilica (Dhennequin, Guillaumet, and Szabó 2008, 67; Szabó 2019), was located relatively central to the settlement, associated with what might have been shops along the axial route through the complex. The building complex along the road closely adopted the orientation and spatial organization of the buildings from the earlier phases of the *oppidum*, suggesting significant continuity in the layout of the settlement (Hoppadietz forthcoming). There appear to have been status distinctions in some of the housing within the complex with elite houses focused in certain areas, such as PC1. Here, what were probably already high-status buildings were replaced with an elaborate Roman-style atrium house in the early first century AD (Paunier and Luginbühl 2004). The range of high-status houses, while grander than dwellings elsewhere in the complex, indicate that no single house was pre-eminent, however.

The rebuilding of structures across the complex on a relatively regular basis, perhaps every twenty years, was matched by the rebuilding of the ramparts between 100 BC and 30 BC (Buchsenschutz, Guillaumet, and Ralston 1998), potentially representing a rebuild every generation (Woolf 2006, 271). Such reorganization may reflect a relatively unstable internal power structure, best described as a form of oligarchy, with emerging leaders needing to assert authority and stress group identity through construction projects (Collis 2000, 232; Moore 2017a, 296). This also relates to what were probably changing forms of identity as Iron Age societies came into contact with Rome, with buildings adopting classical forms of architecture.

There was also the provision of public spaces, including relatively large open areas, which may

have been the case at PC14 for at least part of its history. Some of these platformed areas contained structures, including an elaborate timber building at PC15, thought to have been some form of public building, although whether for ritual or exchange remains uncertain (Guichard, Meunier, and Paris 2018) (Fig. 9.8). Open areas existed elsewhere, most notably at La Terrasse, with indications that this remained open throughout the site's occupation, perhaps a sacred or assembly area (Goláňová and others 2020). The central main street with its elaborate boat-shaped water basin (Almagro-Gorbea and Gran-Aymerich 1991) can also be considered a public place (Hoppadietz forthcoming).

Until relatively recently, it was assumed that the *oppidum* of Bibracte was confined to the enclosed area on Mont Beuvray. Systematic survey and excavation in the environs have, however, revealed the presence of sprawling unenclosed settlement of *c.* 120 ha at Sources de l'Yonne, *c.* 4 km to the north, which was contemporary with occupation on Mont Beuvray (Fig. 9.9) (Moore and others 2013). Although investigations so far have been small-scale, this area of the settlement appears to have flourished in the first century BC. This may indicate that Bibracte was a more dispersed centre by this time, not confined by the ramparts on Mont Beuvray. Bibracte is not alone in having this arrangement of multiple centres of activity, with a potentially similar arrangement recognized in the Auvergne at Corent, Gergovie, and Gondole. Poux (2014) has described this as a multipolar centre although the possibility that both complexes represented low-density sprawls of occupation has also been suggested (Moore 2017a). The permanent population of Bibracte in the mid-first century BC has been suggested as around 5000–10,000 (Guichard, Meunier, and Paris 2018), although creating such estimates is fraught with problems. This would imply a relatively low-density of occupation, somewhere between 37–74 persons per hectare (for the main 135 ha inner enclosure) (Fernández-Götz 2019b). This would be *c.* 21–42 persons per hectare if we include Sources de l'Yonne agglomeration, and much lower if we consider them part of the same overall complex which included expanses of open farmland (Moore 2017a).

The spatial organization of Manching is significantly different to that of Bibracte, although it shares important similarities. Occupation appears to have significantly expanded around 200 BC possibly in a relatively planned way, partly as its low-lying position allowed easy expansion (Wendling 2019a; Wendling and Winger 2014, 136). The early unenclosed settlement extended over *c.* 20 ha by the early second century BC and by the final phase of occupation appears

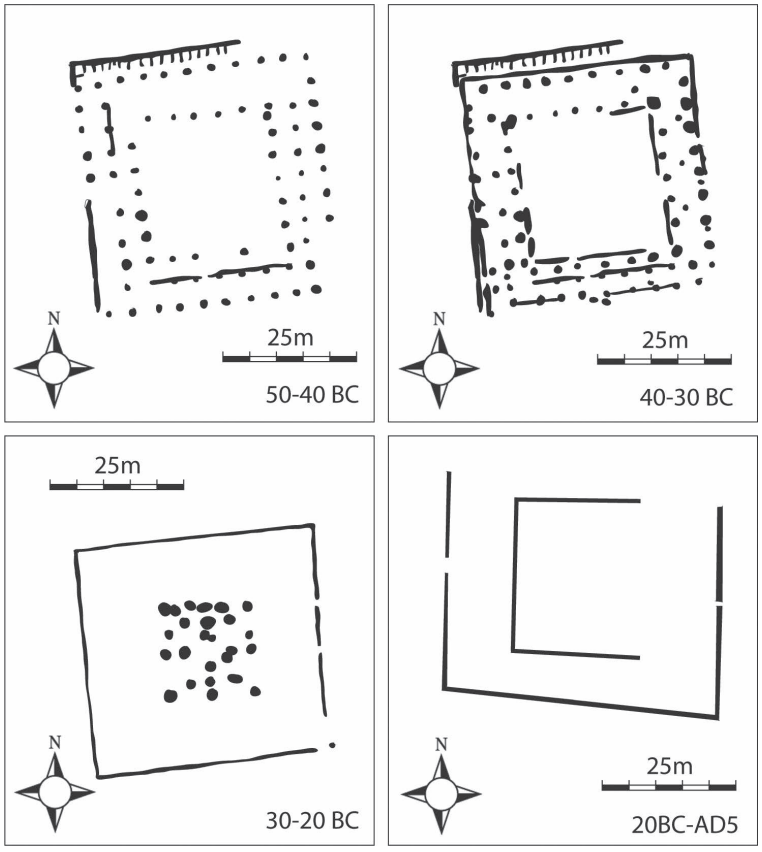

Figure 9.8. Simplified plans of the different phases of structures in area PC15 at Bibracte. Drawn by T. Moore, after Guichard, Meunier, and Paris 2018.

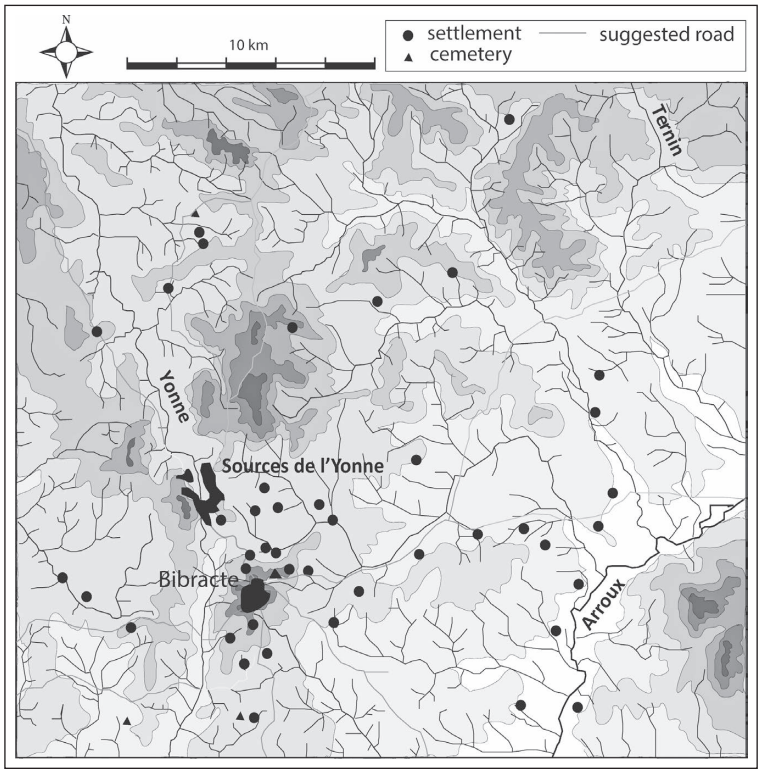

Figure 9.9. Plan of Bibracte and Sources de l'Yonne complex. Drawn by T. Moore.

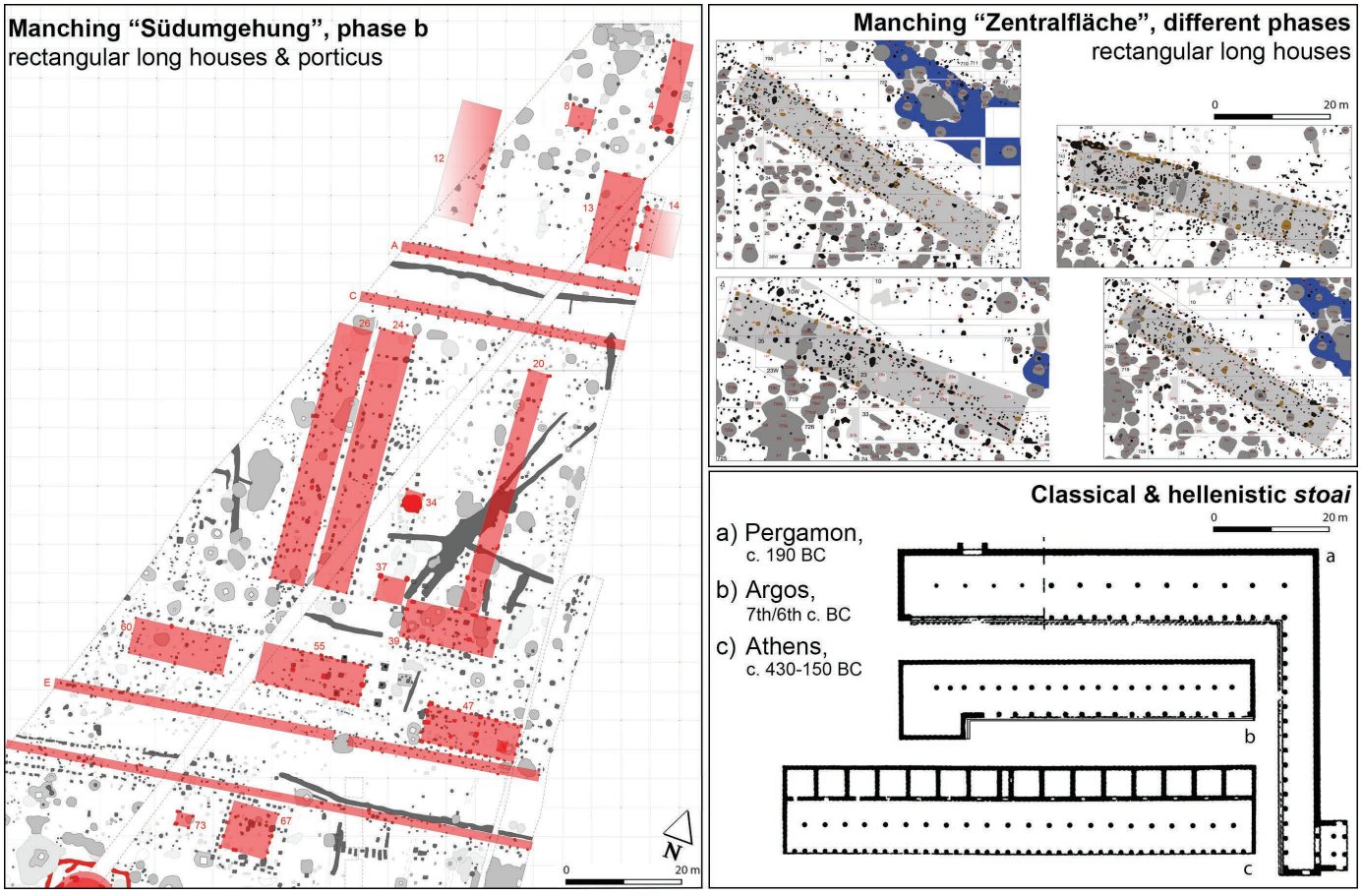

Figure 9.10. **Left**) Plan of the 'Südumgehung' excavation area at Manching, highlighting the plan of long houses in an area surrounded by a *porticus* along parallel streets. **Right**) Plans of long houses of different phases from the 'Zentralfläche' area of Manching compared with ground plans of classical and Hellenistic *stoai*. Drawn by H. Wendling, supplemented after Wendling 2018, 164, fig. 8.

to have encompassed *c.* 250 ha of relatively built-up space, although the density of occupation varied significantly. The level of building diversity and building density during this pre-fortified phase suggests a fundamentally urban level of complexity that exceeded that of the subsequent phases of the fortified oppidum (Wendling 2013, 473–76; 2018, 166–71). Recent evidence suggests that this earliest phase was enclosed with a ditch and palisade, although the major *murus gallicus* rampart was constructed relatively late in its development (*c.* 140/120 BC), encompassing an area of *c.* 380 ha (Wendling 2013, 477).

The development of this first phase was oriented towards the alignment of a rectangular complex in the centre of the settlement, which is interpreted as a sanctuary. This also influenced the course of the street network. The complex appears to have had distinctive zones of activity suggesting a centrally organized layout, although this changed over time. In the central area, this included regular, enclosed plots along 10 m wide roads. Along one road were smaller buildings considered to have been houses for craftworkers and traders, but also included granaries and cattle corrals (Wendling 2018, 159). The southern part of the central area included long timber halls (Fig. 9.10) up to 30 m long and *c.* 5 m wide. Such long halls also occurred within a district located in the northern part of the Südumgehung area, which was surrounded by a *porticus*-like structure (Sievers 2010; Winger 2015, 18–19, 46–50). There is no consensus on the function of these structures. The density of imported amphorae finds in the central area dominated by these long halls and their form has suggested to some they might be comparable to the *stoa* of the classical Greek world, which had functions as public and economic spaces (Wendling 2018, 164). That a distinctly enclosed district in the central area was given over to exchange might also be evident in the discovery of slave-chains, suggesting the quartering and transport of slaves (Schönfelder 2015) as well as evidence for coin minting and metalworking. Other roles for these long halls have been suggested, however, as high-status dwellings or even as stables (Winger 2015; 2018).

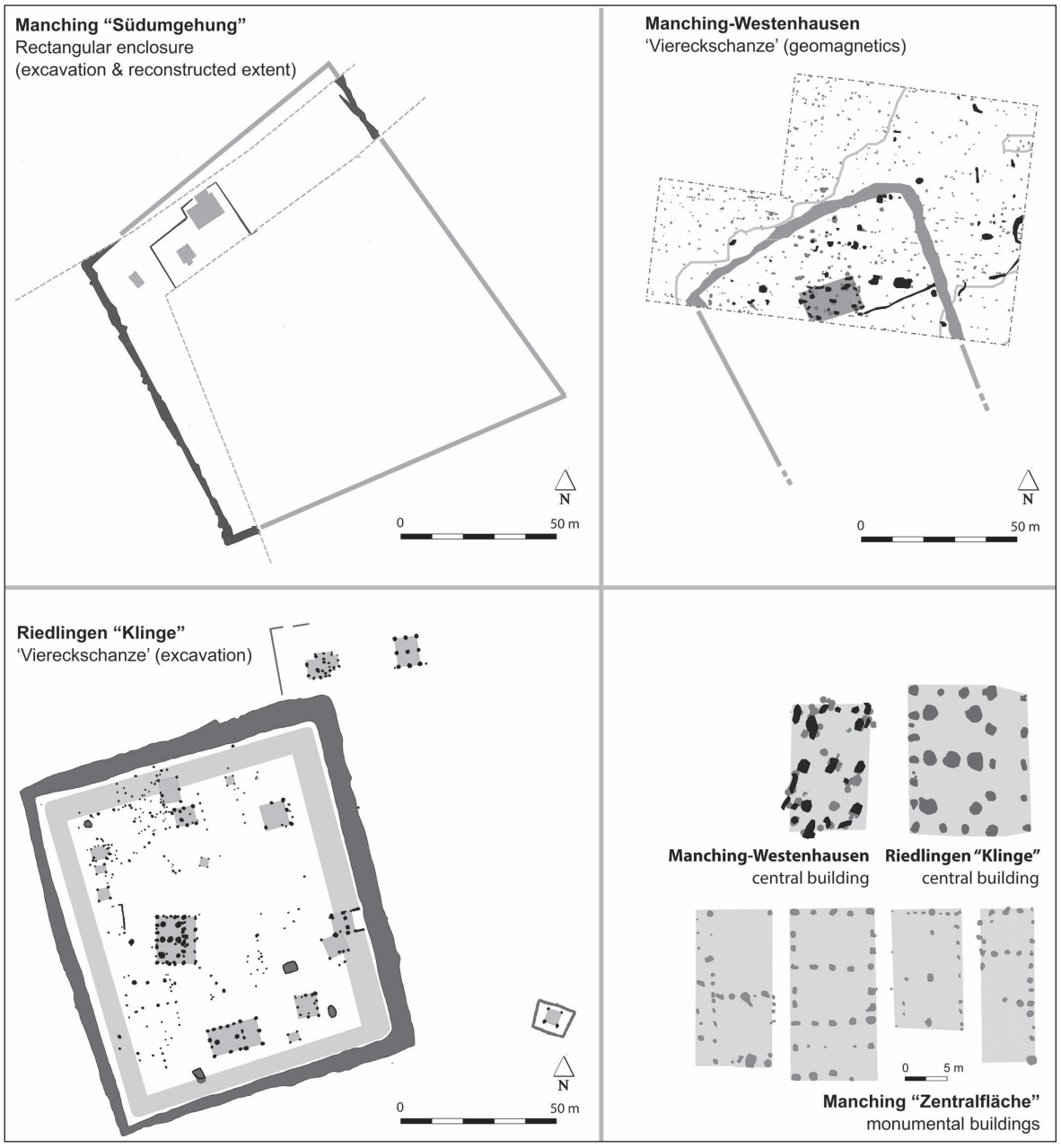

Figure 9.11. Comparison of plans of intra-site rectangular enclosures within Manching with 'Viereckschanzen' (rural enclosed settlements) at Manching-Westenhausen and Riedlingen (Baden-Württemberg, Germany). Monumental buildings at Manching 'Zentralfläche' correspond to central buildings in the 'Viereckschanzen'. Drawn by H. Wendling, supplemented after Wendling 2019b, 250, fig. 8.

In the second half of the second century BC, Manching underwent a major reorganization of its settlement structure (Sievers 1999, 15–21; Wendling 2013, 480). Despite fundamental continuities, for example in the road network, the organization of the settlement changed. This later phase of building deviated from the earlier spatial layout with a shift in orientation towards the east and was no longer anchored on the central rectangular enclosure (Wendling 2018, 158; 2019a; Wendling and Winger 2014, 136; Winger 2015, 14–17). Large parts of the settlement were now occupied by smaller enclosures which were of similar size and organization to rural farmsteads found in the region (Fig. 9.11). These included domestic buildings, granaries, wells, and refuse pits (Brestel 2019; 2021; Wendling 2019a). This phase also marked a greater emphasis on farming within the bounds of the settlement which was now surrounded by a rampart. This may suggest a greater reliance on food production from within the complex. Despite this restructuring and some

decrease in the density of the built environment, the economic role of the settlement remained, however. Regional and long-distance trade and craftworking continued, testifying to the site's continued economic and political regional supremacy (Feugere and Gebhard 1995; Sievers 2002a; 2002b; Wendling 2013, 470–73).

At least five sacred areas, 'sanctuaries' or 'shrines', including rectangular and circular structures, have now been identified at Manching possibly with distinct cult districts (Wendling 2021; Winger 2020). Combined with the evidence for rural-like farmsteads within the complex, those areas may denote different social groups within the agglomeration. This might support the notion that the community at Manching retained an element of separate kin groups and households that now clustered together within the *oppidum*.

The overall density of occupation at the complex is somewhat hard to gauge. Wendling (2018) argues that it was markedly more densely settled than comparable rural settlements. The overall population at the height of activity in the second century BC has been postulated as around 5000–10,000, marking a density of 13–26 people per hectare (Fernández-Götz 2019b), which like many *oppida* makes it comparable to low-density urban phenomena around the world (Moore 2017b).

Synoecism *and Planning*

Both Manching and Bibracte reflect some of the wider patterning of the spatial organization of *oppida*. This includes discreet zoning for activities such as industrial quarters, areas of higher-status housing, sanctuary sites, and open areas (Sievers 2007, 49–54). At some more nucleated sites (e.g., Villeneuve-St-Germain) such different activity areas appear to have been defined by internal ditched divisions. Such clear distinctions are not apparent at our case studies, although the discovery at Manching, in the site's southern periphery, of a radiating system of ditches and a seemingly consistent system of enclosure in the more central areas may represent something similar (Wendling 2023).

One aspect from the spatial layout of Manching which is recognized at some other *oppida* is the inclusion of settlement enclosures similar to those seen in the rural hinterlands (Sievers 2004). A similar situation has been recognized at the *oppidum* of Condé-sur-Suippe where the enclosures are of similar size to those in the rural hinterlands (Moore and Fernández-Götz 2022). At Manching, this similarity has been explained in different ways, some arguing it represents the physical manifestation of aristocratic authority within the *oppidum* (Fernández-Götz 2014, 384; Wendling 2013). An alternative, although not necessarily contradictory, possibility is that this reflects a desire to retain the household as a social entity within the settlement. At some *oppida* this may represent the *synoecism* of the rural population into a more nucleated context (Sievers 2007), while retaining something of their distinctive rural identities (Moore and Fernández-Götz 2022). In some areas, such as a northern France and Bohemia, this may relate to a decline in rural settlements, indicating the movement of a significant part of the rural population into the *oppida* (Danielisová 2014; Haselgrove and Guichard 2013). The abandonment of the rural settlement at Etting-Wettstettener Weg, close to Manching, contemporary with the expansion of Manching around the second century BC may be an example of this process (Eller and others 2012, 307–08), although there remains some debate about the role of this settlement.

The presence of multiple areas across Manching interpreted as sanctuaries might also indicate the presence of distinct social groups within the *oppidum* (Winger 2020). This process might be evident at Manching in its earliest origins, with the early cemeteries representing dispersed rural settlements which came together through *synoecism* to form a more densely occupied settlement while retaining some of their original distinctive sense of community (Wendling 2013, 466; Winger 2017, 100). Material culture and isotope analysis suggest an influx of people from Bohemia and might also point to retained cultural identities within the complex (Sievers 2015). Evidence for such a process at Bibracte is less apparent. Here it seems likely that the population explosion at the complex in the first century BC may have partly led to a decline in rural settlement, at least in its immediate vicinity. Evidence that rural identities were retained within the *oppidum* is lacking however, possibly indicating that Bibracte represented a different social trajectory. Indeed, many *oppida* in Gaul were places where thousands of people congregated, probably coming from different population groups to form a completely new population structure (Buchsenschutz 2007, 252; Rieckhoff 2021, 126). The translocation of a rural population into *oppida* was, therefore, not universal. At some examples seemingly largely empty of dense settlement, these perhaps had roles more as meeting-places for dispersed rural communities (Moore and Fernández-Götz 2022). When it is evident, the inclusion of farmstead enclosures within the *oppida* may mark tensions in transforming what remained primarily rural societies into more centralized ones.

Another common element of *oppida*, is the presence of open areas, seen at Manching and Bibracte. This often takes different forms, but at many at *oppida*, such as the Titelberg and Corent, open spaces were concurrent with sanctuaries, combining public assembly with ritual (Fernández-Götz 2014; Metzler, Méniel, and Gaeng 2006). Other structures imply this combination of gathering and ritual, for example the theatre-like structure at Corent (Poux 2012). The central location of sanctuaries within many *oppida* (e.g., Corent, Bibracte, Manching) reinforces the impression that ritual and social authority were intimately combined in late Iron Age society.

In Manching it has been argued that some of the elaborate enclosures in the central area were elite residences, even if not necessarily permanently occupied, but rather as some form of 'urban dependencies' of a land-owning elite (Sievers 2007, 88–93; Wendling 2013; 2019b). In the late phase of Bibracte, a large, *insula*-like complex of Roman-style atrium buildings on the Pâture du Couvent, dating from the Augustan period (Szabó 2019; Hoppadietz forthcoming), as well as the large Roman-style atrium house at PC1, testify to the presence of wealthy inhabitants. Although it is interesting that the development of the latter in the last decades of occupation in the early first century AD coincided with the decline of occupation elsewhere in the complex. Elsewhere, rich burials, containing Roman imports, associated with rural settlements in the hinterlands of some *oppida* in Gaul, such as close to the Titelberg, alongside Caesars's reference to *aedificia* (elite farmsteads), suggest that many *oppida* were not the prime residences of the elite but rather centres for markets and production with the elites situated in enclosed settlements in the rural landscape (Fichtl 2019; 2021; Metzler-Zens and Metzler 2000). The implication is of a complex relationship between growing status distinctions within Iron Age society and how *oppida* were used to both limit this through negotiated forms of power while also being expressions of how that power was obtained. In contrast to an emphasis on demographic and economic explanations for the emergence of the *oppida* (Salač 2012; 2014), others have argued their emergence was a conscious political project, planned and implemented by an elite (Kaenel 2016, 72; Gruel and Buchsenschutz 2015, 308). This perspective regards the primary goal of establishing the *oppida* as not necessarily part of economic expansion, but a process of the indigenous elites gaining and maintaining their power (Rieckhoff 2021, 133).

Monumentality

One of the conventional attributes of urbanism has been evidence for monumental structures (e.g., Marcus and Sabloff 2008, 13). In general *oppida* lack such buildings, although the theatre-like structure at Corent (Poux 2012), the basilica and its wooden predecessor (Hoppadietz forthcoming) and large wooden building at PC 15 at Bibracte (Fig. 9.8), and the large halls at Manching (Wendling 2018; 2019b) might be argued to have been, at least in relative terms, of monumental significance. This dearth of dominant monuments may, however, support the notion that these were societies where power was expressed in other areas of social life.

One element of *oppida* that can be argued to be a defining monumental characteristic is their ramparts. Both Bibracte and Manching had ramparts which extended for many kilometres, reflecting how ramparts at many *oppida* could be on a vast scale, at the most extreme examples such as *c.* 16 km at Colchester (Camulodunum) in Britain and *c.* 10 km at the Heidengraben in Germany (Ade and others 2012). The construction of such ramparts required an enormous consumption of resources (labour; stone; timber; iron) with the outer rampart at Bibracte estimated to have required four million person-hours to construct (Haselgrove 2016, 458). For Manching, it has been estimated that around two thousand people would have been needed for 250 days to construct its *murus gallicus* (Fernández-Götz 2019b, 50) with resources such as the stone for the walls brought from some distance away (van Endert 1987, 115–18). The effective defensive capability of such ramparts has been questioned, with aspects of some *murus gallicus* ramparts, such as the absence of a ditch in front of it, argued as evidence that defence was not their primary purpose (Collis 2010, 31). Such perspectives have been questioned (Moret 2018) and may owe more to modern preconceptions of the nature of Iron Age warfare than a real lack of defensive intention.

It seems likely that these boundaries fulfilled numerous roles, both practical and symbolic. Considering the suggested nature of Late Iron Age society as oligarchic (or heterarchical), one where power was contested between rival families, the monumentalized nature of ramparts is potentially significant. Their construction emphasizes the need for an elite to mobilize the community to make repeated statements of social control (Rieckhoff 2014). That such labour was expended on an aspect which defined (physically and symbolically) the community may indicate how power was part of a negotiated process that connected elites to the wider community, some-

thing implied by classical writers (Fernández-Götz 2014; Moore 2017a). Construction of the ramparts should, therefore, be regarded as more than a process of defining the extent of the settlement, with the act of construction (and reconstruction) representing an inclusive process which reinforced group identity (Woolf 1993, 232).

The scale of such ramparts, in length, but also in their dramatic appearance, was also potentially significant. Inhabitants, visitors, and other communities would have been well aware of what such ramparts represented in terms of labour consumption, demonstrating the power of the community involved (Collis 2010, 31). Such scale should be considered not only in absolutes terms, but also how it compared with the scale of preceding and contemporary settlements (Moore 2020). As appears to be the case for some other mega-sites around the world (e.g., Co Loa and Great Zimbabwe) the scale of these complexes was designed to reflect the power of these places and the communities who constructed them. The scale of construction at *oppida* thus displays an element of theatre as well as a demonstration of practical military power. The materiality of these ramparts, occasionally of foreign form, such as the western *murus gallicus* style rampart at the eastern *oppidum* of Manching, may well have also added a form of 'exotic knowledge' (Helms 1988) demonstrating the long-distance connections of its inhabitants.

The ramparts also seem to have sometimes been designed to choreograph movement towards, through, and around these complexes. Such practices may explain the arrangement of ramparts at *oppida* like Heidengraben and Zavist which created impressive approaches to elements of the complex, particularly high-status or ritual enclosures. The situating of industry on the peripheries of some complexes or close to the entrance, as at Bibracte, might also be significant, requiring visitors to pass-by this statement of control over production as they moved towards focal places in the complex (Moore 2017a). At Manching, it is notable that the focus of the site, the central temple, was situated equidistant, and probably clearly visible, from the eastern and southern gates (Sievers 2012). Here too the symbolic role of the walls in defining it as a political, economic, and sacred space, distinctive in the wider social landscape, cannot be underestimated (Rieckhoff 2021, 118, 132; Wendling 2021, 159).

Environment and Economy

Many definitions of urbanism rest significantly on the relationship between central places and their hinterlands (Smith 2020). Despite recognition that *oppida* can only be understood in relation to their environs (Collis 1984, 189; Danielisová 2014), our appreciation of the relationships between *oppida* and their hinterlands remains somewhat limited. For some examples, such as Condé-sur-Suippe and Villeneuve-St-Germain in northern France, and possibly some *oppida* in Bohemia, there is evidence of nucleation of rural settlement within their bounds (Danielisová 2014; Haselgrove 1996). Elsewhere, the role of rural settlements as suppliers of resources seems likely.

Pollen and other environmental evidence indicate that the immediate environs of both Bibracte and Manching witnessed increased deforestation and arable exploitation in the Late Iron Age (Jouffroy-Bapicot and others 2013; Peters 2004). The poor soils in the area around Bibracte suggest much of the farming was likely to have been pastoral in nature, however, and it is assumed that significant quantities of cereal crops were imported into the *oppidum* (Petřík and others 2021; Wiethold 2011). At Manching the presence of numerous buildings interpreted as granaries, suggests the storage of cereals produced in the local environs (Eller n.d.; Winger 2015) but with farming also taking place in its bounds (Küster 2013). For some other *oppida*, evidence suggests households still managed agricultural resources from the *oppidum*, farming the immediate hinterland (Danielisová 2014, 81; Moore and Fernández-Götz 2022). Despite relatively limited data, a similar situation may be envisaged for Bibracte and Manching even if large amounts of foodstuff were also imported.

At many *oppida*, open spaces within the enclosure seem unlikely to have been just for public assembly. Even at the more densely occupied *oppida*, including Bibracte and Manching, they likely incorporated areas for farmland and small-scale management of livestock and horticulture. Despite the likelihood of agricultural production both within the walls and immediate environs of both our case studies, these and other *oppida* were frequently not located in areas of prime agricultural land. Bibracte was poorly located to access the better arable land of the adjacent Arroux Valley. Manching's location has also been argued to be in relatively poor farmland (Wendling 2013). *Oppida* elsewhere appear to have often been positioned in landscapes which were relatively marginal (Moore 2020). This indicates that the location of *oppida* was based more on

other factors, such as the location's earlier social significance (as discussed above), the need to be on routeways, or access to natural resources.

Mining and Natural Resources

Something that distinguishes *oppida* from earlier Iron Age agglomerated settlements is their placement close to natural resources. Mining, for copper, silver, and lead, appears to have been widespread in and around Bibracte, with the mining on Mont Beuvray potentially related to coinage manufacture (Cauuet 2020). Mining may have been some of the earliest activities at the site, in the second century BC, although it continued into the first century BC. At Manching the proximity of iron bog ore seems to have been a factor in the choice of location and there is evidence of significant iron working at the complex using these ores (Schwab and others 2006; Wendling 2013, 463). This was the case at other *oppida* such as Kelheim, although it is unlikely that this was the sole rationale for the choice of these locations; the latter, for example, was also strategically positioned at an important river confluence.

This control of natural resources corresponds with roles as centres of production, including dedicated manufacturing areas. At Bibracte the area around La Côme du Chaudron (Fig. 9.5) alongside one of the main routes into the complex provides evidence of structures housing specialist bronze and iron working (Dhennequin, Guillaumet, and Szabó 2008). This intensification of manufacturing appears evident in the Bibracte region with evidence of higher industrial pollution in the Late Iron Age (Jouffroy-Bapicot and others 2013, 1899). At Manching specialized manufacture is also evident, including bronze, iron, glass working, and coin minting (Sievers 2007, 73–82). Much of this activity took place in the southern Altenfeld area and beyond, which appears to have been a specialist craftworking district (Sievers, Leicht, and Ziegaus 2013).

Trade and Exchange

A fundamental role of *oppida* was as centres of trade and exchange. *Oppida* were located close to major routeways, often in the form of proximity to major rivers. Manching was located on the intersection of important trade routes, with the Danube immediately to the north and an oxbow on the River Paar, a tributary, acting as port for conducting trade (Leopold and Völkel 2013; Sievers 2007, 39–40; Völkel and Leopold 2007). Bibracte, overlooking the Arroux Valley is also located on an important north–south route, which had been used to connect with the Mediterranean world since the sixth century BC. In the second/first century BC, the Rhône–Saône–Yonne–Seine connection was an important trade route between the Mediterranean world and *oppida* in Gaul. This association with routeways and the presence of large amounts of Roman imports at Manching and Bibracte, particularly in the form of Roman amphorae, has led to the suggestion that one of their roles was controlling trade with Rome. Certainly at large *oppida* like Bibracte and Corent the amount of wine being imported and consumed was significant, estimated to have been as much as 20,000 litres per annum at the latter (Poux 2012, 134). At Manching, by *c.* 200 BC imports of amphorae, as well as occasionally more exotic goods, were arriving from the Roman and Greek world (Stöckli 1979; Will 1987). The quantity of amphorae at Manching — indeed the easternmost find-spot of republican amphorae — is far lower than at Bibracte, however. This may suggest a different nature to the trade with Rome or that it was part of a rather distinct process of transalpine transport, perhaps utilizing wooden barrels (Brestel 2021). Finds such as amber from the Baltic and coins from a range of other Iron Age communities also reveal how Manching was connected, as was the case at many *oppida*, to a complex network of indigenous trade and exchange systems across Europe. Specialized structures, including the long houses and an enclosed commercial area at Manching (Wendling 2018) and possibly some of the rectangular buildings at Bibracte, like that at PC15 (Fig. 9.8), may have been structures where markets took place.

Evidence from classical sources that Roman traders lived within *oppida* also supports the notion that they were trade centres (Collis 2000, 236). We should be wary of privileging classical perspectives, however. Just because Rome saw these as appropriate centres for conducting trade does not mean this was their main function. We may also be drawing distinctions between economic behaviour and ritual practice which were intimately related in Late Iron Age society. As Mathieu Poux (2004) has emphasized, the nature of Roman imports (largely for the consumption of wine), their treatment, and deposition on sanctuary sites, and in rich burials, emphasizes the main role of these goods was in ritual and commensality. *Oppida* roles in such activities, may therefore have stimulated such trade, rather than it being caused by Roman economic expansion.

Decline and Demise

The end of *oppida* in Europe is overshadowed by the expansion of the Roman Empire. The conquest of Gaul in the mid-first century BC and Britain in the mid-first century AD led to the imposition of a Roman model of urbanism across much of western Europe. Many *oppida* were abandoned for more ostensibly suitable urban locations nearby, for example Gergovie and Corent for Augustonemetum (Clermont Ferrand) and Pommiers for Augusta Suessionum (Soissons). Other *oppida* were directly replaced by Roman towns, in France, as far apart as Bourges, in the west, to Metz in the east, and in Britain at towns such as Silchester and Colchester. In many ways, this continuity of place emphasizes Rome's recognition of *oppida*'s social, political, and administrative importance.

The decline of Bibracte indicates how Rome's incorporation of these centres was a drawn-out process. Rather than immediately abandoned, occupation at Bibracte flourished at the time, and in the immediate aftermath, of the Roman conquest, receiving numerous major buildings, many in stone. The construction of temperate Europe's earliest basilica in *c.* 50–30 BC signalled a remodelling of activity while stressing the social and political importance of the site. This undoubtably partly reflected the Aedui's favourable attitude towards Rome and it remained the administrative centre for this region after the Roman conquest. Neither the density of buildings nor the amount of imports decreased at this time.

Around AD 10, Bibracte was replaced by a new urban foundation at Augustodunum (modern Autun), *c.* 20 km to the north-east. This was part of a widespread reorganization of the urban infrastructure of Gaul in the Augustan period which may have been both prosaic, allowing for more strategically situated urban centres on the Roman road network (Barral and Nouvel 2012), and part of a process of imposing a new social order (Fernández-Götz 2019b, 58). Even before its abandonment, activity at Bibracte had changed markedly. Towards the end of the first century BC the craftworking areas were largely abandoned or relocated from former craftworking quarters to other areas. At PC01, the building was once again rebuilt and craft areas moved into former centres of the civic buildings. There was also a focus on occupation of elaborate houses, such as that at PC1, while the sanctuary areas continued to be occupied into the AD 20s (Guichard, Meunier, and Paris 2018). Evidence in some areas that large-scale terracing for structures was taking place in the final decades of the first century BC (Barrier 2014), suggests too that the move to Augustodunum was not necessarily anticipated. The end of Bibracte as an *oppidum* thus represents not so much a gradual decline, but rather a planned resettlement of the population to Augustodunum. Here the indigenous elites and the wider population could now profit from the connection to the Roman trade network under Augustus, whose trade route from Areale on the Mediterranean via Lugdunum and Cavillonum to Bononia on the Atlantic led through Augustodunum.

Their replacement by Roman towns did not mean the *oppida* were simply forgotten, however. Bibracte is a case in point. The Iron Age sanctuaries were replaced with Gallo-Roman temples which continued in use throughout the Roman era. At Sources de l'Yonne, although occupation also declined around the same time, here too the sanctuaries were redeveloped (Moore and others 2013; Moore and Hoppadietz 2019). The role of *oppida* as ritual foci continued at other *oppida*, with the construction of Roman sanctuaries, for example at Titelberg and Alésia. In Britain, some Roman temples were constructed on the site of what had been important Late Iron Age burials within the *oppida*, for example at Verulamium and Camulodunum (Creighton 2006). Elsewhere, in Britain, rather like the construction of the high-status houses on Bibracte, the construction of early Roman villas within *oppida*, like Bagendon, suggests a continued importance of these places even after the abandonment of their roles as centres for production and exchange (Moore 2020). Activities at *oppida* like Bibracte indicate that they remained symbolically significant places. This implies a desire for these locations to remain as *lieux de mémoire* (Golosetti 2017) affirming local identity as societies reformed in the new imperial context. In some cases these may have represented 'fictive memory', designed to mask changing power relations (Moore 2011). Nonetheless, *oppida* remained important in affirming community identity, with a perceived need to reference these earlier monuments. Such connections might even be recognized in the form of the Roman towns which replaced the *oppida*, with the scale of the walls and areal extent of Augustodunum mimicking its predecessor at Bibracte (Woolf 2006, 271).

The situation at Manching represents a different picture. The settlement was abandoned before Rome arrived in the area. The *oppidum* declined in the 80s BC, with fewer imports and a diminishing population, eventually abandoned by the mid-first century BC (Wendling 2013, 481). This was part of a wider pattern for the decline of many *oppida* in central Europe, such as Závist (Salač 2012). The date of this decline suggests it was unrelated to the expansion of the Roman Empire (Fernández-Götz 2019b, 56) although the possibility that the Gallic Wars of the

mid-first century BC destabilized the wider *oppida* network remains a possibility. The decline of *oppida* in central Europe has been attributed to a variety of external forces such as migrating peoples, from Italy or northern Germany, epidemics, or shifts in trade networks that bypassed Manching (Rieckhoff 2002; Rieckhoff and Rösch 2019; Salač 2014, 73). The instability of the *oppida* phenomenon itself and the declining ability of the hinterland to sustain a large population has also been suggested as being key to Manching's decline (Wendling 2013, 418). Salač (2012) has suggested that as populations increased their reliance on foodstuffs from elsewhere and their location away from the best economic routeways was unsustainable. According to this thesis, such a trajectory should also be true for *oppida* such as Bibracte, which were located at unpromising altitudes and close to, but not directly on, important transport routes. Therefore, decline would have been inevitable even without the restructuring undertaken by Rome. The fact that, by contrast, Bibracte continued to flourish after the Gallic Wars (as outlined above) indicates that Salač's (2012) thesis clearly did not apply to all *oppida*. Instead, Bibracte's abandonment appears not to have been caused by economic necessity or predetermined by a lack of resources but was instead a conscious political decision by Aeduan elites to exchange life in what remained a successful *oppidum* for life in the newly established Gallo-Roman town of Augustodunum (Hoppadietz forthcoming).

We have tended to see the development of *oppida* as part of social evolution: the necessary growth of more complex central places as populations grew and societies became more complex. The decapitation of *oppida* by Rome may, however, mask what was a relatively cyclical process of nucleation and dispersal seen in Iron Age Europe (Fernández-Götz 2020). Salač (2012) has noted that the emergence and decline of central agglomerations in later prehistory seems relatively common. For example, the earlier phase of massive sites, in the sixth–fifth centuries BC, similarly appeared and disappeared in a relatively short space of time, with expansion followed by reduction to a smaller core and eventual demise. Despite the extent of recent work at some late Hallstatt centres there remains little evidence that these sites continued (at least in any 'urban' form) into the fourth–third centuries BC (Milcent 2014, 49).

The relatively short duration of some of these complexes may reflect their relatively unsuitable locations for sustaining large populations. If many *oppida* relied on producing their own foodstuffs, we might be witnessing a final explosion of activity, brought about by their monopolistic political and economic pre-eminence, but one which was unsustainable. Population decline more generally in the first century BC has been noted in certain regions of Europe (Haselgrove and Guichard 2013; Nikulka 2016), although the reasons for this are unclear. A link to disruption from the Gallic Wars and climate change have both been suggested, although the apparent absence of such a decline in other parts of Europe suggests potentially relatively localized causes. Whilst Salač (2012) sees the abandonment of *oppida* largely as a question of resource exhaustion, it is also worth considering how the congregation of such large numbers of people may have led to internal social instability due to increased tension over wealth inequalities (Wendling 2013). Based largely on forms of clientage, Late Iron Age societies were inherently unstable, with the dynamic patterning of *oppida* and open settlements potentially reflecting the fluidity of power within, and between, communities (Moore and Ponroy 2014, 152; Sievers 2008, 16). We must also consider that the very act of bringing groups together would have created new social dynamics and relationships, as well as new ways of obtaining and expressing power. Like Manching, some Gallic *oppida* such as Condé-sur-Suippe declined well before the impact of Roman conquest and were only occupied for around forty years. At the latter, the complex seems likely to have represented the majority of the community nucleated in a single centre. The tensions such processes may have created may not have been foreseen if the key motive in choosing these locations was not economic but based on their existing social significance (Moore 2017a, 296).

It is notable that those *oppida* which continued in the Roman period were often those which were situated directly on routeways (e.g., Paris, Chartres, Besançon, Metz, St Albans). These centres may not have differed entirely in their roles from other *oppida* (Moore and Ponroy 2014), but their continuity may tell us more about their potential as urban centres in classical and modern terms than their success as centres for Iron Age agglomeration. Here we may be seeing a somewhat similar distinction between 'upstarts' and 'hubs' noted elsewhere (Lawrence and Wilkinson 2015), with upland *oppida* representing relatively short bursts of social requirements in contrast to more sustainable settlement trajectories. We should be wary, however, of privileging a particular concept of urban success. Although some *oppida* saw relatively short floruits, they were in many cases important social centres for over two hundred years and the long biographies of the location of many *oppida* suggest they were, and remained, important social foci. Considering the relatively fragile nature

of Roman urbanism in many areas of Europe and the lack of a resurgence of urbanism in some areas of Europe until the medieval era (Collis 2014, 21), we may consider that nucleated urbanism could also be unstable.

Oppida and 'Anomalous Giants'

Although Bibracte and Manching cannot be taken as necessarily indicative of the trajectory and role of all agglomerations of the Late Iron Age they represent useful exemplars with which to consider the nature of the *oppida* phenomena and reflect on its similarity to other forms of urbanism (Moore 2017b; Moore and Fernández-Götz 2022; Winger 2017; 2021).

The trajectories and roles of *oppida* share some important traits with several other Anomalous Giants discussed in this volume and elsewhere. Significant is the tendency, even at *oppida* which were at the more densely inhabited end of the spectrum, towards low-density occupation (Moore 2017b). This is shared with a range of African and Mesoamerican settlements which, while of large areal extent, have low-density occupation and significant open areas within their bounds. The dispersed and polyfocal nature of some *oppida*, seen more at complexes in Britain and perhaps others like the Heidengraben (Moore 2012; 2017a), also shares some characteristics with other anomalous sites like Great Zimbabwe, or Mesoamerican and Hawaiian urban centres (cf. Smith 2012; Isendahl and Smith 2013).

The reasons for this low-density occupation remain uncertain in the case of *oppida*, but there are indications that they were partly economic, relating to the presence of farming within the bounds of the complex reflecting low-density urban centres around the world (Fletcher 2009; Moore and Fernández-Götz 2022). It may also mark the process of transposing rural settlement forms into a new more nucleated centre. This was partly a social, as much as economic, process attempting to retain the identity and power of rural communities in the process of nucleation and agglomeration (Moore and Fernández-Götz 2022). Such a desire to retain the power and identity of rural communities in a quasi-urban setting can be seen in the western African giant 'villages', such as Umor in Nigeria and Tallensi and LoDagaba in Ghana (Fletcher 2019; Moore and Fernández-Götz 2022) and perhaps Neolithic Trypillia (Chapman and others 2014). This may indicate that in addition to any apparent technical constraints on settlement density (Fletcher 1995), the low-density nature of some 'Anomalous Giants' might reflect broader social commonalities. This seems to have been negotiated or heterarchical forms of power, similar to many Anomalous Giants, which contrasted more nucleated urbanism. This tension in how power operated might also be reflected in the emphasis on open areas for assembly within many *oppida* something also seen in the central area at Neolithic Trypillia (Chapman and others 2014) and communal meeting-places within some African 'giant villages' (Moore 2017a), although neither are directly analogous to the *oppida*. At the same time, commonalities between the architecture and layout of some *oppida* with cities in the classical Mediterranean world (Wendling 2018; Winger 2017) suggest that Iron Age societies were experimenting with processes of social and power centralization, drawing upon the needs of existing social organization and the influence of external sources.

The low-density nature of *oppida* may also be explained by the way in which they created landscape as arenas for display. At Bibracte, like many *oppida*, the arrangement of the complex suggests that movement into and through these complexes was as much about creating an impressive experience (Rieckhoff 2014) which demonstrated the power of its inhabitants and elites (Moore 2017a). In this there are affinities with complexes like Great Zimbabwe, suggesting that low-density was as much a product of how *oppida* positioned elements of activity in certain areas to convey a sense of power rather than just physical constraints.

As with other Anomalous Giants that developed in dialogue with a nearby empire, such as Co Loa in Vietnam (Kim, Lai, and Trinh 2010), the role of the Roman Empire in the development and decline of *oppida* remains hard to disentangle from long-term social and economic dynamics. Indeed, *oppida* caution us against dichotomies between internal or external causation (Fletcher 2004, 131). A range of changes were taking place across the later first millennium BC, some at a continental scale (such as population increase), others far more localized. The varied form of *oppida* suggests such pressures were dealt with in different ways. It is not a case of whether Roman imperial expansion caused the emergence of *oppida*, but rather how Iron Age societies reacted to the range of changes, and how underlying factors (including existing social systems, economies, religious beliefs) influenced those choices.

The relatively short-lived nature of *oppida*, at least as large, relatively densely occupied centres, is also reminiscent of various Anomalous Giants. For *oppida* this may be partly related to the instability of their social cohesion and the unstable nature of power in the Late Iron Age societies. It may in part also be due to a reliance on resources from elsewhere

and exchange as drivers in their economic basis. As Fletcher's (1995) analysis has revealed, agrarian societies' creation of low-density urbanism allows them to bypass the constraints of nucleated urbanism, although the stability of such agglomerations remains open to question.

Conclusions

Discussions of *oppida* have often struggled to find alternatives to neo-evolutionary models of urbanism and state formation. Evidence that *oppida* may have been part of a cyclical process of centralization and decentralization (Fernández-Götz 2018; Salač 2012), alongside the volatility seen in some rural settlement patterns at this time, emphasizes that these societies were far from stable. The diversity of *oppida* reflects a range of alternative mechanisms to managing social complexity and were not a planned trajectory to centralized states, but adaptations to a range of internal and external pressures. Some of the solutions resulted in places and structures which were potentially unstable or unsustainable. The congregating of heterarchical societies may have been an original intention, but the monumentalizing of social centres and permanency of communities, alongside the growth of specialists, is likely to have led to unintended outcomes. In some cases, this may have led to the disbandment of the experiment, whilst others morphed into different social and architectural forms. To provide explanatory frameworks for *oppida*, it is increasingly useful to move away from the geographically and theoretically isolated nature of European Iron Age studies to place *oppida* in the broader context of centralization in Africa, the Americas, and beyond, rather than solely comparing it with classical urbanism. There are indications that such comparisons suggest *oppida* were part of a wider alternative trajectory of societies to accommodate the needs of larger social systems with central places that varied from classical urban norms.

Abbreviations

Caes., *B Gall.* Caesar, *De bello Gallico*

Works Cited

Ade, D., M. Fernández-Götz, L. Rademacher, G. Stegmaier, and A. Willmy. 2012. *Der Heidengraben: Ein keltisches Oppidum auf der Schwäbischen Alb* (Stuttgart: Theiss).

Almagro-Gorbea, M. and J. Gran-Aymerich. 1991. *El Estanque Monumental de Bibracte* (Madrid: Editorial Complutense).

Barral, P. and P. Nouvel. 2012. 'La dynamique d'urbanisation à la fin de l'âge du Fer dans le Centre-Est (Bourgogne–Franche-Comté)', in S. Sievers and M. Schönfelder (eds), *Die Frage der Protourbanisation in der Eisenzeit / La question de la proto-urbanisation à l'âge du Fer*, Kolloquien zur Vor- und Frühgeschichte, 16 (Bonn: Habelt), pp. 139–64.

Barrier, S. 2014. 'Réflexions sur la fin de l'occupation de Bibracte et sa fréquentation durant le Haut et le Bas-Empire', in V. Guichard (ed.), *Études sur Bibracte*, II (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 315–50.

Bradley, R., C. Haselgrove, M. Vander Linden, and L. Webley. 2016. *The Later Prehistory of North-West Europe: The Evidence of Development-Led Fieldwork* (Oxford: Oxford University Press).

Brestel, T. J. 2019. 'Rural Settlement Patterns in Urbanised Areas: The *Oppidum* of Manching', in D. Cowley, M. Fernández-Götz, T. Romankiewicz, and H. Wendling (eds), *Rural Settlement: Relating Buildings, Landscape and People in the European Iron Age* (Leiden: Sidestone), pp. 201–08.

——. 2021. 'Von Wasser und Wein: Die Brunnen und Fässer im Oppidum von Manching', in S. Fichtl and H. Wendling (eds), *L'Urbanisation aux âges du Fer / Urbanisierung in der Eisenzeit, Journées d'études de Strasbourg en l'honneur de Susanne Sievers / Studientag von Straßburg, Susanne Sievers Gewidmet* (Strasbourg: AVAGE. Mémoires d'archéologie du Grand Est), pp. 137–54.

Brun, P. and P. Ruby. 2008. *L'Âge du Fer en France: premières villes, premiers états celtiques* (Paris: La Découverte).

Buchsenschutz, O. 2007. *Les Celtes de l'Âge du Fer* (Paris: Armand Colin).

——. 2015. 'Du bourg à l'oppidum', in O. Buchsenschutz (ed.), *L'Europe celtique à l'âge du Fer: VIII^e – I^er siècles* (Paris: Presses Universitaires de France), pp. 303–07.

Buchsenschutz, O., J.-P. Guillaumet, and I. Ralston. 1998. *Les remparts de Bibracte: recherches récentes sur la Porte du Rebout et le tracé des fortifications* (Glux-en-Glenne: Bibracte, Centre archéologique européen).

Buchsenschutz, O. and I. Ralston. 2012. 'Urbanisation et aristocratique celtiques', in S. Sievers and M. Schönfelder (eds), *Die Frage der Protourbanisation in der Eisenzeit / La question de la proto-urbanisation à l'âge du Fer*, Kolloquien zur Vor- und Frühgeschichte, 16 (Bonn: Habelt), pp. 347–64.

Cauuet, B. 2020. 'Archéologie minière: étude isotopique de minerais et de monnaies d'argent de Bibracte', in V. Guichard (ed.), *Rapport annuel 2020 du programme quadriennal de recherche 2013–2016 sur le Mont Beuvray* (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 101–12.

Chapman, J., M. Videiko, D. Hale, B. Gaydarska, N. Burdo, K. Rassmann, C. Mischka, J. Müller, A. Korvin-Piotrovskiy, and V. Kruts. 2014. 'The Second Phase of the Trypillia Mega-Site Methodological Revolution: A New Research Agenda', *European Journal of Archaeology*, 17.3: 369–406.

Chaume, B. 2020. 'Vix: The Temptation of the City', in L. Zamboni, M. Fernández-Götz, and C. Metzner-Nebelsick (eds), *Crossing the Alps: Early Urbanism Between Northern Italy and Central Europe (900–400 BC)* (Leiden: Sidestone), pp. 349–60.

Collis, J. 1984. *Oppida: Earliest Towns North of the Alps* (Sheffield: Department of Prehistory and Archaeology, University of Sheffield).

——. 2000. '"Celtic" *oppida*', in M. H. Hansen (ed.), *A Comparative Study of 30 City-State Cultures: An Investigation Conducted by the Copenhagen Polis Centres* (Copenhagen: Reitzel), pp. 229–40.

——. 2010. 'Why Do We Still Dig Iron Age Ramparts?', in S. Fichtl (ed.), *Murus celticus: architecture et fonctions des remparts de l'âge du Fer* (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 27–36.

——. 2014. 'Urbanisation in Temperate Europe in the Iron Age: Mediterranean Influences or Indigenous?', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 15–23.

Creighton, J. 2000. *Coins and Power in Late Iron Age Britain* (Cambridge: Cambridge University Press).

——. 2006. *Britannia: The Creation of a Roman Province* (London: Routledge).

Creighton, J., C. Haselgrove, P. Lowther, and T. Moore. 2008. 'Becoming Roman in Southern Burgundy: A Field Survey between Autun and Bibracte in the Arroux Valley (Saône-et-Loire), 2000–2003', *Internet Archaeology*, 25 <https://doi.org/10.11141/ia.25.3>.

Cunliffe, B. 1988. *Greeks, Roman and Barbarians: Spheres of Interaction* (London: Batsford).

Danielisová, A. 2014. 'Oppida, Production and Social Status: Complexity of the Late La Tène Period in Central Europe', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 76–83.

Dhennequin, L., J.-P. Guillaumet, and M. Szabó. 2008. 'L'Oppidum de Bibracte (Mont Beuvray, France). Bilan de 10 années de recherches (1996–2005)', *Acta archaeologica Academiae scientiarum Hungaricae*, 59: 1–152.

Dietler, M. 1998. 'A Tale of Three Sites: The Monumentalization of Celtic *oppida* and the Politics of Collective Memory and Identity', *World Archaeology*, 30.1: 72–89.

Eller, M. n.d. 'Das latènezeitliche Umland des Oppidums von Manching' (unpublished doctoral thesis, University of Heidelberg).

Eller, M., S. Sievers, H. Wendling, and K. Winger. 2012. 'Zentralisierung und Urbanisierung. Manchings Entwicklung zur spätkeltischen Stadt', in S. Sievers and M. Schönfelder (eds), *Die Frage der Protourbanisation in der Eisenzeit / La question de la proto-urbanisation à l'âge du Fer*, Kolloquien zur Vor- und Frühgeschichte, 16 (Bonn: Habelt), pp. 303–18.

Fernández-Götz, M. 2014. 'Reassessing the *oppida*: The Role of Power and Religion', *Oxford Journal of Archaeology*, 33.4: 379–94.

——. 2016. 'Revisiting Migrations in Archaeology: The Aisne-Marne and the Hunsrück-Eifel Cultures', in G. Erskine, P. Jacobsson, P. Miller, and S. Stetkiewicz (eds), *Proceedings of the 17th Iron Age Research Student Symposium, Edinburgh, 29th May – 1st June 2014* (Oxford: Archaeopress), pp. 1–11.

——. 2018. 'Urbanization in Iron Age Europe: Trajectories, Patterns, and Social Dynamics', *Journal of Archaeological Research*, 26.2: 117–62.

——. 2019a. 'Coming Together in the Iron Age: Population Aggregation and Urban Dynamics in Temperate Europe', in A. Gyucha (ed.), *Coming Together: Comparative Approaches to Population Aggregation and Early Urbanization* (New York: State University of New York Press), pp. 81–104.

——. 2019b. 'A World of 200 *oppida*: Pre-Roman Urbanism in Temperate Europe', in L. de Ligt and J. Bintlif (eds), *Regional Urban Systems in the Roman World, 150 BCE–250 CE* (Leiden: Brill), pp. 35–66.

——. 2020. 'Urbanisation and Deurbanisation in the European Iron Age: Definitions, Debates, and Cycles', in L. Zamboni, M. Fernández-Götz, and C. Metzner-Nebelsick (eds), *Crossing the Alps: Early Urbanism between Northern Italy and Central Europe (900–400 BC)* (Leiden: Sidestone), pp. 27–42.

Fernández-Götz, M. and D. Krausse. 2013. 'Rethinking Early Iron Age Urbanisation in Central Europe: The Heuneburg Site and its Archaeological Environment', *Antiquity*, 87: 473–87.

Fernández-Götz, M., H. Wendling, and K. Winger (eds). 2014. *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow).

Feugere, M. and R. Gebhard. 1995. 'Die Glasgefaßfragmente aus Manching', *Germania*, 73.2: 504–11.

Fichtl, S. 2005. *La ville celtique: les oppida de 150 av. J.-C. à 15 ap. J.-C.*, 2nd edn (Paris: Errance).

——. 2013. 'Les agglomérations gauloises de la fin de l'âge du Fer en Europe celtique (III^{e}–I^{er} siècle av. J.-C.)', in D. Garcia (ed.), *L'habitat en Europe celtique et en Méditerranée préclassique* (Paris: Actes Sud), pp. 19–43.

——. 2019. 'Middle and Late La Tène Rural Aristocratic Establishments in Gaul', in D. Cowley, M. Fernández-Götz, T. Romankiewicz, and H. Wendling (eds), *Rural Settlement: Relating Buildings, Landscape, and People in the European Iron Age* (Leiden: Sidestone), pp. 219–32.

——. 2021. *De la ferme à la ville: l'habitat à la fin de l'âge du Fer en Europe celtique* (Paris: Errance).

Fichtl, S., P. Barral, G. Pierrevelcin, and M. Schönfelder (eds). 2019. *Les agglomérations ouvertes de l'Europe celtique (III^{e}–I^{er} s. av. J.-C) / Offene Großsiedlungen im Keltischen Europa (3.–1. Jh v. Chr.)* (Strasbourg: AVAGE).

Fichtl, S., J. Metzler, and S. Sievers. 2000. 'Le rôle des sanctuaires dans le processus d'urbanisation', in V. Guichard, S. Sievers, and O. Urban (eds), *Les processus d'urbanisation à l'âge du Fer: actes du colloque, Glux-en-Glenne, 8–11 juin 1998* (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 65–72.

Fletcher, R. 1995. *The Limits of Settlement Growth* (Cambridge: Cambridge University Press).

——. 2004. 'Materiality, Space, Time and Outcome', in J. Bintliff (ed.), *The Blackwell Companion to Archaeology* (Oxford: Blackwell), pp. 110–40.

——. 2009. 'Low-Density, Agrarian-Based Urbanism: A Comparative View', *Insights*, 2.4: 2–19.

——. 2019. 'Trajectories to Low-Density Settlements Past and Present: Paradox and Outcomes', *Frontiers in Digital Humanities*, 6.14: 1–21.

Franconi, T. and C. Gosden. 2021. 'Long-Term Interactions between Society and Ecology', in C. Gosden, C. Green, A. Cooper, M. Creswell, V. Donnelly, T. Franconi, F. Glyde, Z. Kamash, S. Mallet, L. Morley, D. Stansbie, and L. Ten Harkel (eds), *English Landscapes and Identities: Investigating Landscape Change from 1500 BC to AD 1086* (Oxford: Oxford University Press), pp. 107–48.

Goláňová, P., M. Hajnalová, L. Lisá, P. Milo, L. Petr, and M. Fránková. 2020. 'Investigating the Complex Story of One Ditch: A Multidisciplinary Study of Ditch Infill Provides Insight into the Spatial Organisation within the *Oppidum* of Bibracte (Burgundy, France)', *PLoS ONE*, 15.4: e0231790.

Golosetti, R. 2017. 'Cult Places at Former Oppida in South-East Gaul, Questions of Memory, Tradition and Identity', *Oxford Journal of Archaeology*, 36.2: 171–95.

Gruel, K. and O. Buchsenschutz. 2015. 'Un urbanisme perché', in O. Buchsenschutz (ed.), *L'Europe celtique à l'âge du Fer: VIII^e – I^er siècles* (Paris: Presses Universitaires de France), pp. 307–15.

Gruel, K. and D. Vitali. 1998. 'L'oppidum de Bibracte: un bilan de onze années de recherche (1984–1995)', *Gallia*, 55: 1–140.

Guichard, V. 2014. '150 Years of Research at Bibracte: A National vs. European Perspective', in C. von Carnap-Bornheim (ed.), *Quo vadis? Status and Future Perspectives of Longterm Excavations in Europe: Papers Presented at a Workshop Organized by the Archaeological State Museum (ALM) and the Centre for Baltic and Scandinavian Archaeology (ZBSA) on the Occasion of the 175th Anniversary of the Archaeological State Museum, Schleswig, October 26th to 28th, 2011* (Neumünster: Wachholtz), pp. 117–36.

Guichard, V., A. Meunier, and P. Paris. 2018. 'Chronique des recherches sur le Mont Beuvray: 2013–2016', *Revue archéologique de l'Est*, 67.190: 151–211.

Haselgrove, C. 1996. 'Roman Impact on Rural Settlement and Society in Southern Picardy', in N. Royman (ed.), *From the Sword to the Plough* (Amsterdam: Amsterdam University Press), pp. 127–88.

——. 2016. *Cartimandua's Capital? The Late Iron Age Royal site at Stanwick, North Yorkshire, Fieldwork and Analysis 1981–2011*, Council for British Archaeology Research Report, 175 (York: Council for British Archaeology Research Report).

Haselgrove, C. and V. Guichard. 2013. 'Les Gaulois sont-ils dans la plaine? Reflections on Settlement Patterns in Gaul in the First Century BC', in S. Krausz, A. Colin, K. Gruel, I. Ralston, and T. Dechezleprêtre (eds), *L'âge du Fer en Europe: mélanges offerts à Olivier Buchsenschutz* (Paris: Ausonius), pp. 317–28.

Helms, M. 1988. *Ulysses' Sail: An Ethnographic Odyssey of Power, Knowledge and Geographical Distance* (Princeton: Princeton University Press).

Hill, J. D. 2007. 'The Dynamics of Social Change in Later Iron Age Eastern and South-Eastern England *c.* 300 BC–AD 43', in C. Haselgrove and T. Moore (eds), *The Later Iron Age in Britain and Beyond* (Oxford: Oxbow), pp. 16–40.

Hoppadietz, R. Forthcoming. *Urbane Transformationsprozesse und Räumliche Dynamik als Zeugnis Kulturellen Wandels: Untersuchungen im spätlatènezeitlichen Oppidum Bibracte (Burgund/Frankreich)*.

Isendahl, C. and M. E. Smith. 2013. 'Sustainable Agrarian Urbanism: The Low-Density Cities of the Mayas and Aztecs', *Cities*, 31: 132–43.

Jouffroy-Bapicot, I., B. Vannière, E. Gauthier, H. Richard, F. Monna, and C. Petit. 2013. '7000 Years of Vegetation History and Land-Use Changes in the Morvan Mountains (France): A Regional Synthesis', *The Holocene*, 23.12: 1888–1902.

Kaenel, G. 2016. *L'an -58: Les Helvètes; archéologie d'un peuple celte* (Lausanne: Presses Polytechniques Romandes).

Kim, N., Lai Van Toi, and H. H. Trinh. 2010. 'Co Loa: An Investigation of Vietnam's Ancient Capital', *Antiquity*, 84: 1011–27.

Krämer, W. 1985. *Die Grabfunde von Manching und die latènezeitlichen Flachgräber in Südbayern*, Ausgrabungen in Manching, 9 (Stuttgart: Steiner).

Krämer, W. and F. Schubert. 1970. *Die Ausgrabungen in Manching 1955–1961: Einführung und Fundstellenübersicht*, Ausgrabungen in Manching, 1 (Wiesbaden: Steiner).

Krausse, D., M. Fernández-Götz, L. Hansen, and I. Kretschmer. 2016. *The Heuneburg and the Early Iron Age Princely Seats: First Towns North of the Alps* (Budapest: Archaeolingua).

Küster, H. 2013. 'Neue Botanische Analysen an Fundgut aus dem latènezeitlichen Manching', in S. Sievers, M. Leicht, and B. Ziegaus (eds), *Ergebnisse der Ausgrabungen in Manching-Altenfeld 1996–1999* (Wiesbaden: Reichert), pp. 737–44.

Lawrence, D. and T. Wilkinson. 2015. 'Hubs and Upstarts: Pathways to Urbanism in the Northern Fertile Crescent', *Antiquity*, 89.344: 328–44.

Leopold, M. and J. Völkel. 2013. 'Geophysikalische Prospektion und zusammenfassende Genese des Donaualtmäanders "Dürre Au"', in S. Sievers, M. Leicht, and B. Ziegaus (eds), *Ergebnisse der Ausgrabungen in Manching-Altenfeld 1996–1999* (Wiesbaden: Reichert), pp. 9–16.

Lukas, D. 2014. 'A Historical-Semantic Approach to the Concept of "Oppidum": The Example of Bibracte', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 84–100.

Maier, F. 1990. 'Das Kultbäumchen von Manching. Ein Zeugnis hellenistischer und keltischer Goldschmiedekunst aus dem 3. Jahrhundert v. Chr.', *Germania*, 68: 129–65.

——. 2000. 'Eiche und Efeu. Zu einer Rekonstruktion des Kultbäumchens von Manching', *Germania*, 79: 297–307.

Malrain, F., V. Zech-Matterne, and G. Blancquaert. 2015. 'Apprehending Continuity and Discontinuity in Iron Age Soil Occupation and Rural Landscape through a Collective Database', in A. Danielisová and M. Fernández-Götz (eds), *Persistent Economic Ways of Living: Production, Distribution and Consumption in Late Prehistory and Early History* (Budapest: Archaeolingua), pp. 137–44.

Marcus, J. and J. A. Sabloff. 2008. *The Ancient City: New Perspectives on Urbanism in the Old and New World* (Sante Fe: School for Advanced Research Resident Scholar Book).

Metzler, J., P. Méniel, and C. Gaeng. 2006. 'Oppida et espaces publics', in C. Haselgrove (ed.), *Les mutations de la fin de l'âge du Fer* (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 201–24.

Metzler-Zens, N. and J. Metzler. 2000. 'L'Image de l'aristocratie à La Tène Finale: permanence de la tradition ou apport extérieur?', in A. Villes and A. Bataille-Melkon (eds), *Fastes des Celtes entre Champagne et Bourgogne aux VII^e^–III^e^ siècles avant Notre Ère: actes du Colloque de l'A.F.E.A.F. Troyes, 25–27 Mai 1995* (Reims: Société archéologique champenoise), pp. 549–58.

Milcent, P.-Y. 2014. 'Hallstatt Urban Experience before the Celtic Oppida in Central and Eastern Gaul. Two Case Studies: Bourges and Vix', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 35–51.

Moore, T. 2011. 'Detribalizing the Later Prehistoric Past: Concepts of Tribes in Iron Age and Roman Studies', *Journal of Social Archaeology*, 11.3: 334–60.

——. 2012. 'Beyond the Oppida: Polyfocal Complexes and Late Iron Age Societies in Southern Britain', *Oxford Journal of Archaeology*, 31.4: 391–417.

——. 2017a. 'Alternatives to Urbanism? Reconsidering Oppida and the Urban Question in Late Iron Age Europe', *Journal of World Prehistory*, 30.3: 281–300.

——. 2017b. 'Beyond Iron Age "Towns" Examining Oppida as Examples of Low-Density Urbanism', *Oxford Journal of Archaeology*, 36.3: 287–305.

——. 2020. *A Biography of Power: Research and Excavations at the Iron Age Oppidum of Bagendon, Gloucestershire (1979–2017)* (Oxford: Archaeopress).

Moore, T., A. Braun, J. Creighton, L. Cripps, P. Haupt, I. Klenner, P. Nouvel, C. Ponroy, and M. Schönfelder. 2013. 'Oppida, Agglomerations and Suburbia: The Bibracte Environs and New Perspectives on Late Iron Age Urbanism in Central-Eastern France', *European Journal of Archaeology*, 16.3: 491–517.

Moore, T. and M. Fernández-Götz. 2022. 'Bringing the Country to Town: "Rurban" Landscapes in Iron Age Europe', *Journal of Urban Archaeology*, 5: 101–26.

Moore, T. and R. Hoppadietz. 2019. 'Le sanctuaire des Sources de l'Yonne', in V. Guichard (ed.), *Rapport intermédiaire 2018 du programme quadriennal de recherche 2017–2020 sur le Mont-Beuvray* (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 291–317.

Moore, T. and C. Ponroy. 2014. 'What's in a Wall? Considerations on the Role of Open Settlements in Late La Tène Gaul', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 140–55.

Moret, P. 2018. 'The Purpose of Gallic *Oppida* Ramparts: A Reappraisal', in A. Ballmer, M. Fernández-Götz, and D. Mielke (eds), *Understanding Ancient Fortifications: Between Regionality and Connectivity* (Oxford: Oxbow), pp. 171–80.

Nieszery, N. 1992. 'Die Bronzezeitlichen Grabfunde', in F. Maier, F. Geilenbrügge, E. Hahn, H.-J. Köhler, and S. Sievers (eds), *Ergebnisse der Ausgrabungen 1984–1987*, Ausgrabungen in Manching, 15 (Stuttgart: Steiner), pp. 357–90.

Nikulka, F. 2016. *Archäologische Demographie: Methoden, Daten und Bevölkerung der europäischen Bronze- und Eisenzeiten* (Leiden: Sidestone).

Olmer, F. 2018. 'Le commerce et les importations en Gaule au second âge du Fer', in J. Guilaine and D. Garcia (eds), *La Protohistoire de la France* (Paris: Hermann), pp. 455–71.

Paunier, D. and T. Luginbühl. 2004. *Bibracte: le site de la maison 1 Parc aux Chevaux (PC1) des origines de l'oppidum au règne de Tibère* (Glux-en-Glenne: Bibracte, Centre archéologique européen).

Peters, M. 2004. 'Landschaft und Siedlung in Südbayern von der Eisenzeit bis zur Völkerwanderungszeit. Kontinuität oder Diskontinuität? Ergebnisse der Pollenanalytik', in C.-M. Hüssen, W. Irlinger, and W. Zanier (eds), *Zur Frage der Kontinuität von der Spätlatènezeit in die frühe römische Kaiserzeit zwischen Alpenrand und Donau: Kolloquien zur Vor- und Frühgeschichte* (Bonn: Halbert), pp. 31–38.

Petřík, J., K. Adameková, L. Petr, I. Jouffroy-Bapicot, P. Kočár, R. Kočárová, P. Goláňová, and V. Guichard. 2021. 'Landscape Evolution around the Oppidum of Bibracte (Northern Massif Central, France) from the Late Iron Age to the Post-Mediaeval Period', *Quaternary International*, 636.30: 180–95.

Poux, M. 2004. *L'âge du vin: rites de boisson, festins et libations en Gaule indépendante* (Montagnac: Mergoil).

——. 2012. *Corent: Voyage au cœur d'une ville gauloise* (Paris: Errance).

——. 2014. 'Enlarging Oppida: Multipolar Town Patterns in Late Iron Age Gaul', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 156–96.

Rieckhoff, S. 2002. 'Der Untergang der Städte. Der Zusammenbruch des keltischen Wirtschafts- und Gesellschaftssystems in Dürrnberg und Manching', in C. Von Dobiat, S. Sievers, and T. Stöllner (eds), *Wirtschaftsarchäologie im Ostkeltischen Raum: Akten des internationalen Kolloquiums in Hallein/Bad Dürrnberg, 7. bis 11. Oktober 1998* (Bonn: Habelt), pp. 359–79.

——. 2014. 'Space, Architecture and Identity in the 2nd/1st Centuries BC', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 101–10.

——. 2021. 'Gedanken zur Lebensqualität der spätlkeltischen Stadt', in S. Fichtl and H. Wendling (eds), *L'Urbanisation aux âges du Fer / Urbanisierung in der Eisenzeit, Journées d'études de Strasbourg en l'honneur de Susanne Sievers / Studientag von Straßburg, Susanne Sievers Gewidmet* (Strasbourg: AVAGE. Mémoires d'Archéologie du Grand Est), pp. 117–37.

Rieckhoff, S. and M. Rösch. 2019. 'Ein Keltischer Exodus? Archäologisch-botanische Überlegungen zum Übergang Eisenzeit – römische Kaiserzeit in Südwestdeutschland', in R. Karl and J. Leskovar (eds), *Interpretierte Eisenzeiten: Fallstudien, Methoden, Theorie* (Linz: Oberösterreichisches Landesmuseum), pp. 57–87.

Ruiz-Zapatero, G., J. Álvarez-Sanchís, and J. Rodríguez-Hernández. 2020. 'Urbanism in Iron Age Iberia: Two Worlds in Contact', *Journal of Urban Archaeology*, 1: 123–50.

Salač, V. 2012. 'Les oppida et les processus d'urbanisation en Europe centrale', in S. Sievers and M. Schönfelder (eds), *Die Frage der Protourbanisation in der Eisenzeit / La question de la protourbanisation à l'âge du Fer*, Kolloquien zur Vor- und Frühgeschichte, 16 (Bonn: Habelt), pp. 319–46.

——. 2014. 'Oppida and Urbanisation Processes in Central Europe', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 64–75.

Schönfelder, M. 2007. 'Zurück aus Griechenland – Spuren Keltischer Söldner in Mitteleuropa', *Germania*, 85: 307–28.

——. 2015. 'Sklaven und Sklavenketten in der jüngeren Latènezeit: zu Neuen Nachweismöglichkeiten', in S. Weefers, M. Karwowski, J. Fries-Knoblach, P. Trebsche, and P. C. Ramsl (eds), *Waffen – Gewalt – Krieg: Beiträge zur internationalen Tagung der AG Eisenzeit und des Instytut Archeologii Uniwersytetu Rzeszowskiego – Rzeszów 19.–22. September 2012*, Beiträge zur Ur- und Frühgeschichte Mitteleuropas, 79 (Langenweißbach: Baier & Beran), pp. 83–91.

Schwab, R., D. Heger, B. Höppner, and E. Pernicka. 2006. 'The Provenance of Iron Artefacts from Manching: A Multi-technique Approach', *Archaeometry*, 48.3: 433–52.

Sievers, S. 1999. 'Manching – Aufstieg und Fall einer Keltenstadt', *Bericht der Römisch-Germanischen Kommision*, 80: 5–24.

——. 2002a. 'Zur Rekonstruktion des Manchinger Wegenetzes', *Berichte der Bayerischen Bodendenkmalpflege*, 41/42: 101–06.

——. 2002b. 'Manching Revisited', *Antiquity*, 76: 943–44.

——. 2004. 'Das "Ende" von Manching – Eine Bestandsaufnahme', in C.-M. Hüssen, W. Irlingerand, and W. Zanier (eds), *Zur Frage der Kontinuität von der Spätlatènezeit in die frühe römische Kaiserzeit zwischen Alpenrand und Donau*, Kolloquien zur Vor- und Frühgeschichte (Bonn: Habelt), pp. 67–71.

——. 2007. *Manching – Die Keltenstadt: Führer zu archäologischen Denkmälern in Bayern* (Stuttgart: Theiss).

——. 2008. 'Umlandbeziehungen Eisenzeitlicher Herrschaftszentren', *Siedlungsforschung: Archäologie – Geschichte – Geographie*, 26: 7–21.

——. 2010. 'Zur Architektur der keltischen Oppida: Zwischen Tradition und Innovation', in P. Trebsche, N. Müller-Scheeßel, and S. Reinhold (eds), *Der gebaute Raum. Bausteine einer Architektursoziologie vormoderner Gesellschaften*, Tübinger Archäologische Taschenbücher, 7 (Münster: Waxmann), pp. 307–24.

——. 2012. 'Manching – ein Oppidum nach Plan?', in W. Raeck and D. Steuernagel (eds), *Das Gedachte und das Gebaute: Siedlungsform, Architektur und Gesellschaft in prähistorischen und Antiken Kulturen*, Frankfurter Archäologische Schriften, 21 (Bonn: Habelt), pp. 115–23.

——. 2015. 'Boier in Bayern?', in V. Salač and S. Sievers (eds), *Boier zwischen Realität und Fiktion: Akten des internationalen Kolloquiums in Český Krumlov vom 14.–16.11.2013*, Kolloquien zur Vor- und Frühgeschichte, 21 (Bonn: Habelt), pp. 375–84.

Sievers, S., M. Leicht, and B. Ziegaus. 2013. *Ergebnisse der Ausgrabungen in Manching-Altenfeld 1996–1999*, Ausgrabungen in Manching, 18 (Wiesbaden: Reichert).

Sievers, S. and M. Schönfelder (eds). 2012. *Die Frage der Protourbanisation in der Eisenzeit / La question de la proto-urbanisation à l'âge du Fer*, Kolloquien zur Vor- und Frühgeschichte, 16 (Bonn: Habelt).

Sievers, S. and H. Wendling. 2014. 'Manching: A Celtic Oppidum between Rescue Excavation and Research', in C. von Carnap-Bornheim (ed.), *Quo vadis? Status and Future Perspectives of Long-Term Excavations in Europe: Papers Presented at a Workshop Organized by the Archaeological State Museum (ALM) and the Centre for Baltic and Scandinavian Archaeology (ZBSA) on the Occasion of the 175th Anniversary of the Archaeological State Museum Schleswig, October 26th to 28th, 2011*, Schriften des Archäologischen Landesmuseums, 10 (Neumünster: Wachholtz), pp. 137–51.

Smith, M. E. 2012. 'State Formation in Hawai'i: A Review of "How Chiefs Became Kings: Divine Kingship and the Rise of Archaic States in Ancient Hawai'i" by Patrick V. Kirch (University of California Press, 2010)', *Cliodynamics*, 3.2: 333–43.

——. 2020. 'Definitions and Comparisons in Urban Archaeology', *Journal of Urban Archaeology*, 1: 15–30.

Stöckli, W. E. 1979. *Die Grob- und Importkeramik von Manching*, Ausgrabungen in Manching, 8 (Wiesbaden: Reichert).

Szabó, M. 2019. 'La Basilique de Bibracte et son environnement', in V. Guichard and M. Vaginay (eds), *Les modèles italiens dans l'architecture des II^e^ et I^er^ siècles avant notre ère en Gaule et dans les régions voisines: actes du colloque de Toulouse, 2–4 octobre 2013*, Collection Bibracte, 30 (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 389–406.

Trebsche, P. 2019. 'Die latènezeitlichen Großsiedlungen im österreichischen Donauraum. Forschungsstand, Typologie und Überlegungen zur Genese', in S. Fichtl, P. Barral, G. Pierrevelcin, and M. Schönfelder (eds), *Les agglomérations ouvertes*

de l'Europe celtique (IIIe–Ier s. av, J.-C.): table ronde internationale, Glux-en-Glenne, 28, 29 et 30 Octobre 2015, Mémoires d'archéologie du Grand Est, 4 (Strasbourg: MAGE), pp. 367–87.

Van Endert, D. 1987. *Das Osttor des Oppidums von Manching*, Ausgrabungen in Manching, 10 (Wiesbaden: Steiner).

Völkel, J. and M. Leopold. 2007. 'Manching, keltische Stadt zwischen Zwei Flüssen', *Archäologie in Deutschland*, 4: 24–26.

Wells, P. 2020. 'Greeks in Iron Age Central Europe: Patterns of Interaction and Change', in F. De Angelis (ed.), *A Companion to Greeks across the Ancient World* (London: Wiley-Blackwell), pp. 199–220.

Wendling, H. 2010. 'Landbesitz und Erbfolge. Ein ethnographisches Modell zur Sozialstruktur und Raumgliederung der mitteleuropäischen Latènezeit', in P. Trebsche, N. Müller-Scheeßel, and S. Reinhold (eds), *Der gebaute Raum: Bausteine einer Architektursoziologie vormoderner Gesellschaften*, Tübinger Archäologische Taschenbücher, 7 (Münster: Waxmann), pp. 325–54.

——. 2013. 'Manching Reconsidered: New Perspectives on Settlement Dynamics and Urbanization in Central Europe', *European Journal of Archaeology*, 16.3: 459–90.

——. 2018. 'Dynamiques locales et influences externes. Architecture et organisation spatiale à Manching en regard des oppida celtiques', in A. Villard Le-Tiec (ed.), *Architectures de l'âge du Fer en Europe occidentale et centrale: actes du 40e colloque internationale de l'AFEAF, Rennes, Mai 2016* (Rennes: Presses Universitaires de Rennes), pp. 155–72.

——. 2019a. 'Un sanctuaire sans architecture: la zone à offrandes du centre d'oppidum de Manching', in P. Barral and M. Thivet (eds), *Sanctuaires de l'âge du Fer: actualités de la recherche en Europe celtique occidentale; actes du 41e colloque international de l'AFEAF (Dole, 25–27 mai 2017)*, Collection Afeaf, 1 (Paris: AFEAF), pp. 163–75.

——. 2019b. 'Monumenta celtica – Die "Große Halle" latènezeitlicher Herren', in P. Ramsl, K. Rebay-Salisbury, and P. Trebsche (eds), *Schichtengeschichten: Festschrift für Otto H. Urban*, Universitätsforschungen zur Prähistorischen Archäologie, 328 (Bonn: Habelt), pp. 241–58.

——. 2021. 'Das Oppidum von Manching – Eine sakrale Stadtlandschaft', in S. Fichtl and H. Wendling (eds), *L'Urbanisation aux âges du Fer / Urbanisierung in der Eisenzeit, Journées d'études de Strasbourg en l'honneur de Susanne Sievers / Studientag von Straßburg, Susanne Sievers Gewidmet* (Strasbourg: AVAGE. Mémoires d'Archéologie du Grand Est), pp. 155–76.

——. 2023. 'The Oppidum of Manching in Short-Range to Remote Sensing: Strategies and Results of Multi-method Settlement Analysis', in E. Hiriart, S. Krausz, A. Alcantara, C. Filet, P. Goláňová, J. Hantrais, and M. Mathé (eds), *Les agglomérations dans le monde celtique et ses marges: nouvelles approches et perspectives de recherche*, Nemesis, 1 (Pessac: Ausonius), pp. 169–92 <https://una-editions.fr/the-oppidum-of-manching-in-short-range-to-remote-sensing> [accessed 5 January 2023].

Wendling, H. and K. Winger. 2014. 'Aspects of Iron Age Urbanity and Urbanism at Manching', in M. Fernández-Götz, H. Wendling, and K. Winger (eds), *Paths to Complexity: Centralisation and Urbanisation in Iron Age Europe* (Oxford: Oxbow), pp. 132–39.

Wiethold, J. 2011. 'Bibracte, Nièvre et Saône-et-Loire. Les recherches carpologiques depuis 1989. Agriculture et alimentation végétale du second âge du Fer, du début de l'époque gallo-romaine et du Moyen Âge', in J. Wiethold (ed.), *Carpologia: Articles réunis à la mémoire de Karen Lundström-Baudais; actes des rencontres d'archéobotanique organisées par Bibracte, Centre archéologique européen et le Centre de recherches archéologiques de la Vallée de l'Oise 9–12 juin 2005, Glux-en-Glenne* (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 221–52.

Will, E. L. 1987. 'The Roman Amphoras from Manching: A Reappraisal', *Bayerische Vorgeschichtsblätter*, 52: 21–36.

Winger, K. 2015. *Baubefunde und Siedlungsentwicklung der Südumgehung im Oppidum von Manching*, Ausgrabungen in Manching, 20 (Wiesbaden: Reichert).

——. 2017. 'Not Built in a Day: The Quality of Iron Age Urbanism by Comparison with Athens and Rome', in S. Stoddart (ed.), *Delicate Urbanism in Context: Settlement Nucleation in Pre-Roman Germany; The DAAD Cambridge Symposium* (Cambridge: McDonald Institute for Archaeological Research), pp. 97–102.

——. 2018. 'Les bâtiments allongés du contournement sud de l'oppidum de Manching', in A. Villard-Le Tiec (ed.), *Architectures de l'âge du Fer en Europe occidental et centrale: actes du XLe colloque international de l'AFEAF. Rennes, 4–7 mai 2016* (Rennes: AFEAF), pp. 655–59.

——. 2020. 'Ritualisation as a Spatial Practice: The Case of Manching', in S. Rau and J. Rüpke (eds), *Religion and Urbanity* (Berlin: De Gruyter) <https://doi.org/10.1515/urbrel.16708506>.

——. 2021. 'Wer hat's Erfunden? Eisenzeitliche Urbanisierung im Europäischen Vergleich', in S. Fichtl and H. Wendling (eds), *L'Urbanisation aux âges du Fer / Urbanisierung in der Eisenzeit, Journées d'études de Strasbourg en l'honneur de Susanne Sievers / Studientag von Straßburg, Susanne Sievers Gewidmet* (Strasbourg: AVAGE. Mémoires d'archéologie du Grand Est), pp. 75–88.

Woolf, G. 1993. 'Rethinking the *oppida*', *Oxford Journal of Archaeology*, 12.2: 223–34.

——. 2006. 'The End of "the End of the Iron Age"', in C. Haselgrove (ed.), *Celtes et Gauloise: l'archéologie face à l'histoire; les mutations de la fin de l'âge du Fer; actes de la table ronde de Cambridge 7–8 juillet 2005* (Glux-en-Glenne: Bibracte, Centre archéologique européen), pp. 267–76.