Cultural Transformations in Germania Secunda

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A Holistic Approach to 'Barbarian' Migrations

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Chapter 1
Introduction

The depiction of the Late Roman Empire has often been one of decline and fall.[1] One key aspect that often features is the influence of 'others' in the frontier provinces: 'barbarian' or 'Germanic' tribes raiding, invading, and ultimately settling in the Roman provinces.[2] Both archaeological and historical research have frequently focused on invasions and other destructive events,[3] especially as part of the migration and invasion debate. More recently, new theoretical frameworks and scientific advances have begun to paint a more nuanced picture of cross-border interactions, of the identities of both 'Romans' and 'barbarians'[4] and of the very notion of decline.[5] These include the study of rural settlements as locales of migration,[6] burial rites,[7] isotope and mDNA analysis to trace mobility across the frontiers[8] and issues of (dis)continuity of provincial-Roman occupation of the rural hinterland.[9]

Academic debates have gone back and forth over the last 50 years on whether migration or mobility can be proven through archaeological data, and if so, how.[10] During this same period, a number of studies focused on identifying Germanic or migrant identities in the archaeological record through material culture,[11] burial rites,[12] settlement features,[13] coin hoards,[14] marriage law,[15] figurative depictions[16] and scientific methods.[17] This monograph addresses broader questions about the archaeological analysis of migration and social dynamics through a case study of the Lower Rhine frontier zone, which includes the *limes* itself, the provincial hinterland of Germania Secunda and the bordering areas of Germania Magna (North Rhine-Westphalia and Lower Saxony west of the Elbe; figure 1.1). The area was chosen because there has been a large influx of archaeological data that has become available in recent decades for the Lower Rhine frontier. Several large and important cemetery sites have been published,[18] modern rescue archaeology has led to an increase in excavated settlements[19] and the structural registration of finds from private collections in the Netherlands has unearthed a large number of stray finds (Portable Antiquities of the Netherlands; PAN).[20] The Late Roman period is defined here as AD 270-470, with a focus in this thesis on the 4th and 5th centuries. The Early and Middle Roman are defined as 53 BC-AD 69 and AD 70-269 respectively.[21]

The central theme of this thesis is the perceived Germanicisation of the province of Germania Secunda, specifically where it concerns the rural settlement landscape, the organisation of the Lower Rhine frontier and concurrent changes in military and civilian dress accessories. Below, a historiography of the main archaeological datasets will be presented, which is preceded by a brief overview of ethnic identities and migration in archaeological theory. I will review theoretical approaches to migration, exploring issues around mobility and identity and considering specifically how Germanic identities have been researched. The final section sets out my

[1] Gibbon 1776-1789; MacMullen 1988; Heather 2005; Heather 2009; Ward-Perkins 2005; Gerrard 2013.
[2] Von Rummel 2007; Heeren 2017; Jäger 2019; Böhme 2009.
[3] Such as the Limesfall of the Lower German frontier in the mid-late 3rd century; see for criticism Heeren 2016.
[4] Brather 2000; Brather 2004; Swift 2006; Halsall 2007; Mathisen 2018; Geary 1988; Harland and Friedrich 2021; Effros 2012; Pohl and Reimitz 2000; Pohl *et al.* 2000; Gardner 2007; Taayke *et al.* 2003; Mathisen and Shanzer 2011; Bowden *et al.* 2006; Martin 2014; Kulikowski 2011; Wells 1999.
[5] Webster and Brown 1999; Bowersock 2000; Heeren and Roymans 2021; Roymans *et al.* 2020; Dodd 2021; Annaert *et al.* 2012; Van Ossel 2006.
[6] Lenz 2005; Heeren 2017; Kaspyrzk 2017; Jäger 2019; Roymans *et al.* 2020.
[7] Pirling 1993; Böhner 1963, Böhme 1974; Böhme 2009; Halsall 1992; Werner 1958; Werner 1962; Schulze-Dörlamm 1986a.
[8] Kootker *et al.* 2022; Kootker and Heeren 2022.
[9] Gechter and Kunow 1986; Heeren 2017; Roymans *et al.* 2020; Bender 2001; Van Thienen 2016; Van Thienen 2020; Bridger 1994; Gilles 1994; Brulet 1994; Lenz 1999; Lenz 2001; Louis 2004; Van Ossel and Ouzoulias 2001; Van Ossel 2006; Brüggler *et al.* 2017; Van Enckevort *et al.* 2017; Dodd 2021; Janssens 2010.
[10] Adams *et al.* 1978; Härke 2004; Hakenbeck 2008; Anthony 1990; Anthony 1992; Anthony 1997; Hawkes 1987; Härke 1998; Chapman and Hamerow 1997; Hamerow 1997; Burmeister 2000; Halsall 2014.
[11] Böhme 1974; Böhme 1999; Böhme 2009; Bernhard 1999; Van Thienen *et al.* 2020; Van Thienen and Gelfert 2022; De Paepe and Van Impe 1991; Von Rummel 2007.
[12] Werner 1958; Böhner 1963; Böhme 1974; Schulze-Dörlamm 1986a; Seiller 1992.
[13] Henning 1989; Lenz 2005; Heeren 2017; Kaspyrzk 2017; Roymans *et al.* 2020; Jäger 2019.
[14] Martin 2009; Roymans 2017.
[15] Sivan 1996; Mathisen 2009, 140.
[16] Von Rummel 2007.
[17] Kootker *et al.* 2022; Kootker and Heeren 2022.
[18] E.g., Krefeld-Gellep (Pirling 1966; Pirling 1974; Pirling 1979; Pirling 1989; Pirling 1997; Pirling and Siepen 2000; Pirling and Siepen 2003; Pirling and Siepen 2006); Hürth-Hermülheim (Gottschalk 1999; Gottschalk 2008); Tongeren (Vanvinckenroye 1984; 1995ab); Rhenen-Donderdberg (Wagner and Ypey 2011); Nijmegen (Steures 2013); Hambach 132 (Brüggler 2009); Eschweiler-Lohn (Gottschalk 2015); Nettersheim-Ob der Kaul (Gottschalk 2015); Übach-Palenberg (Siegmund 1998b); Cologne-Luxemburgerstrasse (Von Boeselager 2012); Jülich (Pöppelmann 2010); Cologne-Jakobstraße (Friedhoff 1991); Dortmund-Asseln (Könemann 2010; Könemann 2015); Deventer-Colmschate (Verlinde and Erdrich 2006); Sievern (Aufderhaar 2016); Flögeln-Vossbarg (Schön 1988a; Schön 2001); Gudendorff (Schön 2017); Issendorf (Häßler 1994; Häßler 2001; Weber 2000; Weber 2004); Liebenau (Cosack 1982; Häßler 1983; Häßler 1985; Häßler 1990; Brieske 2001).
[19] Van Enckevort *et al.* 2017; Van Thienen 2020; Brüggler 2021.
[20] https://portable-antiquities.nl/pan/#/public.
[21] Vos 2009, figure 1.6.

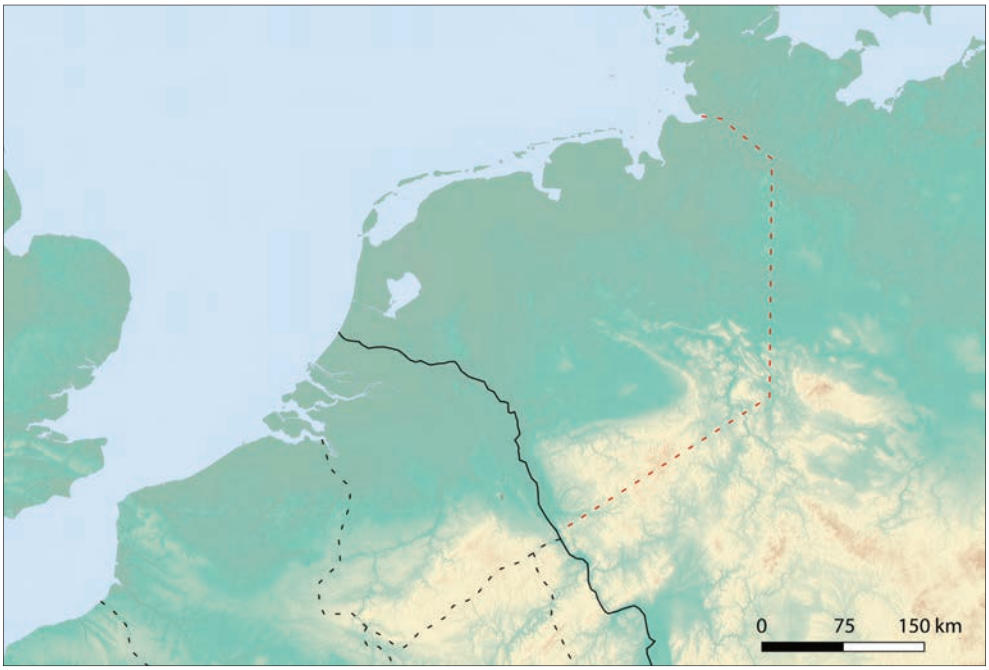

Figure 1.1. Map of the research area. Black: *limes*. Dashed line: provincial borders Germania Secunda. Red dashed line: area of Germania Magna included in this study. Frontier and provincial borders after Roymans *et al.* 2020; Brulet 2017a.

own approach, drawing on the issues identified in the preceding sections before setting out research aims and thesis structure.

Migration theory and ethnic identities in (Late Roman) archaeology

Recently, migration has enjoyed renewed interest in archaeological theory[22] although for the Late Roman period the topic has never completely been off the table. Much of the archaeological data for this period in the Western Empire has been viewed through the lens of 'Germanic' identities and migrations and their role in the shaping of the Late Roman World ('Migration Period'). In archaeology, migration theories often take a very pragmatic approach, identifying and explaining anomalies in the archaeological record.[23] Migration is most commonly evoked as an explanation for cultural change in cases of '*sharp discontinuity in the sequence of cultural development*',[24] with ideally a traceable area of origin of any 'intrusive traits'.[25]

More broadly, migration as an interpretative framework has drifted in and out of academic fashion several times throughout the 20th and 21st centuries,[26] often seemingly coinciding with political and intellectual trends.[27] This section is not meant as an exhaustive overview of theoretical models of or approaches to migration and identity in archaeological theory,[28] but as a brief introduction to some aspects of the debate that are especially useful for the interpretation of the Lower Germanic frontier. The aim of this monograph is to critically engage with the archaeological material itself and re-assess the changes in rural settlements and material culture in the Germania Secunda viewed against the background of migration, ethnic identities, and long-term social and cultural changes. It is in the processes of mobility and migration that discussions on cultural change, ethnicity, gender and social identities and material culture converge.

Historical overview and ethnicity in archaeology

The discussion below summarises some of the main points in the debates surrounding migration and ethnic identities in archaeology, as both concepts are often studied through the same methods and materials, e.g., 'intrusive' finds'.[29] The association of material culture with specific communities or groups has been a long subject of debate in (pre)historic archaeology.[30] The *ethnische Deutung* of material culture was a key component of the cultural historical approach,[31] which relied largely on the equation of archaeological cultures to clearly defined ethnic groups,[32] with migration, invasions and diffusion used to explain archaeologically observable changes or anomalies. Under the New Archaeology, archaeological theory became more

[22] Hingley 2017, 78; Chapman and Hamerow 1997; Van Dommelen 2014; Heeren 2017; Eckardt 2014.
[23] Adams *et al.* 1978, 487.
[24] Adams *et al.* 1978, 487.
[25] Eckardt and Müldner 2016, 207; Adams *et al.* 1978, 487.
[26] Härke 2004, 456.
[27] Megaw and Megaw 1992, 255-256; Anthony 1997, 21. See for a more exhaustive overview Harland 2021.
[28] See Prien 2005; Manning 2005; Chapman and Hamerow 1997; Brather 2004; Jones 1997.
[29] Adams *et al.* 1978; Eckardt 2014.
[30] Fulford 2010, 68.
[31] See summary in Hakenbeck 2008, 12; Curta 2014.
[32] Hakenbeck 2008, 9, 14; Jones 1997, 15.

'immobilist'[33] and British scholarship especially began to focus on changes in identity and ideas to account for changes in material culture.[34]

Migration again became more fashionable as a framework in the late 1980's,[35] although with less emphasis on ethnicity. Instead, migration was increasingly framed in archaeological theory as a process, with dynamics of movement that needed to be addressed,[36] including '*which sub-groups tended to move, which groups tended to stay, how destinations were chosen, how routes were selected and the archaeological consequences of all of these constraints on movements*'.[37] Interest in migration theory in archaeology has been increasing again in recent years.[38] Definitions of ethnicity have also shifted considerably over time, and the concept is now more commonly understood as a social construct that is fluid and context-specific.[39] Jones defined ethnicity as '*all social and psychological phenomena associated with a culturally constructed group identity*'.[40] Wallace-Hadrill has also applied the linguistic concept of code-switching to cultural expressions in different social contexts,[41] which can be applied to archaeological materials and their use in expressing identity.

Brather has pointed out that both individual and group identities may exist concurrently[42] and Petts has noted that cultural identities are formed through day-to-day activities.[43] As a socially constructed form of expression, ethnic identity is difficult to define and identify.[44] While some have approached the topic largely from a theoretical point,[45] some have opted to work from the archaeological materials up.[46] Especially in Late Roman archaeology, we often rely on a tacit or explicit dichotomy between Romans and non-Romans. Such linear thinking is also a central component in the decline and fall narrative.[47] Expressions of ethnicity may also be difficult to distinguish from other expressions of social and collective identities such as gender or class,[48] or they be may largely invisible. According to Eckardt, the link between '*ethnic formations and material culture is highly problematical, and there is no longer a simplistic correlation between particular aspects of material culture, such as pottery types or house forms, and ethnic identity*'.[49] Material culture may not just reflect expressions of ethnicity but may have been used as an '*active element in its negotiation*'.[50] Material culture may also be used to invent or revive traditions, often in times of military conflict or political upheaval.[51]

Eckardt has also pointed out that ethnic groups may not be visibly defined in the archaeological record[52] and material culture with possible regional or ethnic connotations may not necessarily have been experienced in the past as 'alien', but could also have been seen as unique or desirable status symbols.[53] Any observed change or variation in material culture may thus be due to a number of factors, including social, political, cultural or ethnic identities, or a combination of these.[54] Expressions or indicators of ethnic identities may include displays of material culture or habitual practices.[55] In their review of archaeological approaches to ethnicity, Reher and Fernandez-Götz state that ethnicity may be most likely expressed in domestic and ritual contexts.[56] Distinguishing between the various nuances and meanings of the archaeological record requires a 'contextually detailed analysis'.[57]

This thesis supports the definition of ethnicity as a social construct and aims to offer a reinterpretation of the archaeological material from the Late Roman West that has traditionally been viewed through the lens of ethnic, Germanic identities. This is done by including theoretical perspectives on cultural change such as globalisation and creolisation and by moving from concepts of *Tracht* to fashion and applying a multi-disciplinary, 'contextually detailed analysis' to this material.[58] An extensive analysis of object use and deposition in different contexts is needed to extract the various meanings objects could have in different social contexts, including but not limited to meanings associated to ethnic or group identities or regional origin.

Migration as a process

Apart from an explanatory framework for observable cultural change, migration in the past may also be studied as a phenomenon of its own. Besides the act of moving from one area to another and settling there, it may also be defined as a social process with motives, decisions, information exchanges and consequences

[33] See Hawkes 1987, 203; Härke 1998, 19; Chapman and Hamerow 1997, 1.
[34] Hakenbeck 2008, 17; see Härke 2004.
[35] Anthony 1997, 21.
[36] Hakenbeck 2008, 16.
[37] Anthony 1997, 21.
[38] Hingley 2017, 78; e.g., Chapman and Hamerow 1997; Van Dommelen 2014; Heeren 2017; Eckardt 2014.
[39] Eckardt and Müldner 2016; Jones 2009, 8; Brather 2004, 158; Eckardt 2014, 26-27; Härke 2004, 454.
[40] Jones 1997, xiii; cf. Grahame 1998, 156.
[41] Wallace-Hadrill 2008, 63-64.
[42] Brather 2004, 158.
[43] Petts 1998, 79.
[44] Pohl 1998; Curta 2013.
[45] E.g. Jones 1997.
[46] E.g. Martin 2014.
[47] Miller 1996, 161.
[48] Curta 2011, 537; Eckardt 2014, 26.
[49] Eckardt 2014, 28.
[50] Curta 2007, 170.
[51] Eckardt 2014, 29; Curta 2007, 182.
[52] Eckardt 2014, 28.
[53] Eckardt 2014, 28.
[54] Eckardt 2014, 27; Grahame 1998, 159.
[55] Eckardt 2014, 28; Lucy 2005, 97; Petts 1998, 79.
[56] Reher and Fernandez-Götz 2015, 402.
[57] Reher and Fernandez-Götz 2015, 402; Jones 1997.
[58] Cf. Reher and Fernandez-Götz 2015, 402.

for the communities involved (see above). Migration theory is based on the premise that cultures can move from one area to another through the movement of humans,[59] although its visibility in the archaeological record has been met with some scepticism.[60] Most migration efforts in the past will have involved small groups of people, individuals or family units[61] and it is questionable how strong an archaeological footprint such small-scale movements would have left. When possible evidence for non-locals is ascertained, interpreting whether it reflects a one-time visit, temporary movement or a permanent move may also be difficult.[62] Furthermore, cultural identities may become blurred '*through acculturation and assimilation of migrants and natives*'.[63]

That last point targets an important idea, namely that apart from the act of moving from one place to another, migration also involves a number of social factors in both the emigration and immigration area. There needs to be motive to move, such as push and pull factors.[64] Then there are processes that take place during movement. Burmeister, for instance, has highlighted the role of pioneers (traders, mercenaries etc.) at the forefront of major migratory movement. Pioneers also tend to settle near already inhabited centres, which then become focal points for later migratory movements. These later movements are facilitated by the social networks and information exchanges between those who had already moved and those remaining home, leading to established routes of migration. These social networks also facilitated integration in the immigration area and resulted in spatial concentration of migrants and cultural/social enclaves.[65] Prien also defined several different types of migration, such as elite migration (a small sub-set of people who are not representative of the wider community moving into an area where they have political or economic power), mass migration (group of migrants so large it eclipses or equals the local population), specialist migration (i.e. career migration of a small number of people with a particular profession, such as trader, crafts person or soldier) and expulsion (or coerced migration).[66] In the Late Roman West, the *foederati* are often seen through the lens of career migration.[67]

Finally, there are the effects of migration to consider, on both the emigration and immigration area. Burmeister discussed the effects of migration on the emigration area, such as the return of some migrants to their area of origin, possibly resulting in changes there. He furthermore rephrased migration from an event to a long-term process and placed it in a social context, noting for instance that migrations were selective (with only some members of a society moving and selection criteria possibly changing over time) and that the greater the need to migrate (depending on the cause), the less selective migrations were. When migrants were primarily made up of a specific social group (i.e., defined by gender or age), migrations may have had an effect on the demographic make-up of the emigration area, which may have led to economic, social or cultural transformations.[68]

Burmeister's approach emphasises the complexity of the migration process and place it with the social context of the communities involved.[69] The transmission of information is a key factor, especially around destinations and routes and is especially important in in long-distance migration[70] and results in limited streams of migration towards known targets, rather than migrant communities taking over entire landscapes without discrimination.[71] Archaeologically, chain migration may be identifiable in the form of small pockets of settlements forming around so-called founder communities.[72]

Subheading Practical approaches

However, Burmeister's 2000 paper has been criticised for failing to unequivocally state an '*archaeological proof of migration*'.[73] It is also noteworthy that Burmeister's paper seems mostly concerned with proving migration to Britain in the 5th century, stating that '*the presence of Germanic mercenaries in northern Gaul from the 4th century on is well documented archaeologically*', citing Böhme's inventory of Germanic grave goods[74] without further critical discussion.[75] Although Bruun discussed how challenging it can be to identify the migration of women and children in the Roman world,[76] female burials and how they relate to notions of *Tracht* or native dress have always been central to the Late Roman migration narrative.[77]

As discussed above, burials have commonly been used to identify migrant communities on Roman soil.

[59] Adams *et al*. 1978, 484.
[60] E.g., Härke 2004, 456.
[61] Adams *et al*. 1978, 488.
[62] Bruun 2016, 177.
[63] Härke 2004, 453; cf. Halsall 2012, 32.
[64] Anthony 1997, 22. For example, negative conditions in the area of origin coupled with perceived positive conditions in the immigration area, the benefits of which outweigh the cost of transport (Anthony 1997, 22). See also Bruun's comprehensive list of motives, including military careers, colonisation and resettlement projects, commercial motives, the search for work, land, change or adventure, the need to escape natural disasters or war, persecution, and enslavement (Bruun 2016, 181-186).
[65] Burmeister 2000, 549.
[66] Prien 2005, 47-48; Anthony 1997, 27.
[67] Halsall 2014, 525; see also Miller 1996, 166.
[68] Prien 2000, 549-550.
[69] Hakenbeck 2008, 17.
[70] Anthony 1997, 27.
[71] Anthony 1997, 24.
[72] Anthony 1997, 27.
[73] Hakenbeck 2008, 18.
[74] Böhme 1974.
[75] Burmeister 2000, 548.
[76] Bruun 2016, 176.
[77] Cf. Böhme 2009.

Prien has emphasised that burial customs tend to change gradually and that when a 'foreign' burial rite suddenly appears, migration is a likely factor. However, chronological development is not enough, and the new and pre-existing rites need to be significantly different.[78] This closely mirrors Halsall's observation that a combination of well-known geographical origin, significant deviation from the norm and chronological differences in regionality is necessary for burial rites in Late Roman Gaul to be proof of migration.[79] However, as will be discussed below, many aspects of the supposedly Germanic burial rite in the Late Roman period were rooted in and derived from provincial-Roman customs and cannot be securely placed as originating in Germania Magna. Furthermore, Eckardt and Müldner have highlighted the need to place 'intrusive' finds in their historical context and to consider their relation to other forms of personal or group identity, such as gender or the military, with especially the latter a key component of frontier culture.[80]

Burials may be seen as inherently performative, showing us how the deceased and their families wished to be represented.[81] Through thorough analysis of the Late Roman burial rite, Theuws has also critiqued many of the ethnic interpretations of the grave goods buried with the deceased, instead reframing them as expressions of other forms of social status and identity.[82] Settlements may be useful in studying community identities[83] as well as the personal and public displays of identity, adaptation and assimilation.[84] Several scholars have presented evidence for migration in settlement contexts.[85] Burmeister in particular has been influential in how settlement evidence may be used in the migration debate, distinguishing between aspects of day-to-day life that may adapt very quickly to new environments (such as subsistence strategies and architecture), while other, more 'internal' aspects of life remained traditional longer (such as the inner partitioning of houses and pottery making) as they were less likely to be influenced by their new locality and interaction with the local population.[86]

Recognising such distinctions relies on a careful analysis of domestic architecture: Prien has noted that building features related to function and use (such as stables or workshop areas) are not suitable for these types of arguments.[87] Whether migrants kept elements that they were familiar with in new areas may depend on a number of factors, including economic necessity and the possibility to even do so.[88] Modifications to building traditions may appear at the earliest after one generation, as the old ways of doing things may turn out not be a good fit with the local environment, although this needs to be assessed on a case by case basis.[89] The formation of new types of settlements that are recognisably different in function and use from what came before are the best-case scenario for identifying migration in the settlement record, although according to Prien when this is not accompanied by new house types, internal migration or an increase in the existing population are also probable explanations.[90]

Approaches to non-Roman and military identities in Late Roman archaeology

For the continental western provinces and their frontier regions, two main strands of evidence with two corresponding social groups have been central to the discussion of a Germanic presence on Roman soil. Changes in burial rites, namely the introduction of furnished burials in the northern provinces have long been associated with Germanic identities, based on perceived commonalities with burials in Germania Magna.[91] So-called 'jewellery graves', richly furnished burials of women with hairpins and brooches,[92] are often seen as indicative of the presence of (high-status) Germanic women[93] in the Roman frontier provinces. Recruitment and dispersion of Germanic *foederati* is typically approached through the distribution of the weapon burial rite[94] and more recently the distribution of gold *solidi*, predominantly from hoards and stray finds.[95]

The study of Germanic-style material culture, including dress accessories and handmade pottery has enjoyed a long research history in the study area.[96] Additional data have come in the last few decades from the study of rural settlements and their architecture, material culture and subsistence economy.[97] Most recently, the application of scientific methods (mDNA and isotopes)

[78] Prien 2005, 305. Prien also suggests particular types of migration can be identified based on the presence of absence of certain age groups or genders in cemeteries but the archaeological data for the study area were not sufficient to work with on that level of detail.
[79] Halsall 2000, 169.
[80] Müldner and Eckardt 2016, 207; see also Clark 1975, 52-53.
[81] Prien 2005, 304; Theuws 2009, 295ff.; Theuws 2013.
[82] Theuws 2009.
[83] Kruse 2019; cf. Reher and Fernandez-Götz 2015 on domestic practices.
[84] Burmeister 2000.
[85] Henning 1989; Lenz 2005; Heeren 2017.
[86] Burmeister 2000, 541-542; cf. Prien 2005, 306.
[87] Prien 2005, 306.
[88] Prien 2005, 306-307. Prien suggests keeping traditional building styles when moving is less likely in the case of forced deportations and more probable in the case of mass migration (2005, 307).
[89] Prien 2005, 307-308.
[90] Prien 2005, 308.
[91] Werner 1958; Böhner 1963; Günther 1971; Böhme 1974; Schulze-Dörlamm 1986a; Seiller 1992; James 1979; Pirling 1993.
[92] Böhme 1974.
[93] Böhme 2009; Klapp 2013.
[94] Böhner 1963; Böhme 1974; see also Werner 1958.
[95] Martin 2009; Roymans 2017.
[96] Böhme 1974; Böhme 1999; Böhme 2007; Böhme 2009; Bernhard 1999; Van Thienen *et al.* 2020; Van Thienen and Gelfert 2022; De Paepe and Van Impe 1991; Von Rummel 2007.
[97] Henning 1989; Lenz 2005; Heeren 2017; Kaspyrzk 2017; Roymans *et al.* 2020; Jäger 2019.

has been used to trace mobility.[98] A brief literature review of these strands of evidence is presented below in order to highlight areas where this work can make a contribution.

The Germanic burial rite and associated dress accessories

The Late Roman female burial rite included several brooch and hairpin types that are also found in contemporary contexts in Germania Magna, leading to the suggestion that these burials belonged to high-status Germanic women (as these graves tend to feature elaborate grave gifts).[99] More specifically, it has been suggested that some form of ethnically informed dress or *Tracht* was used by these communities to express their non-Roman identities in their new environment. This narrative takes inspiration from the 19th-century invention of a national dress in many north-western European countries during the formations of the nation states.[100] Empirical bases to suggest material culture was used to express ethnicity in early Anglo-Saxon burials were found to be lacking.[101]

The ethnic interpretation of clothing styles is often based on a strictly dualist system, with sharply defined and homogeneous ethnicities ('Roman' vs. 'Germanic') presented as opposing parties.[102] The occurrence of multiple brooches per grave, often in matching sets, is commonly interpreted as reflecting a female dress style,[103] which at the time might have included up to five brooches. Although Böhme links this style of multiple brooches to a shift from a Roman *tunica* to a Germanic *peplos* in Belgica Secunda and Lugdunensa Secunda,[104] it can in fact be found in Early and Middle Roman graves in the northern provinces as well, as provincial-Roman female dress was also characterised by the wearing of multiple (matching) brooches.[105]

Rejecting ethnic labels, Halsall interpreted the lavishness of the Late Roman 'jewellery grave' as a reflection of a social group displaying its high status, without necessarily specific ethnic connotations.[106] Drinkwater has emphasised that Germanic-style material culture was not necessarily made by or belonged to 'ethnic Germans'.[107] The exclusive association with women as the main wearers of these brooches may also be challenged. This is largely based on the fact that Armbrust, supporting-arm and tutulus brooches sometimes appear in sets, but this is not always the case (and in some regions of Germania Magna, multiple brooches are found in burials of men).[108]

Table 1.1 summarises Böhme's seminal 1974 book listing all the object categories found in Germanic burials (on both sides of the frontier). Some objects are gendered, while others are found with both men and women. Many of these are not particularly culturally or socially exclusive and many of the tools and non-gendered items are poorly datable outside of closed grave contexts. It is a challenge, therefore, to distinguish from table 1.1 between objects that were deliberately placed in the grave to express regional origins or ethnic identities of the deceased and objects that were not.

What further complicates these narratives are the regional differences found in the distribution of 'Germanic' material culture, on both sides of the frontier. Between Sion and Strasbourg, lavish jewellery graves are known that do not contain brooches, indicating a different way of dressing women for burial.[109] Brooches are relatively rare in Germanic settlements in West-Frisia while hairpins are fairly common, which has been interpreted as a regional preference.[110] Female dress was far less idealised in the Roman world compared to men's clothing and was subject to frequent changes in fashion.[111]

Furthermore, Böhme already highlighted the specific regionality of some of these items, most notably the Wijster hairpins. Although these are found relatively widely across the northern Netherlands and northern Germany,[112] their main distribution appears to have been the central Dutch river area. In his original 1974 publication, Böhme already emphasised both the restricted distribution and the large amount of stylistic variation found in hairpins in the river area.[113] Based on these two factors, he argued that Wijster hairpins were likely produced in the Dutch central river area.[114] The development of a new type of object in a Germanic style in the frontier zone underscores the interactive nature of the frontier zone and its function as a 'cultural facilitator'.

Similar regionality can be found in the brooches. It is an undeniable fact that both the male and female-gendered brooches listed in table 1.1 are found, in

[98] (Kootker and Heeren 2022; Kootker *et al.* 2022.
[99] Böhme 2009.
[100] Gerrard in prep, see Harland 2021 for a discussion and critique of the *Tracht* concept.
[101] Harland 2019.
[102] Von Rummel 2007, 304.
[103] Böhme 2009, 41.
[104] Böhme 2009, 42; Böhme 1997, 93.
[105] Böhme 1972, 48; Riha 1979, 42; Heeren and van der Feijst 2017, 336-337; Van der Veen 2021, 347-348; Croom 2000, 137.
[106] Halsall 2000, 177.
[107] Drinkwater 1996, 24.
[108] Böhme-Schönberger 2008, 144-145; Von Richthoven 2000; Caselitz 2005.
[109] Halsall 2009, 99.
[110] Hagens and Siers 1999.
[111] Von Rummel 2007, 93.
[112] Böhme 1974, Abb. 13; *Karte* 9; Van Es 1967; Verlaeckt and Proos 1996.
[113] Böhme 1974, 38.
[114] Later echoed by Halsall 2000, 171-172 who labelled them as a Late Roman frontier style.

Brooches (female)	Brooches (male)
einfache Armbrustfibeln mit gleichbreitem, facettierten Fuß	crossbow brooch
Armbrustfibeln mit Trapezfuß	Stützarmfibeln mit stabförmigen Bügel und Rechteckfuß (mit Achensträger)
Stützarmfibeln mit Trapezfuß	bow-knob brooches
Stützarmfibeln mit gleichbreitem, bandförmigen Fuß (ohne Achsenträger)	
Gleicharmige Kerbschnittfibel	
tutulus brooch	
composed and cast saucer brooch	
Other jewellery (female)	Weapons (male)
hairpins	spatha
earrings	lances/spears
beaded necklaces (glass, amber and gold beads)	axes
pendants	arrowheads and javelins
bracelets	Shields
buckles and belt fittings	buckles and belt fittings
Tools (female)	Tools (male)
keys	razorblades
spindle whorls	fire strikers
needle boxes	bag handles
mirrors	carved horn
iron and bronze rings	
wooden chests	
Non-gender specific grave gifts	
wire necklaces and finger rings	
grooming tools (bone combs; iron shears/scissors) and toiletries (tweezers, ear spoons)	
iron knives; bronze and silver spoons	
shoes	
vessels (wood, ceramic, glass and metal), including handmade urns	
Coins	

Table 1.1. Overview of funerary goods in Germanic burials (after Böhme 1974).

varying degrees of rarity, on both sides of the frontier. The key problem is that unequivocally linking these brooches, when found on Roman soil, to non-local individuals undervalues wider, supra-regional stylistic developments. Based on the distribution maps of the individual subtypes of tutulus brooches, for example, (discussed in more detail below in chapter 3), Halsall proposed that some types were produced in the provinces and others outside the Empire.[115]

The male-associated supporting-arm brooches have been labelled frontier style,[116] while Heeren has suggested that both Armbrust brooches and some variants of supporting-arm brooches may have developed within the provinces.[117] The Armbrust brooches in table 1.1 were most exhaustively studied by Schulze,[118] who traced their origin back to the north-eastern Germany and Scandinavia in the Early and Middle Roman period, while later types in the 3rd to 5th centuries appeared more frequently in southern and western Germany and the Netherlands.[119] Large amounts of data have been published since 1977, which gives the opportunity to update distribution maps, dating and the arguments for gendering these brooches as female-associated.

Weapon graves and the foederati

The second key component of many discussions around the Late Roman West is the identification in the archaeological records of the so-called *foederati*. They are commonly represented as mercenaries, fighting under their own leaders whilst being temporarily attached to the Roman army and returning home afterwards. However, the legal definitions of the *foedus* in the Late Roman period are very broad and include a number of possible terms of service.[120] Troops may

[115] Halsall 2000, 171-172.
[116] Halsall 2000, 172; see also Halsall 2009, 135-136; cf. Swift 2006, 100.
[117] Heeren 2017, 171, figure 11a.
[118] Schulze 1977.
[119] Schulze 1977, Karte 1-36.
[120] Heather 1997, 66; Southern and Dixon 2009, 48-50, 52, 64-65, 71-72; Schwarcz 1995.

have been raised among communities living both inside or outside of the Empire or could consist of men from various communities and regional origins gathering around a single leader.[121] The precise nature of their relationship to Rome was likely negotiated individually for each group.[122] Occasionally, *foederati* might have been recruited as full-time members of the Roman army to bulk up recruitment, or entire warbands would have been turned into official units under Roman officers.[123]

Roymans suggests that it is unlikely for Germania Secunda that Germanic mercenaries served a lengthy service in a regular Roman army unit before returning home and suggests they were recruited by local warlords who distributed their pay from Rome.[124] It is also possible that there were a small number of regular Roman units in Germania Secunda in the early 5th century, which would have influenced how federate groups might have been paid.[125] Their leaders would have been supported and subsidised by Rome to ensure their future cooperation and provide a safe buffer along the frontiers.[126] Whereas initially payments for service (*annona foederatica*) may have been in kind, later this was turned into yearly payments,[127] presumably in coin.[128] In some cases, *foederati* were invited to settle across the Roman provinces as *gentiles* after their military service,[129] for instance under Julian when *foederati* settled left of the Rhine.[130] In the Lower Rhine frontier area, the emergence of the *foederati* has been dated to the late 4th and early 5th centuries,[131] specifically as a result of Stilicho's renewal of contracts with the *gentes* of the Rhine and withdrawal of the standing army in AD 401/402.[132]

The identification of Germanic *foederati* has often been built on the occurrence of graves in the Late Roman West, which contained weapons and military belt sets.[133] Weapon burials are most commonly found outside of the study area, in France and southern Belgium,[134] and are only found rarely in the more immediate frontier zone and outside of the Empire.[135] The rite itself developed in the Roman provinces from the late 2nd century onward.[136]

The Germanic connotation of weapon burials is based on the notion that as Roman citizens were not allowed to bear arms in public, their deposition in graves must have been a non-Roman practice[137] and is implied to reflect the increased Germanisation of the Late Roman army already underway before the reign of Theodosius I.[138] Others have linked the deposition of weapons in graves to martial identities those associated with the Roman army, as they were also allowed to possess weapons[139] and the Frankish nature of the *francisca* or axe has been questioned.[140] Besides containing a variety of weapons (including *spathae* and *franciscae*), belt sets and military-associated brooches are also frequently included.[141] It has been suggested that the weapons these men were buried with were produced in Roman factories,[142] indicative of a link between weapon burials and those serving in the Roman armies.[143]

Much like the distribution of female-gendered dress accessories, the weapon grave rite was far from uniform across north-western Europe. It is mostly found in Gallia Belgica and Gallia Lugdunensis[144] and it is rare in Germania Secunda.[145] Weapon graves are relatively closely associated with fortifications in the hinterland[146] but less so with frontier fortifications. In Germania

121 Southern and Dixon 2009, 48-49.
122 Heather 1997, 66.
123 Southern and Dixon 2009, 48-49; see also Schwarcz 1995, 294 on their occasional inclusion in the *limitanei* units.
124 Roymans 2017, 69.
125 Roymans 2017, 69.
126 Southern and Dixon 2009, 48.
127 Southern and Dixon 2009, 71.
128 Cf. Guest 2008 on *solidi* payments as part of treaties; Martin 2009; Roymans 2017; cf. Esmonde Cleary 2013, 350 on army payments in the Late Roman period in coin and/or bullion.
129 Schwarcz 1995, 292-293.
130 Schwarcz 1995, 293.
131 Böhme 1974, 204-205; Lenz 2005, 368ff; Heeren 2017, 164; Roymans 2017, 66ff.; Roymans and Heeren 2022, 145-148.
132 Kulikowski 2000, 326; Roymans 2017, 66; Schwarcz 1995, 295; Claudianus, *De Bello Gothico* 429-432.
133 Böhner 1963; Böhme 1974; see also Werner 1958. Although originally interpreted as belonging to the historically known *laeti*, the elaborate burial rite associated with these graves was later deemed to be at odds with their relatively low social status; see discussions in Böhner 1963; Roossens 1968; Böhme 1974.
134 Böhme 1974, 357-375; Theuws 2009.
135 Böhme 1974; Theuws 2019, 130, figure 8.2; Hamm 2022.
136 From the mid-4th century onwards, depositions of belt sets, brooches, and weapons for men (mostly lances, bows and arrows and axes) and brooches, hairpins and jewellery for women appear (Theuws 2009, 286-287). From the late 4th century onwards, a small number of male graves begin to include swords and shields (Theuws 2009, 287), although these are extremely rare. Finally, swords start to appear in graves in significant numbers from the second half of the 5th century onwards (Theuws and Alkemade 2000), which is considered the final step in the development towards the early medieval tradition of the *Reihengräber* or row graves (Halsall 1996; Brather 2014).
137 See citations in Halsall 2009, 120.
138 Southern and Dixon 2009, 50-55. Halsall 2014, 102-109, claims depictions of the barbarisation of the Late Roman army tend to be exaggerated.
139 Hamm 2022; Swift 2006, 109-110.
140 Halsall 2009, 135 claims they were used extensively by the Late Roman army and adopted by the Franks through military service, not the other way around; see Theuws 2009 on axes as woodworking tools.
141 See for overviews Günther 1971; Geary 1988; Schulze-Dorlämm 1986a; Böhme 1996; Böhme 1999.
142 Halsall 2000, 174; see also Kazanski 1995.
143 Halsall also associated the deposition of knives with high-ranking military officials, as knives are often found with military belts in British cemeteries such as Lankhills and Gloucester (Halsall 1996, 201; see also Cooke 1998, 199 for the same theory).
144 Böhner 1963, 146.
145 Although finds from the Lower Rhine are known such as from Krefeld-Gellep (Pirling 1966-1997 and Pirling and Siepen 2000-2006) and Rhenen-Dondersberg (Wagner and Ypey 2011). However, since Böhme's 1974 inventory, the number of known Late Roman weapon burials has not increased significantly (Theuws 2009; Hamm 2022).
146 Theuws 2009, 287, 312; Böhme 2008. Such as in the Ardennes (Furfooz, Samson and Vireux-Molhain; Brulet 1990; Dasnoy 1988; Lemant 1985) and along the Channel coast (Vron; Seiller 1992).

Secunda, most weapon graves in the immediate frontier zone are found in rural or urban cemeteries. Weapon graves in northern France and southern Belgium also date earlier (second half 4th century) than those in northern Belgium and the Netherlands (first half 5th century).[147] Weapon graves were not particularly well-established in Germania Magna as a burial,[148] while they are incidentally found across Northern Gaul in the Early and Middle Roman period,[149] suggesting the Late Roman examples may be continuations of a provincial-Roman practice.

For the weapon burial rite specifically, two camps seem to have formed:[150] those who view it as not inherently Germanic and more likely to express elite identities and potentially a development of pre-existing Roman practices[151] and those who interpret them as evidence for Germanic identities, usually *foederati*.[152] Several aspects of the weapon grave rite appear to have been rooted in provincial-Roman practices,[153] including the choice of inhumation, the deposition of pottery, glass and bronze vessels, and the placement of a coin in the mouth for an obol.[154]

Theuws has reframed the gift of weapons in graves as a symbolic gesture, rather than a sign of martial identity. He pointed out that axes, besides being used as weapons, could also function as tools; and he therefore links axes predominantly to the activities of wood-cutting and land-clearing.[155] He also rebranded lances, spears, and arrows as potential non-weapons, linking them instead to hunting activities,[156] with only the sword considered to have been purely a weapon. The relative rarity of weapon graves in the study area means that a re-evaluation of this particular burial practice can only achieve so much.[157] Some types of Late Roman military belt set, however, have also been linked to Germanic male identities, in particular the 5th-century types.[158] Finds of weapons and military belts outside of the Empire are commonly interpreted as evidence for Germanic veterans who had returned home after the end of their service.[159]

Military belt sets

Although military belt sets are linked to the weapon grave rite, they appear far more frequently in burial contexts and are found in fortifications, settlements, and as stray finds. This allows for a far wider range of find contexts to be included in their analysis. The Late Roman belt set also has an additional set social connotations attached it, namely the military community.[160] Belts were part of the Late Roman military dress, which also included a crossbow brooch and was meant to convey a soldier's identity when not wearing full armour.[161] Written sources refer to their *habitus atque habitudo* or their manner and dress.[162] From depictions on gravestones, it becomes clear that unarmoured soldiers would have been recognisable by their belted tunics, hob-nailed sandals and cloaks fastened on the right shoulder with a brooch.[163] Of these, the cloak and tunic are usually not preserved in the archaeological record and hob-nailed sandals are known to have been worn by civilians as well in the frontier zone.[164] We are left, therefore, with the brooches and belt sets.

The personal importance of the belt to the soldier is well attested in both the written sources and the archaeological evidence.[165] They are often found in graves and were likely kept by veterans after the end of their service as a sign of honourable discharge (*honesta missio*). As such, they would have functioned as a much more visual marker of someone's social status (and its associated benefits) than for instance the military diploma.[166] Stripping soldiers of military belts as a form of disciplinary measure dates back to the very Early Roman Empire and was also performed in some cases after capitulation, desertion or dishonourable discharge.[167] That the importance of the military belt was still felt in the Late Roman period is illustrated by several references to Christian soldier-saints who renounced their military status by publicly throwing off their belts.[168]

Some scholars have argued for the adoption of military-style belts by the civilian population in the Late Roman

147 Böhme 1974, 204-205. Although Böhme originally linked the first group to Germanic settlers (the practice of depositing partial weapons, such as swords without scabbards etc. was seen as especially indicative), he only interpreted the weapon graves from 400 AD onwards as *foederati* graves (Böhme 1974, 203-204).
148 Halsall 1992, 174.
149 Van Doorselaer 1963/1964.
150 Swift 2006, 105.
151 E.g., Halsall 2010; Brather 2004; Theuws 2009; Theuws and Alkemade 2000.
152 E.g., Böhme 1974; Böhme 2021; Siegmund 1998a; Bierbrauer 2004; Schmauder 2003; see for discussions Halsall 2010; Theuws 2019.
153 Fehr 2008, 96.
154 Böhme 1997, 93; Halsall 1996, 199-200; Halsall 2000, 168. Although some have suggested that using a gold or silver coin as an obol indicates a Germanic identity of the deceased; Böhme 2007, 7; Böhme 2021, 144; Gottschalk 2008, 243, Abb. 14). In fact, Böhme has argued that the adoption of Roman burial rites, material culture, dress style and subsistence strategy were all signs of assimilation of migrant communities into the Roman Empire (2003, 55-58).
155 Theuws 2009, 301-303.
156 Theuws 2009, 303-307.
157 Furthermore, a superregional analysis of weapon graves is currently being undertaken by Benjamin Hamm at the University of Freiburg.
158 Böhme 1974, 191.
159 Böhme 1974, 194; Halsall 2009, 138.
160 Sommer 1984; Hoss 2012; cf. Swift 2000a, 2-3.
161 Hoss 2012, 29.
162 Hoss 2012, 29; cf. James 2001; James 2004, 253.
163 Speidel 1976, 124; Bishop and Coulston 2006, 253.
164 Van Driel-Murray 2016, 140-141; Coulston 2004, 142.
165 Coulston 2000; Hoss 2010; Hoss 2017ab; Speidel 2009.
166 Hoss 2012, 31.
167 See Woods 1993; Hoss 2012 for citations.
168 Woods 1993, 55-60.

period,[169] although a predominantly army-related interpretation of these graves fits well with their distribution area, which is largely focused around the heavily militarised frontier zone,[170] in which military identities must have been an important currency. Bullinger also lists a number of depictions of Late Roman soldiers and emperors showing belt sets and elaborate buckles.[171] Swift argued that not all belts may have been exclusive to the Roman military, that those belts worn by civilians could have a different distribution and that social connotations may have been time-specific.[172] She also proposed that types with the widest and most universal distribution may be more likely to have been military associated.[173] Böhme has linked the appearance of late 4th and early 5th-century belt sets in Germania Magna to Germanic soldiers.[174]

Although Late Roman military belts are found throughout the Western Empire, some regionality in style has been identified. Simpson has studied the distribution of simple buckles and associated plates and loops in the eastern provinces of the Roman west, suggesting they were produced in *fabricae* in Pannonia or Illyricum, parallel to the crossbow brooch.[175] Hawkes and Dunning on the other hand, developed a detailed typology for animal-headed (especially dolphin-headed) belt buckles from Britain.[176] The vast diversity of forms and decorative styles have also led some to suggest that these belts could not have been part of the official military uniform.[177] However, the idea that the Roman army maintained any kind of enforced uniformity in its dress comparable to modern standards has been rejected in more recent studies.[178] The clustering of graves containing belts in the frontier zones has also been interpreted as a unique type of provincial rite that included burying the dead in full attire.[179] Their frequent appearance in Roman forts is checked by the understanding that those places were not only visited by soldiers, but also by members of the rural local population, soldiers' families, and crafts- and tradespeople.[180] Sommer furthermore pointed out that changes in legal status after AD 313 meant that the difference between military and civilian population became increasingly negligible in the frontier zone[181] and ultimately concluded that the belt set had lost all its military and governmental status in the Rhine and Danube provinces in the Late Roman period and that they were worn by civilians and military personnel alike.[182]

Sommer also suggested that the shift in social status of the belt from military to civilian was brought about by the increasing numbers of 'barbarians' enlisting in the Roman army, who may have used their own gear in the periods following the reigns of Diocletian and Constantine.[183] As evidence to support this, he notes the presence of 'barbarian' elements such as combs, scissors, tweezers, fire strikers and iron buckles and brooches.[184] Combs, tweezers, razors and scissors are not unusual occurrences in provincial-Roman rural cemeteries through the 1st-3rd centuries (e.g., Tiel-Passewaaij).[185] More generally, however, it should be emphasised that the appearance of certain objects in a non-Roman grave does not automatically make them inherently non-Roman: Böhme also listed crossbow brooches in his inventory of Germanic funerary gifts,[186] which are commonly seen as a key marker of Late Roman military power.[187]

Apart from typological differences between 4th- and 5th-century belts, distinctions in quality and production technology have also been highlighted. Böhme's analysis of elaborate *Kerbschnitt*-decorated military belts found close stylistic similarities between belt fittings found in the 'Gallo-Belgian' area and the area around the Danube.[188] At the very least, this seems to suggest the existence of a provincial style of military dress.[189] Böhme went one step further, however, in arguing that these provincial style similarities, together with the common occurrence of a limited number of decorative schemes and the highly complex and technical nature of producing these objects, are sufficient argument to suggest production by highly skilled workers in 'factory-like', state-run workshops in his *Stufen* I and II (AD 350-420).[190] He later proposed the workshops of the *comes sacrarum largitionum*[191] as locales of production.[192] In his discussion of later material, the *einfache Gürtel* of his *Stufe* III (AD 400-450), Böhme argued that these displayed so many individual styles as well as a simplified production method (open-sand

[169] Sommer 1984, 102ff.; see for a more elaborate discussion chapter 4.
[170] Swift 2006, 105; Sommer 1984, 87.
[171] Bullinger 1969, 68-69.
[172] Swift 2000a, 2.
[173] Swift 2000a, 201.
[174] Böhme 1974, 193-194.
[175] Simpson 1976, 196-198.
[176] Hawkes and Dunning 1961.
[177] Sommer 1984, 2, 101; cf. Böhme 1974, 54.
[178] Bishop and Coulston 2006, 266-267; Coulston 2013, 464.
[179] Cf. Koch 1965.
[180] Sommer 1984, 87; cf. Reuter 2008.
[181] Sommer 1984, 88.
[182] Sommer 1984, 100.
[183] Sommer 1984, 100. However, this is not necessarily a Late Roman phenomenon: the auxiliaries of the Early and Middle Roman period also used their own gear (Nicolay 2007).
[184] Sommer 1984, 101. See also Böhme 1974, 114ff. on a comparable list (reproduced below in table 1.1), which also includes, for men at least, razors, bag handles and carved horn or ivory objects).
[185] Aarts and Heeren 2012.
[186] Böhme 1974, 51. Cf. Allason-Jones 1999,1 on a similar argument regarding non-military finds from military contexts.
[187] Van Thienen 2017; Van Thienen and Lycke 2017; Swift 2000a, 3; Heeren and Van der Feijst 2017, 182.
[188] Böhme 1974, 94-97.
[189] See also discussion in Swift 2000a, 185-186.
[190] Böhme 1974, 97.
[191] Responsible for payments and precious metal revenues; Esmonde Cleary 2013, 350.
[192] Böhme 2021, 136.

casting instead of moulds, fixed backplates instead of hinges) that smaller, local workshops were behind their manufacturing.[193] Originally, he placed these in the Roman provinces and frontiers,[194] later also suggesting some production may have taken place in Germania Magna.[195]

Sommer also pointed out that although Late Roman buckles are depicted in the *Notitia Dignitatum* (on the pages concerning the *comites largitionum* and the *rerum privatorum*,[196] these are not found on the pages related to the *fabricae* themselves, making it less likely that the *fabricae* were involved in their manufacturing. Several *Halbfabrikaten*, a casting model and a mould of a belt fitting are also known from the Lower Rhine frontier,[197] so the possibility of small-scale production and repairs cannot be excluded. It has also been noted that due to errors and omissions in the *Notitia Dignitatum*, it does not offer an accurate list of the western *fabricae* in the 5th century.[198]

Further stylistic arguments have been put forward by Simpson, who pointed out that the amphora-shaped strap ends show a certain amount of uniformity in appearance and design, raising the possibility that these were produced in a limited number of workshops in a relatively short period of time.[199] Hoss has suggested that due to the relative frequency with which the Late Roman armies were defeated, new recruits needed to be equipped more quickly, potentially necessitating the introduction of the *fabricae*.[200] *Papyri* from the mid-4th century indicate that the production of linen for military outfits was also strictly state-controlled,[201] so it is not unreasonable to imagine the Roman state to be involved in the production of other gear for its soldiers. The Late Roman *fabricae* as mentioned in the Notitia Dignitatum are usually thought to have been positioned somewhere close to the stationed armies, behind the Rhine and Danube frontiers, most likely growing out of existing military and/or civilian industries.[202] James describes how the Roman government was able to exercise a significant amount of supervision over the production of military equipment, dictating quality control and regulations, accounting for material costs and setting production quotas.[203]

However, the link between belts as opposed to weapons or other forms of armour and the *fabricae* is largely assumed. Swift has pointed out the general lack of archaeological evidence for production, as most studies rely on stylistic features to suggest workshop groups.[204] In addition to this, most of the attention has always gone to the *Kerbschnitt* belt sets, despite them making up only a minority of the material in the study area (see chapter 4). Böhme has argued for more localised production for the simpler belts of the 5th century,[205] but has offered little interpretation for the non-*Kerbschnitt* material of the 4th century.

A similar discussion has revolved around the production of the military crossbow brooch. Production in state-run manufacturing centres has been suggested,[206] although again concrete workshop evidence is lacking.[207] Very little is known about the inner workings of these workshops. It may be expected that each man worked individually to produce finished pieces from scratch or that there was division of labour in the production of some items; for example, metal and wooden parts of shield may have been made by different workmen.[208] However, given the expected size of these workshops, it is equally imaginable that labour was specialised and divided, with each step of the production process delegated to a specialist worker, rather than object types. James also raises the unanswerable question of whether, and to what extent, army units repaired their own gear and if items would be sent back to the *fabricae* for refurbishing.[209]

Focusing on attaching labels such as *fabricae* or *comes sacrarum largitionum* do not really tell us all that much about the actual production organisation. It is much more fruitful to discuss these objects in terms of standardisation of production and the possible indications for state control over various stages of the production process. Böhme has suggested that more metallurgical analysis and study of Late Roman belts is necessary to understand their production more accurately,[210] and recent work on crossbow brooches may serve as an inspiration.[211]

Rural settlements

Alongside changes in burial rites and object styles, rural timber-built settlements also underwent a marked development in Germania Secunda and adjacent provinces in the Late Roman period. These include the introduction of three-aisled longhouse types similar

193 Böhme 1974, 97.
194 Böhme 1974, 97.
195 Böhme 2021, 137.
196 Sommer 1984, footnote 116.
197 Sommer 1984, 102, Abb. 1 on *Halbfabrikaten*; cf. Oldenstein 1985, 89; Hoss 2018, figure 8.7; Böhme 2008; Böhme 2021.
198 O'Hara 2013, 137.
199 Simpson 1976, 200.
200 Hoss 2021, 6.
201 See references in Liu 2012, 21; Dross-Krüpe 2012.
202 James 1988, 262, 269; cf. Böhme 2021, 135ff.; see also Glad 2018.
203 James 1988, 271, 275.
204 Swift 2000a, 1.
205 Böhme 1974, 97; Böhme 2021, 137.
206 Especially in Pannonnia; e.g., Riha 1979, 171; Van Thienen and Lycke 2017, 51.
207 Swift 2000a, 3; Van Thienen 2021, 48. Although some lead models are known from Socchieve, Italy (Giumlia-Mair *et al.* 2007).
208 James 1988, 275.
209 James 1988, 275.
210 Böhme 2021, 136.
211 Bayley and Butcher 1981; Bayley and Butcher 2004; Van Thienen and Lycke 2017.

to those common in Germania Magna, sunken feature buildings (SFBs), evidence for rye cultivation and handmade pottery in Germanic styles.[212] Handmade pottery is common in Late Iron Age and Early Roman sites in the province of Germania Inferior, although it would become significantly less important over the course of the Middle Roman period in rural settlement contexts.[213] As a result, various studies have aimed to define Late Roman Germanic-style handmade pottery on Roman soil more precisely.[214] Pottery in a non-local style, when made in local fabrics, may indicate the movement of their makers and consumers, and this may be especially true for vessels associated with particular ways of preparing and consuming food.[215]

Timber-built rural settlements were the most common settlement type throughout the Iron Age and Roman period on the sandy soils of Flanders and the southern Netherlands as well as the river deltas of the Meuse and Rhine and are also known, albeit more rarely, from the villa landscapes of the German Lower Rhine area.[216] There are clear similarities in ways of life between the provincial-Roman and Germanic rural settlement landscapes.[217] However, studies into Late Roman timber-built settlements tend to focus on the differences, rather than similarities.

Heeren has drawn a distinction between the stylistic developments of house plans on either side of the Rhine frontier.[218] He interprets the presence of three-aisled longhouses in the 'northern tradition' in several Late Roman settlements in Germania Secunda as evidence for migration from the north,[219] despite the fact that each house plan is unique and some deviate quite strongly from northern typologies.[220] Heeren sees their presence in Germania Secunda as a sign that '*the house-building traditions of the region of origin remained virtually unchanged and recognisable in the immigration area*',[221] citing the similarities of the sandy subsoil, climate, and vegetation in both the emigration and immigration areas as well as the abandonment of the immigration area as contributing factors.[222] However, others have suggested that not just the similarities, but the clear structural differences also need to be explained.[223] Bender has furthermore warned against interpreting the development of the Late Roman rural settlement landscape along the Rhine in too simplistic terms, arguing that there were no single patterns or tendencies or supra-regional causation behind the changes.[224]

The argument for rye as a cultural signifier is based on the link between cultural or social identities and food habits[225] and the general absence of rye in the areas south of the Rhine before the Late Roman period, while it played an important role in the diets of communities living in the sandy regions north of the Rhine from the 1st century AD onwards.[226] However, rye is mentioned in some Roman sources[227] and some previous studies have suggested it was at least consumed by inhabitants of the western provinces.[228] Furthermore, changes in dietary

[212] Henning 1989; Van Ossel 1992; Whittaker 1994; Lenz 2005; Heeren 2017; Kaspyrzk 2017; Jäger 2019; Hamerow 2012; Steuer 2021. Other, less easily quantifiable criteria are also occasionally used, such as evidence for iron and bronze working (which is indeed commonly found in settlements in Germania Magna but can hardly be called culturally specific) and the proximity of some settlement sites to cemeteries with graves containing Germanic-style grave goods (also rather open to vagueness and circular arguments). Finally, Lenz (2005, 386, 432) lists epigraphical evidence as a tool for identifying Germanic occupation of provincial-Roman *villae rusticae*.

[213] Vos 2009, 88; cf. Van Enckevort 2012, 317. See also Hendriks 2023, 628 on its disappearance and later reappearance in the Meuse valley. Elsewhere, however, more continuity was found. In the Lys-Scheldt area, it made up 80-90% in contexts dating up until the Flavian period, after which it declined to around 40% in the late 2nd to mid-3rd century (Vermeulen 1992, 103-113 in Van Thienen 2016, 171). In terms of functionality, handmade wares would be well-suited to processing heat due to their form, large pores and inclusions (Van der Veen 2018; Rice 2005, 368), perhaps explaining why this local/regional practice did not completely cease when wheel-turned import wares became available.

[214] De Paepe and Van Impe 1991; Van Thienen *et al.* 2020; Opsteyn 2003; Verhoeven 2003.

[215] Eckardt and Müldner 2016, 206; Prien 2005, 311; Eckardt 2014, 30.

[216] Brüggler *et al.* 2017.

[217] Elton 1996a, 130; Elton 1996b, 109.

[218] Heeren 2017, 160-162. Arguing that longhouses north of the Rhine were predominantly three-aisled, charting their development from the Hijken type in the Late Iron Age to the Wijster B and Peelo A types in the Late Roman period (see for this development also Huijts 1992; Waterbolk 2008; Van der Velde 2014). In contrast to this, he cites several instances of house plans part of the building traditions south of the Rhine, namely the shorter two-aisled Haps and Oss-Ussen 5A houses of the Late Iron Age and the two-aisled Alphen-Ekeren house, which became the standard house type for the southern Netherlands and northern Belgium from the 1st to late 3rd century (Heeren 2017, 162).

[219] Heeren 2017, 162.

[220] Heeren 2017, 162; cf. Theuws 2008, 876, Abb. 12.

[221] Heeren 2017, 162.

[222] Cf. Heeren 2015.

[223] Van Ossel and Ouzoulias 2001, 238. See in particular their discussion of Gennep, Donk, Neerharen-Rekem and Sint-Gillis-Waas, questioning the homogeneity of these 'Germanic' settlements (Van Ossel and Ouzoulias 2001, 238).

[224] Van Ossel and Ouzoulias 2001, 194.

[225] Heeren 2017, 162; Eckardt and Müldner 2016, 206; Cool 2006a, 172ff.; Cool 2006b, 75.

[226] Heeren 2017, 162, citing Hiddink 1999, 157-162 and table 3; see also Van Zeist 1968.

[227] Mills 2006, 176. Pliny writes in his Natural Histories about the versatility of the crop, as well as its high yields and unpleasant flavour (*Plin. Nat.* XVIII.XL.141). Atheneaus mentions rye bread (*Ath.* III.74) and the price of rye is also listed in Diocletian's price edict of AD 301 (Mills 2006, 182).

[228] Helbaek suggested that rye was introduced in Britain by the Romans (1964, 163), while Kooistra has suggested that the presence of small amounts of rye in some pre-Flavian military fortifications could indicate that farmers from north of the frontier supplied the Roman army with cereals (Kooistra 2009, 227). Van Zeist also noted the presence of small amounts of rye from Roman sites in the southern Netherlands while it was completely absent from several contemporary sites from the northern Netherlands (Van Zeist 1968, 160). He argued that it was unlikely that weed rye confined itself only to those regions conquered by the Romans, suggesting the possibility of cultivation in a rotating crop system that also included other cereals like barley and wheat (Van Zeist 1968, 160) as well as the likelihood that it was the Romans who introduced rye as a crop to the southern Netherlands (Van Zeist 1968, 161).

habits by introducing new crops could also be the result of economic crises[229] or contact with other groups (such as the introduction of the potato from the Americas to Europe).[230] Apart from these considerations, there are methodological complications in distinguishing rye in crop and weed form in archaeobotanical samples,[231] further complicating the interpretation of archaeological data.

The available evidence for migration-related settlements also dates quite broadly, extending in some cases to Germanic-style handmade pottery into the 2nd or 3rd century.[232] Other migration-related settlements appear to have been founded in the early 4th century or were not newly founded sites but formed later phases in provincial-Roman native settlements (see for examples chapter 2). Fitting the characteristically complex and ambiguous archaeological record in a narrow chronological window strips away the longer cultural processes of exchange, adaptation, acculturation, and cross-frontier mobility that lay at their root.

The scientific revolution

Despite criticism that ethnicity is best understood as a constructed identity, not as a matter of biology[233] and some studies criticising answering cultural historical questions with modern techniques,[234] methods such as stable isotope and ancient DNA are increasingly being used to identify and study migrations in the past. Recent works have highlighted both the existence of mobility in the (Late) Roman period and a distinct lack of simplicity and linearity in how mobility took place.[235] In a triple-isotope analysis of burials in the Dutch central river area, almost all sampled burials from the Early-Middle Roman period displayed strontium levels consistent with the local or regional range, including in samples related to childhood.[236] Half of all Late Roman burials provided indications that the deceased had spent their childhoods elsewhere.[237] This group included strontium signals that are non-regional (outside of the river area) and non-local (somewhere else within the river area.[238] Definitive areas of origin were not identifiable based on the strontium spectra. Two individuals possibly originated from Hungary, based on their carbon isotope signals; ancient mDNA from a male in Tiel-Medel with a local strontium signature showed a genetic link with regions where millet and sorghum are staple cereals, namely the Near and Middle East, the Caucasus or Northwest Africa.[239] Some buried individuals were found to have moved more than once during the first 16 years of life.[240]

Data collected from north of the frontier showed that mobility was equally common there,[241] with some samples displaying strontium and oxygen signatures found outside of the Netherlands, including Italy, France and Britain.[242] Non-Dutch origins and intra-individual mobility were also found in several Late Roman burials from Germania Secunda.[243] It seems that in the Late Roman period, high degrees of mobility, occasionally over long distances were normal occurrences both inside and outside the Empire.[244] A clear movement of people from outside the Empire to the frontier zone or further into the provinces was not evident from the isotope signals.[245] Burials with Germanic-style material culture at the Late Roman cemetery at Hürth-Hermülheim yielded identical isotope signals to those in contemporary graves without Germanic indicators.[246] The strontium samples of four burials were found to be comparable to samples from across the frontier (three women, one man) but none of those graves contained Germanic-style material culture.[247]

Some methodological issues may be raised that need to considered when combining artefact studies with isotope analysis. First of all, best practice for securely identifying local origins of people is a multiple-isotope approach.[248] Furthermore, most studies cited above are relatively small-scale, and a much more rigorous dataset is needed before any definitive statements about movement, migration, or the scale thereof can be made. Finally, extreme care should be taken in linking

[229] Cf. Squatriti 2016.
[230] Prien 2005, 314.
[231] Behre 1992; see chapter 3 for more discussion.
[232] Opsteyn 2003; Vermeulen 1992; cf. Van Thienen 2020, 9-10.
[233] Jones 2009, 5; Halsall 2014, 518-519.
[234] Crellin and Harris 2020.
[235] Killgrove 2010; Montgomery *et al.* 2010; Swift 2010, 238; Gretzinger *et al.* 2022; Antonio *et al.* 2019; Kootker and Heeren 2022; Kootker *et al.* 2022; Schweissing and Grupe 2003; Evans *et al.* 2006; Redfern *et al.* 2016; Martiano *et al.* 2016; Budd *et al.* 2004; Eckardt *et al.* 2014; Eckardt and Müldner 2016; Eckardt 2010; Leach *et al.* 2009; Prowse 2016.
[236] The authors note that based on the data, mobility between isotopically similar regions cannot be excluded (Kootker *et al.* 2022).
[237] Six out of 12 burials sampled (Kootker *et al.* 2022), which is a limited dataset. A more large-scale study into isotopes from human burials is currently ongoing (De Coster in prep.).
[238] Kootker *et al.* 2022, 6.
[239] Kootker *et al.* 2022, 7; Altena in press. This burial also contained a Late Roman belt set, which raises questions around the regional origin of those displaying military identities in the Lower Rhine frontier zone.
[240] Kootker and Heeren 2022, 59.
[241] Kootker and Heeren 2022, 48.
[242] Kootker and Heeren 2022, 49.
[243] Kootker and Heeren 2022, 60.
[244] Apart from the complexity of the results themselves, some have also argued that these types of projects for failing to appreciate that migration never happened in discrete periods but was constant (Halsall 2012, 33), while others frame this development as introducing objective data to a largely subjective argument (Härke 2004, 456; Hakenbeck 2008, 9).
[245] However, Kootker and Heeren propose that based on similarities between contemporary settlements on either side of the frontier and the occurrence of gold coin hoards in the area, north-south migration would still be the most likely scenario (Kootker and Heeren 2022, 67-69). It is not entirely clear from their synthesis how the large number of Late Roman 'non-Dutch' samples fit into this narrative.
[246] Gottschalk 2008, 144.
[247] Gottschalk 2008, 144.
[248] Madgwick *et al.* 2021; Kootker *et al.* 2022.

isotope signals to perceived regional origins of material culture. Although Kootker *et al.* claim that in their preliminary results, the correlation between stable strontium, oxygen and carbon isotopes and material culture is 'evident', the wide range of signals in their samples, the difficulty in interpreting the oxygen and carbon signals in their dataset and the varying levels of evidence for regional origins of material culture[249] should caution us against using material culture to narrow down regional origins from isotope analysis or vice versa. As Crellin and Harris point out writing on aDNA, the introduction of new (scientific) data does not remove the need for a thorough theoretical framework for interpreting material culture.[250]

Discussion and themes

Several themes can be extracted from the very brief overview of Late Roman archaeology presented above. Underlying everything is a perceived dichotomy between the 'Roman' 4th century and the 'Germanic' 5th century.[251] Halsall argued that the 5th-century migration debate needed '*to be placed in a longer-term perspective looking at both sides of the divide between the 'Roman' fourth century and the 'migration-period' fifth century*'.[252] The archaeological remains of the rural and military communities on both sides of the Lower Germanic Rhine frontier in the Late Roman period are an ideal case study for exactly that rethinking. A data-led, holistic approach was taken in order to include as many facets of Late Roman society as possible.

The growing amount of data available for this region has already been touched upon. This provides the opportunity to update distribution maps and potentially upset conceived wisdom about the regional origins and developments of object types. The publication of new closed contexts also means dating evidence and typo-chronologies (many of which were founded in the 20th century) can be reviewed. Focusing on one province means all the evidence comes from one area that was in the eyes of the Roman state a cohesive whole, even though it might not have been culturally homogeneous. By restricting the geographical scope, a more in-depth analysis of the finds and settlement features may be presented: although superregional studies are great tools for drawing comparisons between patterns found in other regions, a larger research area and subsequent increase in data means less space can be devoted to detail. The comparison with Germania Magna is also very important, as the arguments for labelling certain finds categories or styles of architecture as 'Germanic' have often relied on simplistic references to evidence from outside of the Empire. The available evidence for the Lower Rhine frontier and its surrounding area is extensive and much of the raw data has already been published in regional studies before.[253] However, there is room for new interpretations and treatments of much of this evidence and there are several next steps that can be taken in the migration debate using the archaeological data from this area.

In term of themes and datasets, several may be taken from the literature review. First is the transformation of the military occupation of the region in the 4th and 5th centuries and the increased deployment of Germanic *foederati* in the Lower Rhine area from the late 4th century onwards.[254] Secondly, there is the simultaneous transformation of the rural settlement landscapes, which is typically described in terms of abandonment by and replacement of provincial-Roman habitation through Germanic migration.[255] Thirdly, there is the development of new styles of material culture in the form of brooches and hairpins. The appearance of military elites or *foederati* and female-associated high-status dress accessories in the frontier zone cannot be seen as separate from the emergence of migration-related settlements in Germania Secunda. In my view, these three phenomena are part of a wider cultural shift taking place along the Lower Rhine frontier and its hinterland. In order to facilitate a fresh approach, it is key to use a variety of datasets. This monograph does not include an integrated approach of both historical and archaeological sources. As outlined in the literature review above, this often results in attempts to fit ambiguous archaeological data in a linear historical narrative. For that reason, it was decided to focus for this dissertation on a critical analysis of the archaeological data first (for material culture and settlements), as well as the creation of a new archaeological dataset (XRF), which in future may reinvigorate the debate.

Migration, assimilation, and adaptation: settlements

A fruitful approach to changes in the Late Roman rural settlement landscape in Germania Secunda is to take a *longue durée* perspective to the most important developments (changing architecture, diet and material culture) on both sides of the frontier to allow long-term interactive processes such as trade, exchange and mobility to play a role and move away from an event-based narrative.[256] Migration and mobility are a constant and predictable aspect of human existence,[257] and this must have been especially true in the Roman frontier

[249] Kootker *et al.* 2022, 6-7.
[250] Crellin and Harris 2020, 38.
[251] Swift 2006, 105; Halsall 2012, 29.
[252] Halsall 2012, 29.
[253] Böhme 1974; Lenz 2005; Van Thienen 2016; Heeren 2017; Kaspyrzk 2017; Mirschenz 2013; Bérenger 2000; Brieske 2001.
[254] Böhme 1974, 204-205; Heeren 2017, 164; Roymans 2017, 66ff.; Roymans and Heeren 2022.
[255] Henning 1989; Lenz 2005; Heeren 2017; Kasprzyk 2017; Jäger 2019; Hamerow 2012.
[256] See Bruun 2016, 192 on the differences between trade, travel, mobility and migration.
[257] Halsall 2014, 519; Anthony 1997, 22.

zones.[258] A characterisation of Late Roman migration-related settlements needs to focus not only on potential markers for the presence of Germanic identities, but also take into account the survival of provincial-Roman settlement characteristics and identify concrete signs of interaction and hybridisation. This allows the study of long-term interactive processes such as trade, exchange and mobility to play a role and move away from an event-based narrative.

It will also aide in incorporating these 'migration-related' settlements into wider discussions on settlement continuity in the Late Roman period. Miller has argued that the formation of a frontier culture that was not the direct result of peoples living across the Roman frontier or the '*Germanised Roman army*', but instead the result of a millennium of interaction between the Mediterranean and the inhabitants of northern Europe.[259] 'Barbarisation' should instead be understood as a much more complex process: '*the emergence of a culture-type that is of the frontier but that is not necessarily produced by a floodtide of barbarian intrusion*'.[260] That what we refer to as provincial-Roman in the frontier zones always was a hybrid of sorts[261] and far from static throughout the Roman period. Styles of pottery, material culture and architecture changed significantly throughout the Early and Middle Roman period.

Timber-built houses in Germania Inferior/Secunda were far from uniform or static. Some types dated to the Early and Middle Roman period show influences from outside of the Empire,[262] while others are more hybrid[263] and yet others appear more widely across multiple provinces.[264] The pottery assemblages from these sites feature a wide area of geographical origins, including wheel-turned pottery from regional and provincial production centres as well as handmade pottery rooted in Iron Age traditions.[265] At the same time, dress accessories originating outside of the Empire are occasionally found within Germania Inferior as well.[266] This constantly shifting, developing settlement landscape is referred to by terms such as 'provincial-Roman' or 'native-Roman', with adoption of new types of material culture or architecture a key part of the fabric.

Studies on the Late Roman period, however, have usually portrayed the changes in settlement landscape in that period as distinct from this broader process, and solely related to Germanic migration. The chapter on settlements has the opportunity to put Late Roman settlements with Germanic features into a broader perspective, both chronologically and spatially, and investigate how these settlements developed and may be placed in this long history of frontier hybridity and adaptation. This will aide in breaking down the Roman: Germanic dichotomy that underpins so much of the discourse around the Late Roman period in the West, allowing additional interpretative frameworks for cultural change such as globalisation and glocalisation to be considered.[267]

A long-term approach also allows for the social impact of mobility to be addressed. Goffart has highlighted questions about the effects migration-related settlements may have had on the areas where they were founded and the relationships between newcomers and established inhabitants.[268] In this light, he noted that the '*social and proprietary order*' and economies of many provinces in southern Europe did not seem to have been significantly disrupted by the arrival of Goths, Vandals or Burgundians.[269] Van Ossel and Ouzoulias have also noted that many settlements linked to Germanic settlers look very different from each other, which has not been adequately addressed.[270]

Germanic-style dress accessories and changing fashions

The discussion of the jewellery grave tradition showed that although Germania Magna and Secunda shared many styles of dress accessories, a detailed typological differentiation has led to the recognition of some brooch and hairpin types that may have been produced in the provinces or outside the Empire. Böhme has also suggested that many of the Late Roman Germanic brooches and hairpins found in Gaul had 'older' forms circulating in Germania Magna,[271] suggesting a clear chronological north-south movement of material culture that may be further examined. Besides pure geographic distribution, find context can also be considered more fully. Some objects may have had a specific site-type profile or social distribution: occuring in some types of sites, but not in others.[272] The focus has often been on the burial evidence as these are a clear artefact trap but finds from settlements and other contexts are increasingly numerous.

To reframe Germanic-style material in the study area, I have elected to take a longer-term perspective and study a number of brooches and hairpins dating from the late 3rd to the 5th century, choosing those types which have

[258] Whittaker 1994.
[259] Miller 1996, 169.
[260] Miller 1996, 163.
[261] Cf. Pitts and Versluys 2015b on this term.
[262] E.g., Rijswijk; Bloemers 1978; Vos and Lanzing 2000.
[263] Dutch river area; Kodde 2014; Van Renswoude and Boreel 2014.
[264] E.g., Alphen-Ekeren type houses; Van Hoof 2007, 256-259; Van Enckevort and Hendriks 2014, 240.
[265] Van den Broeke 2012.
[266] Heeren and Van der Feijst 2017.
[267] Pitts and Versluys 2015b; Van Alten 2017.
[268] Goffart 2010, 75-76.
[269] Goffart 2010, 88.
[270] Van Ossel and Ouzoulias 2001, 238.
[271] Böhme 2009, 39-40.
[272] Swift 2010, 239; Eckardt 2005, 142-149.

well-established typologies and that are common in the study area. This *longue durée* presentation will allow the mapping of material culture styles and highlight periods or regions of brooch and hairpin diffusion, innovation or adoption. Combining the stylistic developments of all these objects throughout the Late Roman period, the case will be argued in chapter 3 that these changes in Late Roman material culture may be less indicative of Germanic identities and more of the formation of a unique, Late Roman regional style of dress accessory that incorporated Germanic-style elements. Again, studying brooch developments on both sides of the frontier is critical in establishing the social and cultural environment in which these brooches existed. To bridge the gap between the 4th and 5th centuries, a series of closely datable brooches and hairpins were selected that appeared in sufficient numbers in the study area. Some of these date to the 4th or 5th century exclusively, others circulated in both centuries.

Production organisation of military dress accessories

Finally, the literature review indicated the research potential of analysing the chemical composition of copper-alloy dress accessories alongside typological and stylistic descriptions as well as in-depth analysis of regional distributions and depositional patterns. Most of the objects, tools and weapons associated with 'Germanic' burial contexts are not inherently military or Germanic in nature,[273] limiting the potential of mapping them outside of a limited number of contexts.[274] Several are also not closely datable on typology alone, excluding much of the settlement and stray finds. The focus was therefore placed on personal dress accessories with well-defined chrono-typologies, namely crossbow brooches and military belt sets. [275] These have been strongly correlated to military identities and are therefore suitable as a proxy for studying the development of the Late Roman Rhine frontier over time.[276]

Late Roman *Kerbschnitt* belts have in the past been associated with Germanic identities,[277] sometimes linked to the barbarisation of the Late Roman army,[278] despite some *Kerbschnitt* schemes featuring classical motifs that do not occur outside of the Empire.[279] They are more generally thought to have been worn by Roman government officials, and soldiers within the army, be they Roman or Germanic.[280] The presence of military belts outside of the Empire has been interpreted as Germanic men returning home after service in the Roman army.[281] While *foederati* have sometimes been portrayed as independent bands of mercenaries only kept loyal through gold payments,[282] their use of recognisable military insignia in the form of belts may be an indication of a more embedded position within the Roman military apparatus. Belt sets are common in graves, but also in other contexts, in both the 4th and 5th centuries. This chronological longevity allows us to study the military and ethnic connotations of belt sets in the study area. Some have already used the distribution of different buckle styles or belt sets to discuss changes in frontier policy and defence[283] and this may be expanded upon with the inclusion of more recent finds, especially those from settlement contexts and by exploring their distribution in Germania Magna.

The macro-political developments around the organisation of the Late Roman Lower Rhine frontier may be connected to Böhme's original observations that some 4th-century belts were centrally produced, while later material showed more indicators of localised production,[284] an interesting pattern considering the recent dating of the *foederati* in the study area around the turn of the 5th century.[285] Böhme's later proposal that production may even have moved out of the Empire is also worth exploring further,[286] as is Elton's suggestion that soldiers on the Late Roman frontiers were partially supplied in a centralised fashion, but also collected supplies themselves.[287] Working from

[273] Cf. Allason-Jones 1999, 1.

[274] Of the tools and weapons, *spathae* would make the most sense to include, but these are so rare that they provide only limited opportunities to add new perspectives. Also, a much broader study into weapon burials in Europe is currently ongoing (Hamm in prep.).

[275] A further selection criterion for the dress accessories was whether they occurred in significant numbers within Germania Secunda. This excluded the composite crossbow or bow-knob brooch (*Bügelknopffibel*), which although included in Böhme's 1974 inventory is only very rarely found in Germania Secunda and its distribution in Germania Magna also falls largely outside of the chosen study region. Their main distribution area lies between the Upper Rhine and Upper Danube, East Germany and the Czech Republic between the Elbe and Oder rivers. The handful of finds recorded in southwest Germany and the Netherlands may be seen as outliers on the edge of this main distribution region (Bemman 2008). They are generally seen as Germanic imitations of the proper crossbow brooch and circulated from the second half of the 4th century to the early 6th century (Heeren and Van der Feijst 2017, 194; Schulze-Dorlamm 1986b, 630; see also Voß 1998).

[276] This period saw great political changes affecting the region, with general Stilicho withdrawing troops in AD 402 to fight in the civil war (Kulikowski 2000, 326; Roymans 2017, 66; Schwarcz 1995, 295; Claudianus, *De Bello Gothico* 429-432). The standing army is assumed to have been replaced in the following years by Germanic *foederati* (Roymans 2017; Heeren 2017; Southern and Dixon 2009), but the impact of these historical developments on how the frontier and its garrisons was maintained as well as the size and organisation of these new border forces long remained underexplored.

[277] Cf. Elton 1996a, 129; Hoss 2012, 40.

[278] See for criticism Halsall 2000, 174.

[279] Bishop and Coulston 2006, 223; Hoss 2012, 40.

[280] Bishop and Coulston 2006, 224; Swift 2000a, 2; Sommer 1984, 87-101; James 2004, 251. Buckles with animal-headed terminals, which are common in the Western provinces, may have originated in Iran and the Roman East (James 2004, 251).

[281] Böhme 1974, 204-205; Halsall 2014, 525.

[282] See discussion in Roymans 2017.

[283] Swift 2000a, 199-204.

[284] Böhme 1974, 97; Böhme 2021, 135.

[285] Heeren 2017, 164; Roymans 2017, 62; Heeren and Roymans 2021, 145-148.

[286] Böhme 2021, 137.

[287] Elton 1997, 47.

the hypothesis that the military organisation was at least partially separate from local civilian workshops, we may also ask whether objects with a different social label (related to the wearer) also show consistent differences in chemical composition (related to the producer). This could focus on whether particular objects show a preferred alloy or mix (either related to look or function) and whether particular trace element signals show up consistently in either group, which could indicate a different supply line of material.

Swift has shown how combining stylistic analysis with alloy composition of dress accessories can successfully identify non-local material and relations with manufacturing groups.[288] Archaeometric analyses including dimensional measurements to tackle production standardisation and metallurgical composition to map technology and metal use have successfully added to our understanding of contemporary crossbow brooches[289] and a similar approach to belt sets may be insightful. Although a great number of metallurgical studies of Roman dress accessories are available, some of which include Late Roman material, no large-scale supra-regional dataset of Late Roman military dress accessories has yet been collected. Swift has observed that dress accessories associated with the military may have been produced to different standards and under a certain amount of control compared to civilian items[290] and that these may be identifiable in the archaeological record.

Standardisation of material culture and how it relates to production organisation and craft specialisation have long been studied by archaeologists keen to understand past economies.[291] The degree to which certain material culture categories appear to be standardised can be taken as a reflection of the size and scale of the production and the degree to which craft activity was specialised.[292] This includes understanding the role in society of domestic/part-time or specialised/full-time production, specifically the notion that the fewer people working in a workshop, the less specialised they could be, being responsible for multiple sections of the *chaîne opératoire*. In larger workshops with a higher production turnout, craftspeople were more likely to be able to specialise in one particular aspect of the manufacturing process, introducing a level of standardisation into the process. An assessment of specialisation and production intensity can include looking at material composition, manufacturing techniques, forms, dimensions and surface decoration.[293] Low variability in any of these categories may be assumed to reflect a 'high number of hands' involved in the production sequence.[294]

The term workshop also needs further defining in this context. Very little archaeological evidence is available on actual Late Roman state workshops or on where different parts of the *chaîne opératoire* took place. Activities such as primary metal smelting, primary alloying, scrapping and recycling may have happened in different production centres or workshops than casting, finishing, decorating and repairing. A study of the standardisation of dimensions and the chemical composition of Late Roman military belts has the potential to unveil much about the first part of the *chaîne opératoire*, while a detailed analysis of decoration and typology may reveal more about the organisation of the latter half of the production stages.

Based on previous studies, some expected outcomes of the metallurgical experiment may also be outlined. The closest, geographically speaking, comparative available dataset consists of invasive EDX readings taken from military belt fittings from the Late Roman cemetery at Linz, Austria.[295] Much of the material found there appears to be best characterised as a highly mixed, quaternary alloy (containing zinc, tin and lead).[296] Mixed alloys tend to be associated with higher rates of recycling.[297] This means that for Late Roman material, rates of recycling need to be taken into account and the extent to which smiths were even able to choose specific materials for specific purposes.

Any patterns that this thesis may find in military dress accessories, therefore, need to be embedded in a wider discussion of copper alloy use in the Late Roman period. For this purpose, a literature review was carried out of chemical studies into copper alloys from the 1st-3rd centuries AD to investigate how Late Roman alloys may have differed. Although the focus of the dataset lay firmly on the military belt fittings, a smaller comparative dataset of contemporary civilian-associated dress accessories (brooches and hairpins) was also gathered to allow further comparing and contrasting of metallurgical developments between 4th- and 5th-century material. This gave more certainty to any interpretations of chronological patterns: is the composition of 5th-century material different from earlier material because of a marked shift in production organisation, or is this development reflective of wider changes in metal use?

Broad developments in alloy use and metallurgy are best studied using large datasets which encompass multiple

[288] Swift 2010, 239; cf. Swift 2000a 81-88.
[289] Bayley 1998; Bayley and Butcher 2004; Van Thienen and Lycke 2017.
[290] Swift 2000a, 2.
[291] Longacre 1999.
[292] Roux 2003, 768.
[293] Roux 2003, 768.
[294] Costin and Hagstrum 1995, 622.
[295] Presslinger and Gruber 1999.
[296] Presslinger and Gruber 1999, tables 1 and 2.
[297] Pollard *et al.* 2015, 703.

variables, such as typo-chronology and geography.[298] Because of the need for a large number of objects, the choice was made to use non-invasive surface pXRF, a technique that allowed a large amount of high quality data to be gathered without the need to take destructive samples. Locations on the object surface of decorative treatments such as tinning or gilding may also inform about metallurgical technology. These data can then be correlated to other archaeological information, namely typology, social connotations and regionality. A more in-depth discussion about this technique and its suitability to archaeological metals is presented in chapter 5.

Research objectives and structure

This book addresses four main research objectives, each of which were split out in several specific research questions.

Objective 1. Bridge the gap between the 4th and 5th centuries in the migration debate, focusing especially on the rural settlement landscape

A great deal of high-quality archaeological data on rural settlements in the Late Roman provinces has been made available in recent years. Yet still, these are often interpreted in a highly ethnicised perspective (Germanic migration-related settlements) and dated to a narrow time frame (late 4th-early 5th century). Two research questions were formulated to dissect and reinterpret the data:

1. How do specific aspects of the settlement landscapes (architecture, diet) develop in Germania Secunda and Germania Magna alongside each other and what role did they play in the development of the Late Roman rural settlement landscape in Germania Secunda?

2. How do the 'migration-related settlements' compare to each other in terms of (dis)similarity of the archaeological evidence?

Potential indications of non-Roman inhabitants of rural settlements in Germania Secunda are analysed in chapter 2. This chapter aims to study the variety of settlements and their features, place these in a chronological framework that straddles both the 4th and 5th centuries and provide an in-depth comparison with contemporary settlements and Germania Magna to allow long-term interactive processes including exchange and mobility tobe considered. Features that will be discussed are changes in architecture (house plans and sunken feature buildings), changes in diet (cultivation of rye) and changes in material culture (Germanic-style handmade pottery).

[298] Pollard and Heron 2008.

Objective 2. explore whether differences in material culture can be attributed to migration or wider developments

Research objective 1 will be tackled in chapter 3, through two specific research questions:

3. How can we trace the typological development of dress accessories typically associated with Germanic women (brooches; hairpins) in the study are from the late 3rd to the 5th century?

4. Can the spatial distribution and depositional patterns of these objects challenge the various identity labels traditionally attached to them (including 'Germanic' and 'female') and inform us about the adoption and adaptation of dress accessories in a Germanic style in the study area?

Chapter 3 involves a typological overview and spatial analysis of the most commonly found 'Germanic' dress accessories. This includes an assessment of their social or cultural connotations based on their distribution and find contexts as well as dating discrepancies between Germania Magna and Germania Secunda from the late 3rd to 5th century. This longue durée presentation will allow the mapping of movement in material culture styles and highlight periods or regions of brooch and hairpin innovation or adoption. Combining the stylistic developments of all these objects throughout the Late Roman period, the case will be argued that these changes in Late Roman material culture may be less indicative of Germanic identities and more of the formation of a unique, Late Roman regional style of dress accessory that incorporated Germanic-style elements.

For the late 3rd and 4th centuries, footless Armbrust brooches with high catch-plate and Fécamp hairpins were selected. The 4th/5th-century transition is covered by simple and elaborate Armbrust brooches and tutulus brooches while the 5th century is represented by Wijster hairpins and supporting-arm brooches. The discussion of each of these will include their chronology, regional distribution, depositional patterns, decorative styles and social connotations.

Objective 3. Bridge the gap between the 4th and 5th centuries in terms of frontier policy and the relationship between the Roman state and Germanic foederati

This objective targets the workings of the Lower Germanic frontier in the Late Roman period in terms of frontier defense and personnel and was approached through two research questions:

5. Can the spatial distribution and depositional patterns of Late Roman military- associated dress accessories

(crossbow brooches; military belt sets) inform us about the organisation of the Late Roman Lower Germanic frontier, specifically regarding the role of Germanic foederati?

6. Can changes in form, style and decoration inform us about the organisation of production of Late Roman military belt sets?

For this objective, a detailed description of the various items associated with the Late Roman military belt is given in chapter 4, including presenting regional circulation dates for specific types of belt parts in Germania Secunda. Secondly, the distribution of different types of belt accoutrements and contemporary crossbow brooches will be used to draw a social history of the Lower Rhine frontier and its military fortifications. This also includes a discussion on the distribution of Late Roman military belt fittings in Germania Magna, which traditionally are seen as reflective of returning veterans.

Included are all main identifiable parts of the Late Roman belt: buckles, strap ends, belt plates, belt stiffeners, tubular mounts and suspension mounts. Following the structure of chapter 3 on civilian dress accessories, chronology, regional distribution, depositional patterns, decorative styles and social connotations will the addressed.

Objective 4. Characterise production environments for Late Roman copper-alloy dress accessories

It has been suggested that while some 4th-century belts may have been produced in the state-run fabricae or provincial workshops, 5th-century belts were increasingly produced locally or even outside of the Empire (Böhme 1974, 97; ibid. 2021, 137).

This question was targeted in two research questions:

7. Can a study of object dimensions and chemical composition of Late Roman dress accessories identify a significant difference in production organisation between objects associated with civilian identities and those associated with military identities?

8. Can a study of object dimensions and chemical composition of Late Roman military dress accessories identify significant differences related to production organisation between objects dated to the 4th and 5th centuries in correlation to perceived changes in frontier defence?

An experiment was designed using object dimensions and chemical composition (using non-invasive pXRF and dimensional measurements) to reconstruct aspects of the production organisation of Late Roman military dress accessories. Chapters 6 and 7 aim to identify any potential shifts in technology and metallurgy that may inform us about the nature of military and state-run production organisation.