Chapter One
Bead Distributions in Northern Gaul

1. Introduction

As was stated in the introduction to this dissertation, beads are a very common find in early medieval cemeteries in northwestern Europe dating to the fifth, sixth and seventh centuries. Many researchers say beads were mass produced and easily available to many people. [40] In the past few decades research has shown that beads found in these graves were not just of local production, but were rather imported from a variety of places both closer to home and further away. [41] In the introduction it was also argued that their omnipresence and their variety in provenances makes beads from early medieval graves especially suited to answer one of the main questions posed by the ERC Rural Riches project: *What networks did the rural population of early medieval Northern Gaul take part in?* In this chapter it will first be established whether beads were omnipresent during the Merovingian period and thus whether the study of beads can in fact contribute to our understanding of the networks the rural population of Northern Gaul took part in during this period. This will be followed by several case studies of bead distributions in the research area with specific provenances and/or can be dated to a specific period to get a more nuanced 'grip' on the bead-networks active in early medieval Northern Gaul.

2. Method

2.1 Data source and representation

The data presented in this chapter were all collected in the Rural Riches database and can be accessed per site online at www.earlymedievaleurope.org. Per data category a manual was created that gives insight into the way the data were collected and referenced. These manuals can be found on the same website and will not be repeated here. For this chapter, the following data were extracted from the database:

- Locations of cemeteries
- Locations of settlements
- Date of cemeteries
- Date of settlements
- Size of cemeteries (number of excavated graves)
- Presence of beads per site (presence, absence or unknown)

[40] for example, Koch 1977; Siegmund 1998.
[41] Pion 2014; Pion/Gratuze 2016; Greiff/Nallbani 2008; Volkmann/Theune 2001; also see later chapters in this volume.

- Number of beads found per site (exact amount, 'present but unknown amount of beads', or no beads)
- Number of graves the beads were found in per cemetery.
- Amount of specific bead types found per site (exact amount, 'present but unknown amount' or no beads). For the specific bead types, see fig.1.1. [42]
- Number of graves the specific bead types were found in per cemetery.

The collected data will be represented as distribution maps in appendix 1. These will not just be simple presence/absence maps, but weighted distribution maps that represent data as amounts or percentages (for a more detailed explanation, see below). The maps were made using the program QGis, that was linked to the database. The base map on which the distributions are plotted was especially created for the ERC Rural Riches project by Roeland Emaus. It is essentially a simplified map of the environment using various soil characteristics and heights of the research area, on which rivers and Roman roads are also indicated. As he has explained the creation of this map elsewhere, it will not be further elaborated upon here. [43]

Fig. 1.1 Specific bead types and their date that were counted for each site in the ERC Rural Riches database. P1: 470-530. P2: 520-570. P3: 560-610. P4: 600-640 . P5: 620-670. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

[42] Each bead type was selected due to their specific date and/or their specific place of provenance. These will be further elaborated upon in their respective paragraphs below.
[43] Emaus in press.

2.2 A note on the provenance of Merovingian beads

Merovingian beads were produced using a variety of techniques; most glass beads were either drawn or wound, but folded, perforated and mosaic beads occur regularly as well. Beads of other materials than glass, such as amber, amethyst, or rock crystal were shaped by cutting or knapping techniques before being polished (fig. 1.2). Winding beads seems to have been a European phenomenon, whereas other forming techniques were used in the Mediterranean, Egypt, the Syro-Palestinian Coast, Mesopotamia and India (table 1.1). [44] For drawn beads, the manner in which drawn tubes were cut into beads and their size can reveal more specific information about where they were produced. For example, evidence for the production of drawn beads with so-called strangled or constricted ends during the sixth century was excavated in Kom-el-Dikka, Egypt. [45] The chemical composition of other drawn bead-types with strangled ends suggests that they may have been produced along the Syro-Palestinian Coast as well. [46] Chemical analyses of beads with a diameter under 2.5 millimetres and cold-cut ends that were rounded-off with a 'hot finish' (so-called *Indo-Pacific tradewind beads*) have demonstrated that these were made with high-alumina glass, which matches the evidence for several bead-making workshops excavated in southern India and Sri Lanka. [47] Similarly made beads (whether having received a 'hot finish' or not) with a larger diameter have a chemical composition (made with plant-ash glass) that reflects production in Mesopotamia. [48] That leaves drawn beads with warm-cut edges, for which an origin in Egypt and/or the Syro-Palestinian Coast has been suggested. [49] Fig. 1.3 depicts these four different edge-types of drawn beads.

Fig. 1.2 Examples of beads from the cemetery Lent-Lentseveld made with various production techniques. A: drawn bead with lines parallel to the perforation; B: wound bead with concentric lines around the perforation; C: folded bead with visible seam; D: perforated bead with one irregular side; E: mosaic bead formed by various slices of mosaic glass; F: amber bead with cut and polished faces. Photo's: M.B. Langbroek.

[44] For a detailed discussion on bead techniques and their provenances, see Pion 2014, 178-229 and references therein.
[45] Greiff/Nallbani 2008; Spaer 1993; Rodziewicz 1984.
[46] Pion 2014, 198-200.
[47] Pion/Gratuze 2016.
[48] Pion 2014, 215-219.
[49] Pion 2014, 219-222; see also Langbroek *et al.* 2022 (also printed as chapter four, this volume).

Table 1.1 Bead making techniques and their provenances (based on Pion 2014).

Technique	Type group	Provenance
Drawn Beads	A	India/Mesopotamia/Egypt/Syro-Palestinian coast
Wound Beads	B	Europe (mostly)
Folded Beads	C	Egypt/Syro-Palestinian coast
Perforated Beads	D	Mesopotamia/Egypt/Syro-Palestinian coast
Mosaic Beads	E	Egypt
Beads from other materials	F	Various Provenances
Prehistoric or Roman beads	G	Various Provenances

Fig. 1.3 Examples of drawn beads made with the four different finishing techniques. Photo's: M.B. Langbroek.

2.3 How to lie with maps: problems and pitfalls of distribution maps as a research tool

Hodder and Orton have argued that the creation and interpretation of distribution maps is very subjective and varies per beholder. [50] The main lesson to learn from their criticism on distribution maps is that distribution maps are already interpretations of data and do not represent objective data as has quite often been assumed. [51] Anybody who has ever created a distribution map is aware of the possible dilemmas that appear during the creation of maps: the quality of the available data set, the quality of the base map, the chosen symbols of representation, their size, etc. It has even been argued that distribution maps may in fact be unusable; they are based on an incomplete dataset taken from selective excavations that are often badly dated and thus may not be fit to study past economies. [52] Lastly, mapping distributions is a quantitative method which is highly influenced by the presence and exactness of excavation and documentation. [53] In other words, the archaeological record itself is not complete, nor has each region in this study been excavated with the same intensity, nor has every bead that has been excavated been properly reported, nor have we been able to access every single publication with Merovingian beads. The distribution maps in this chapter do not represent all beads present in northern Gaul during the Merovingian period: they are literally a sample from a sample from a sample. At the time of writing the ERC Rural Riches team is preparing an article in which the strengths and weaknesses of the collected data will be discussed. [54] They will therefore not be elaborated upon further here.

[50] Hodder/Orton 1976, 29.
[51] cf. Dierkens/Périn 2005, 30.
[52] Dierkens/Perin 2005, 33-4.
[53] Hodder/ Orton 1976, 17-20; Renfrew 1975, 41.
[54] Theuws *et al.* in prep.

Furthermore, the distribution maps presented in this chapter do not represent a situation at a single point in time, but rather a series of events over a longer period of time. [55] This has formerly been referred to as 'the palimpsest of activities' that make up the archaeological record. [56] It is important to be aware of the fact that the period of time between production and deposition of beads cannot easily be discerned. A single bead may have passed many hands between its source and final deposition, may have been a commodity at first, only to become a gift, part of a dowry, part of an inheritance, and possibly in the end, part of a grave assemblage.

As the beads that are mapped in this chapter were mainly found in Merovingian graves, the distribution maps will reflect beads in the burial ritual mostly. The burial of goods with the dead may be deliberate but does not necessarily give a representative inventory of the full range of the dead person's or the family's possessions, if they are in fact reflecting possessions at all. Moreover, grave goods may not reflect the range of material culture available, as the particularities of the burial ritual may lead to specific choices concerning what could and could not be deposited in a grave: the archaeological record is not a direct measure of frequency of use or availability of the mapped object among the living. The distribution maps created will thus show the spread of the use of beads in burial customs rather than the actual spread of beads, as a cemetery may be an unrepresentative reflector of a community's economy, social structure and life-style. [57]

Despite all the above, distribution maps are still one of the best research tools to analyse and represent spatial distributions of specific types of material culture especially when, as is the case with beads, they are found in great numbers almost everywhere. The distributions presented in this chapter will not be affected much by a few extra documented beads. However, this chapter does aim to go beyond simple dots on maps: it aims to create weighted maps that represent the collected data as amounts of beads, percentages of the total amount of beads, or percentages of graves. It also aims to distinguish between beads found in cemeteries or settlements and focus on the differences between bead distributions in the sixth and seventh century. By expressing the same distributions in these different ways it intends to reflect on the collected data from different angles in a transparent manner. At the end of this chapter an assessment will be provided of how and to what extent the problems mentioned here weaken the conclusions in this and the following chapters that are based in distribution maps.

2.4 Chapter Structure

This chapter is structured from the very general towards the very specific: it will start with creating an overview of where we know people lived and were buried in northern Gaul throughout the sixth and seventh centuries. This will serve as a background against which bead distributions can be contrasted. The next section will concern the general bead distribution in the research area, will differentiate between beads found in cemeteries and settlements, and between beads found on sites dating to the sixth and seventh century respectively. This way, a basic understanding of bead distributions in sixth and seventh century northern Gaul will be established. Thereafter several case studies are presented that concern the specific bead-types collected in the database. It will start with an in-depth analyses of the distribution of amber beads throughout the sixth and seventh century. Then the other case study bead types will be discussed per bead period, as indicated in Fig. 1.1.

[55] Hodder/Orton 1976, 18-9, 238.
[56] Renfrew 1975, 40; Stjernquist 1976, 18.
[57] cf. James 1988, 24 and 28.

3. Signs of People

The distribution maps of cemeteries and settlements dating to the Merovingian period in Northern Gaul can be found in Appendix 1.1 'Signs of People'.

3.1 Cemeteries

The database, at the time of creating the maps, contained information on 3989 cemeteries in the research area (Appendix 1.1 fig. 1.1.1.1). They occur throughout Northern Gaul, but not so much in the areas with peat soils that cover a large part of the western Netherlands, nor in the elevated areas such as can be found in the east of Belgium and the west of Germany (Westerwald, Eiffel, Ardennes, Hunsrück). For 2833 cemeteries, no more specific date other than 'Merovingian' could be established (Appendix 1.1 fig. 1.1.1.2). These are mostly located in the southern half of the research area, where most cemeteries were discovered over a century ago and usually documented quite poorly, although cemeteries of which very little information is available occur throughout the research area. [58] The dating evidence of the remaining cemeteries demonstrates a development from relatively few and dispersed cemeteries that are located near major rivers or roads in the ongoing fifth century, [59] that increase in numbers but are still located near rivers and roads during the sixth century, towards an even larger increase in the number of cemeteries that are located both along roads and rivers but also in more remote hinterland areas during the seventh century (Appendix 1.1 figs. 1.1.1.3 to 1.1.1.8) (Table 1.1 and fig. 1.2). The number of cemeteries declines a little during the second half of the seventh century: this may not reflect a demographic trend, but rather the abandonment of cemeteries that had been in use since the late fifth or early sixth centuries and the creation of cemeteries that we do not classify as Merovingian, as people were no longer buried with grave goods. The same pattern can be observed in the distributions of cemeteries with a start date before and after the year 600 (Appendix 1.1 figs. 1.1.1.9 to 1.1.1.10). In total, 859 cemeteries have a start date before the year 600 and 552 cemeteries in or after 600. That seems to contrast with the trend observed in Appendix 1.1 Figs. 1.1.1.3-1.1.1.8 but can be explained by the fact that a lot of cemeteries established before the year 600 were still being used during the seventh century. This is supported by the fact that only 108 cemeteries date exclusively to the sixth century (cut off points start date in or after 480 and end date in or before 620), and many more, namely 409 cemeteries, date exclusively to the seventh (cut off points start date in or after 580 and end date in or before 720 [60]). This pattern suggests that northern Gaul, which had been left (mostly) deserted in the mid fifth century, became repopulated between the mid-fifth and seventh century, by people migrating into the area from other parts of Europe. [61] This process is also reflected by the isotope analyses of 120 individuals dating between the late fourth and seventh century AD from seventeen cemeteries in present-day the Netherlands: 100 percent of the samples were not born locally in the fifth century AD, 53 percent in the sixth, and 34 percent in the seventh century AD. [62]

For 1701 cemeteries, no specific number of documented human graves could be recorded (Appendix 1.1 fig. 1.1.1.11). Again, most of them are located in the southern half of the research area,

[58] Data from www.earlymedievaleurope.org.
[59] The map with cemeteries dating to the first half of the fifth century is certainly incomplete for these were not recorded systematically. The (flexibly used) starting date for collecting sites was 450 CE.
[60] In the remainder of this chapter, these cut off points will be stated shorter as '580-720'. The first date refers to the start date in or after said date, and the second date refers to the end date in or before said date.
[61] Theuws *et al.* 2020; Theuws 2024,1.
[62] Kootker/Heeren 2022.

where most cemeteries were discovered over a century ago and usually documented quite poorly. [63] Data on the number of excavated graves was present for 2288 cemeteries, of which 1317 contain five human graves or more (Appendix 1.1 figs. 1.1.1.12. and 1.1.1.13). This last distribution is of interest to the bead distributions that will be presented later in this chapter, as these are the sites on which one would expect to find beads, if they were indeed omnipresent in Merovingian society. When these are once again divided into those sites that started before or after the year 600 (Appendix 1 figs. 1.1.1.14. and 1.1.1.15), it becomes clear that cemeteries that were established before the year 600 are generally much larger than those that started in or after the year 600, with 109 vs 21 graves on average, or 139 vs 38 graves on average when those cemeteries with fewer than five graves are left out. This huge discrepancy can again be explained by the fact that most cemeteries that were already established before the year 600 continued to be used in the seventh century, and that started in or after the year 600 were used for a much shorter period. When the size of cemeteries that date exclusively to the sixth or the seventh century is considered, the average amount of human graves are much more alike: Cemeteries of five or more graves that date exclusively to the sixth century (cut off points 480-620) contain 27 excavated graves on average (based on 35 cemeteries), and cemeteries of five or more graves that date exclusively in the seventh century (cutoff points 580-720) contain 34 graves on average (based on 156 cemeteries). This may indicate that relatively equal amounts of people were buried per cemetery in the sixth and seventh century, yet that a lot more cemeteries were in use during the seventh century. Taking all the above into consideration, it seems there was a steady population growth in Northern Gaul from the fifth century onwards, which was probably kick-started by people migrating into the area from other parts of Europe during the fifth and sixth century. [64]

3.2 Settlements

The database, at the time of creating the maps, contained information on 1071 settlements (Appendix 1.1 fig. 1.1.2.1). Most of these are rural settlements, but other categories such as cities, hillforts, churches and production sites are also included. Just as was observed for cemeteries, they occur throughout Northern Gaul, but not so much in the areas with peat soils that cover a large part of the western Netherlands, nor in the elevated areas such as can be found in the east of Belgium and the west of Germany. [65] For 362 settlements, no more specific date other than 'Merovingian' could be established (Appendix 1.1 fig. 1.1.2.2). These are spread quite equally over the research area, which may be explained by the fact that even when very little evidence for settlement was found, for example just a few features and some pottery sherds, the site was still classified as a settlement. The dating evidence of the remaining settlements demonstrates a similar development as was established for cemeteries: a development from relatively few and dispersed settlements that are located near major rivers or roads in the ongoing fifth century, that increase in numbers but are still located near rivers and roads during the sixth century, towards an even larger increase in amount of settlements that are located both along roads and rivers but also in more remote hinterland areas during the seventh century (Appendix 1.1 figs. 1.1.2.3 to 1.1.2.8) (Table 1.2 and fig. 1.4). The distributions of settlements throughout the Merovingian period seem to confirm what was already noticed above: a steady population growth in Northern Gaul from the fifth century onwards.

[63] data from www.earlymedievaleurope.org.
[64] Theuws *et al.* 2020; Theuws 2024,1; Kootker/Heeren 2022.
[65] cf. Emaus in press.

Table 1.2 Number of cemeteries and settlements in use between 400 and 700 CE. 5A = first half fifth century CE, 5B = second half fifth century, etcetera. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

Century	Amount of Cemeteries	Amount of Settlements
5A	92	153
5B	226	206
6A	463	299
6B	780	330
7A	1091	393
7B	974	451

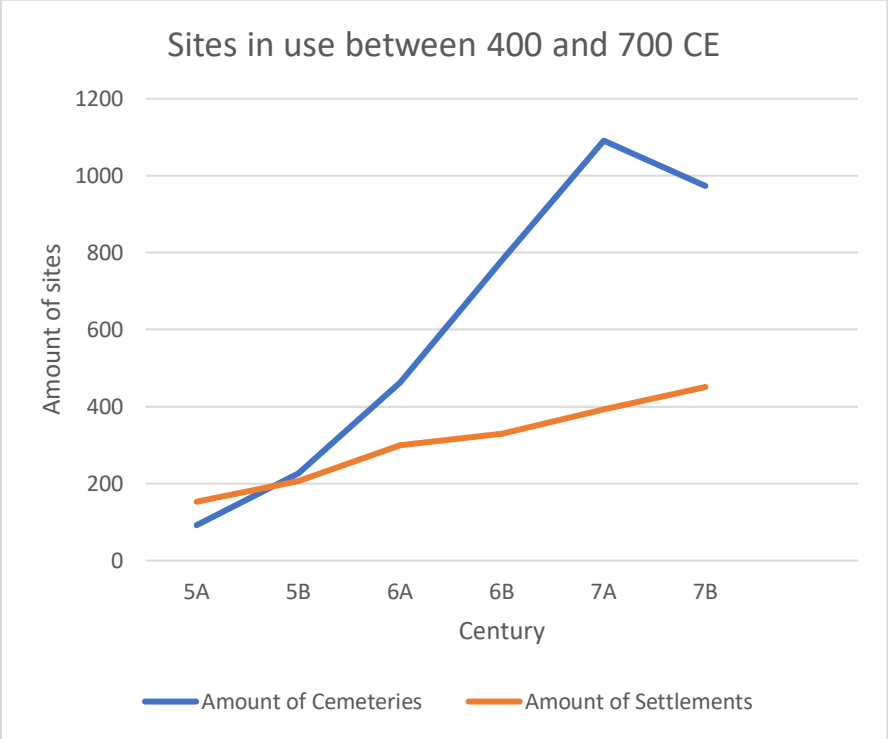

Fig. 1.4 Cemeteries and settlements in use between 400 and 700 CE. 5A = first half fifth century CE, 5B = second half fifth century, etcetera. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

4. Beads

The distribution maps of beads in Northern Gaul can be found in Appendix 1.2 'Beads'. In the paragraphs below the 'dry' data are provided first, after which they are discussed in paragraph 4.4.

4.1 General bead distribution

Beads were found on a total of 1303 sites dating to the Merovingian period in Northern Gaul (Appendix 1.2 fig. 1.2.1.1). They are spread quite evenly throughout the research area, although there seem to be some dense clusters along the Rhine River in Germany, where cemeteries cluster more than in the rest of the research area as well (Appendix 1.1 fig. 1.1.1.1). The number of sites of which it remains unknown whether beads were excavated is much larger: 1892 cemeteries, 300 settlements and 49 stray find sites were documented so poorly there is no telling whether beads were found (Appendix 1.2 fig. 1.2.1.2). Much like the cemeteries of unknown date (Appendix 1.1 fig. 1.1.1.2), most of these can be

found in the southern half of the research area. That leaves sites on which no beads were found: 932 cemeteries and 448 settlements (Appendix 1.2 fig. 1.2.1.3). Sites without beads occur throughout northern Gaul, but cluster in those areas where most cemeteries were excavated: along the Rhine River in Germany, the Moselle River and along the Belgian Meuse River. In total, 153.780 beads were documented in the database, 152.175 of which were excavated from 1192 cemeteries, 710 beads from 76 settlements and 895 beads from 34 stray find sites (Appendix 1.2 fig. 1.2.1.4). Of 552 cemeteries, 7 settlements and 11 stray find sites of these 'sites with beads' no exact number of beads were recorded: these were merely documented as 'present' in the database. Again, these 'present' sites are mostly located in the southern half of the research area, where most cemeteries were discovered over a century ago and consequently were often documented quite poorly. When the distribution map of cemeteries expressed as number of human graves and the distribution map of beads expressed as amounts of beads are put side by side, it becomes clear that both maps are very much alike (fig. 1.5). At first glance, it seems that wherever people were buried in Northern Gaul during the Merovingian period, at least some of them were buried with beads.

4.2 Beads from settlements

As was stated above, beads were found in 76 settlements: 710 beads from 69 settlements and 7 settlements for which we know that beads were 'present'. For 299 settlements it remains unknown whether beads were found and for 449 settlements it is certain that no beads were excavated (Appendix 1.2 figs. 1.2.2.1 to 1.2.2.3). In comparison to cemeteries, beads are found in much lower amounts in settlements. This may partly be related to the lack of sieving on most settlement excavations. Settlements where relatively large amounts of beads are found, such as Oegstgeest, Rijnsburg, Maastricht and Wijnaldum, all located in the Netherlands, have either been subject to a large-scale sieving campaign or are sites on which evidence for bead-production has been found. The distribution of beads from settlements clusters clearly exclusively in the Netherlands. This could be an artifact of the database, as the Rural Riches team is based in the Netherlands, which made Dutch settlement excavation reports more easily accessible than those from neighbouring countries. Still, in comparison to Belgium, Germany and France, early medieval settlement excavation seems to be more developed in the Netherlands (based on discussions within the Rural Riches team). Moreover, the state of publication is better (as it is in the Flemish part of Belgium) because according to Dutch heritage law it is obligatory to publish an extensive excavation report. Many sites in Germany and France are published less extensively. [66]

4.3 Beads from cemeteries

A total of 152.175 beads from cemeteries dating to the Merovingian period were recorded for the research area. These beads were excavated from 641 cemeteries: 237 beads per cemetery on average. For an additional 551 cemeteries it is known that beads were excavated, but not the exact amount (Appendix 1.2 fig. 1.2.3.1). For 1892 cemeteries, it remains unclear whether beads were excavated. These are mostly located in the southern half of the research area (Appendix 1.2 fig. 1.2.3.2). No beads were found in 932 cemeteries (Appendix 1.2 Fig. 1.2.3.3). In terms of distribution, cemeteries with and without beads are spread across Northern Gaul quite evenly.

[66] A disadvantage of Belgian dissertations is that they are in principle not publicly available.

Cemeteries without beads

Cemeteries without beads are quite small, as they contain 6 graves on average (Appendix 1.2 fig. 1.2.3.4). In contrast, cemeteries in which beads were found are much larger: 112 graves on average (Appendix 1.2 fig. 1.2.3.5). Taking this into consideration, if beads were in fact omnipresent amongst the population of Northern Gaul, one would thus expect to find them in a large percentage of the cemeteries of 5 graves or more.

Average amount of beads per cemetery

By far most beads registered in the database are buried in cemeteries with a start date before the year 600 (Appendix 1.2 fig. 1.2.3.6) In total 129.569 beads were found in 521 cemeteries that were established before the year 600. On average, these cemeteries contain 286 beads. In comparison, fewer beads were found in cemeteries with a start date in or after the year 600 (Appendix 1.2 fig. 1.2.3.7) In total 9606 beads were found in 184 cemeteries that were established in or after the year 600. On average, these cemeteries contain 79 beads. This contrast remains in place when the beads of cemeteries that date exclusively to the sixth century (cut off points 480-620), and the beads of cemeteries that date exclusively to the seventh century (cut off points 580-720) are compared: the former contain 175 beads on average (n = 34 cemeteries, 20 with exact amount of beads) and the latter 99 beads on average (n = 164 cemeteries, 111 with exact amount of beads).

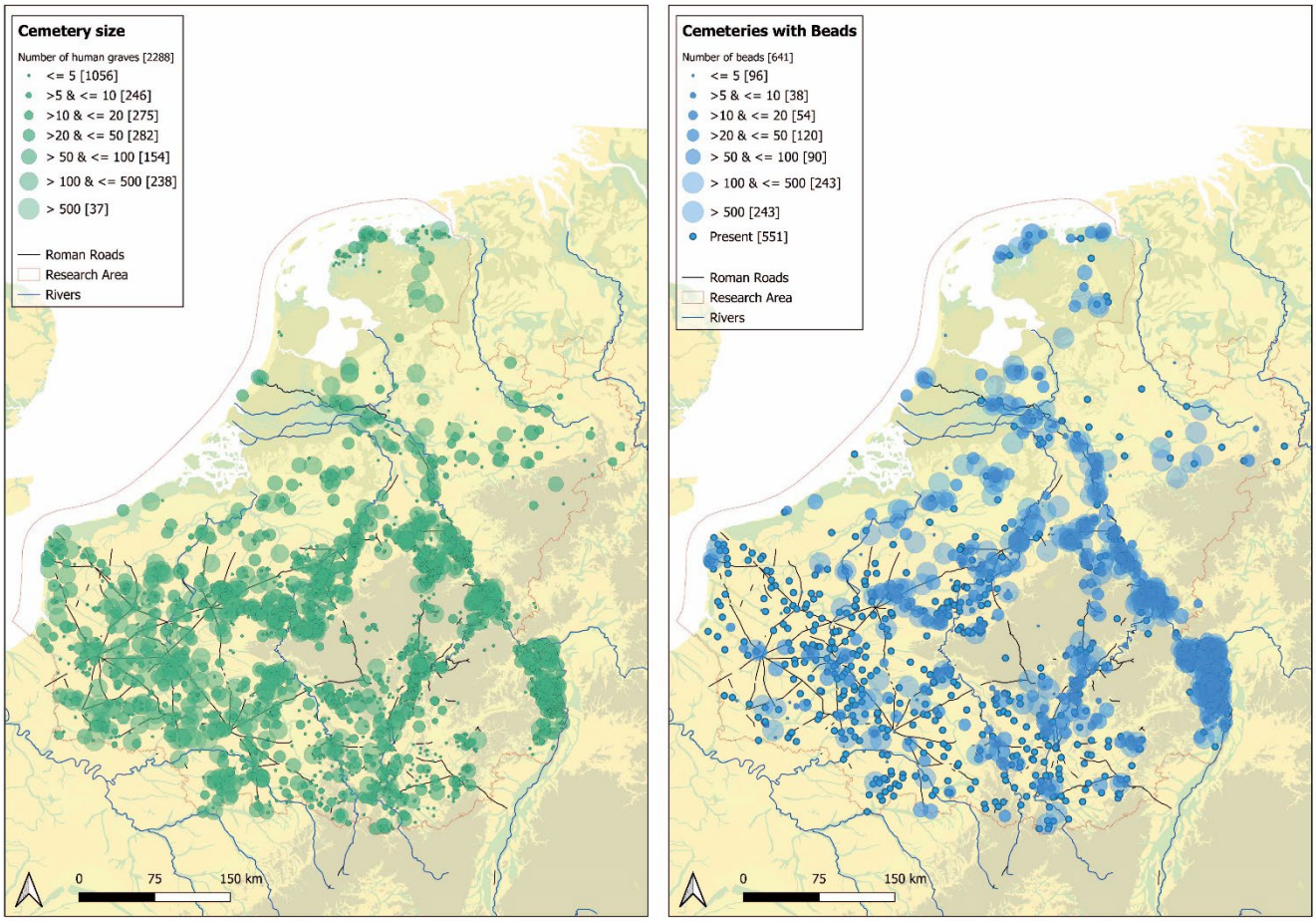

Fig. 1.5 Distribution map of cemeteries in Northern Gaul, expressed in numbers of human graves and the distribution map of beads from cemeteries expressed as amounts of beads. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

Percentage of cemeteries with beads

Beads were thus certainly found in 1192 out of 3989 cemeteries (30 percent). If the cemeteries of which it is unknown whether beads were found are not counted, it amounts to 56 percent. Counting only those cemeteries that contain five graves or more (total of 1316 cemeteries, 723 of which contain beads, 260 of which do not contain beads and 333 of which have no information on whether beads were found: see Appendix 1.2 fig. 1.2.3.8), the percentage of cemeteries with beads rises to 55 percent. If the cemeteries with five graves or more of which it is unknown whether beads were excavated or not are not counted, it amounts to 74 percent. Perhaps even more statistically relevant, when only those cemeteries that contain 10 graves or more are considered (total of 1044 cemeteries, 644 of which contain beads, 154 of which do not contain beads and 246 of which have no information on whether beads were found: see Appendix 1.2 fig. 1.2.3.9), the percentage of cemeteries with beads is 62 percent. If the unknown cemeteries are not counted, it rises to 81 percent of the cemeteries (fig. 1.6).

Were beads buried more often in cemeteries that started before or after the turn of the sixth to the seventh century? Overall, 859 cemeteries were assigned a start date before 600. In 507 of these beads were excavated, for 151 cemeteries we do not know whether beads were found, and in 201 cemeteries beads were definitely not found. This means that at least 61 percent of cemeteries with a start date before the year 600 contain beads. If the cemeteries of which it is unknown whether beads were excavated or not are not counted, it amounts to 72 percent. When only cemeteries with five graves or more are counted (544 cemeteries, of which 407 contain beads) this percentage rises to at least 75 percent. If the unknown cemeteries are not counted (68 cemeteries), it amounts to 86 percent. As was already observed above, this percentage rises again when only cemeteries of at least ten graves are considered (fig. 1.7). In total, 549 cemeteries were assigned a start date in or after 600. In 176 of these beads were excavated, for 116 cemeteries we do not know whether beads were found, and in 257 cemeteries beads were definitely not found. This means that at least 34 percent of cemeteries with a start date in or after the year 600 contain beads. If the unknown cemeteries are not counted, it amounts to 41 percent. When only cemeteries with five graves or more are counted (247 cemeteries, of which 122 contain beads) this percentage rises to at least 49 percent. If the unknown cemeteries are not counted (68 cemeteries), it amounts to 58 percent. As was already observed above, this percentage rises again when only cemeteries of at least 10 graves are considered (fig. 1.8).

Percentage of graves with beads

In Appendix 1.2 fig. 1.2.3.10 a distribution map of cemeteries with beads of which we know both the number of excavated graves and amount of graves with beads can be seen. In the southern- and northernmost parts of the research area, a much smaller part of the graves seems to have contained beads than along the large rivers (Rhine, Meuse Moselle) in the areas between the north and south of Northern Gaul. This image is strengthened in Appendix 1.2 fig. 1.2.3.11, in which the same data is presented as percentages and only cemeteries that contain ten graves or more are considered. On average, 14.6 percent of graves contain beads. Mirroring the trend already observed above, the percentage of graves with beads is higher in cemeteries that were established before the year 600 than in or after the year 600, with 16 percent versus 11 percent. If only those cemeteries that date exclusively to the sixth century (n= 14 cemeteries) or exclusively to the seventh century (n= 67 cemeteries) are considered (cut off points 480-620 and 580-720), this distinction increases, with 25 percent of the graves for the sixth century and 15 percent of the graves for the seventh century. Assuming about half of the persons buried were of the female gender, this would amount to 50 percent of the female population being buried with beads during the sixth century, and 30 percent during the

seventh century. Research by Femke Lippok based on 2289 graves dating between MA1 and MA3 (470/80 - 600/10) confirms the high percentage of graves in which beads were deposited for the sixth century: during this period jewellery was deposited in 33.81 percent of graves, and beads were deposited in about half of these (41 percent in MA1, 46 percent in MA2 and 51 percent in MA3). [67]

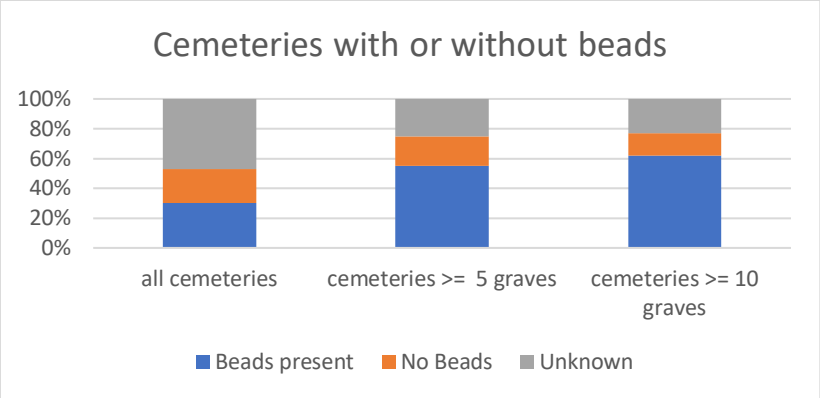

Fig. 1.6 Percentage of Merovingian cemeteries in Northern Gaul with or without beads. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

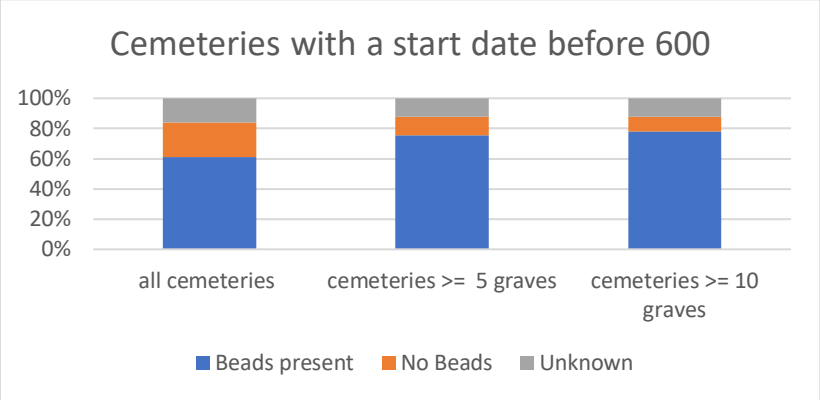

Fig. 1.7 Percentage of Merovingian cemeteries with a start date before the year 600 in Northern Gaul with or without beads. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

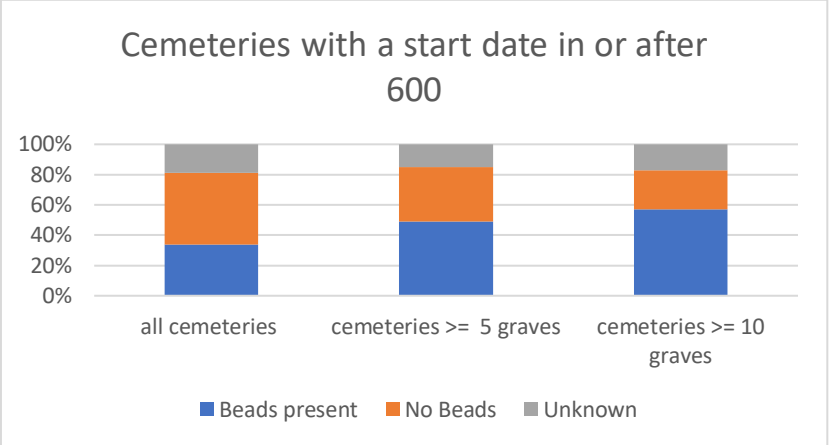

Fig. 1.8 Percentage of Merovingian cemeteries in or after the year 600 in Northern Gaul with or without beads. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

[67] Lippok 2025.

4.4 Were beads omnipresent in Merovingian Northern Gaul?

Considering all the above, were beads omnipresent in Merovingian Northern Gaul? In short, yes: beads are found in large numbers in a very high percentage of graves (and consequently, an even higher percentage of the graves of the female population), in a very high percentage of cemeteries, and were excavated even in the most remote regions of the research area. Those cemeteries with no or a low percentage of bead graves generally contain less than ten graves, which reduces the chance of grave goods significantly. That being said, beads are not often excavated from settlements. Also, beads were definitely more popular grave goods during the sixth than during the seventh century. The difference might be explained by the fact that during the seventh century the furnished burial rite slowly began to disappear, perhaps especially so in newly established cemeteries. This might thus not reflect a difference in the accessibility or availability of beads for the population of Northern Gaul, but rather a difference in burial tradition between users of cemeteries that were started before and after the year 600.

This has become especially clear for the most southwestern region of the research area: in northern France beads seem to have been found in significantly lower amounts and in fewer graves than in the rest of Northern Gaul. This can partly be explained by the excavation and documentation history of the region (see above), but not completely: even in well excavated and documented cemeteries in the region beads occur in lower numbers than in the rest of the research area and virtually disappear from cemeteries that were started after the year 600. This pattern is strengthened by the example of Cutry in Northern France, a cemetery that dates to both the sixth and the seventh century: beads dating to the sixth century occur in abundance, whereas beads dating to the seventh century are absent. [68] This distribution pattern is directly paralleled by the distribution of Merovingian glass vessels (that may very likely have been lamps rather than drinking vessels) in Northern Gaul [69] and completely contrasts with the distribution of Christian cult places. Marieke van Winkelhoff and Frans Theuws have suggested this contrast can be explained by a form of do-it-yourself Christianity and an accompanying burial ritual in which light may have played an important role in those regions that lacked a church-infrastructure. [70] The lack of beads in Merovingian cemeteries in northern France can thus not be explained by a lack of availability or accessibility of the material, but rather by a change towards fewer grave gifts in the burial rite that occurred earlier in this part of Northern Gaul than in the remainder of the research area.

5. Amber Beads

One of the most common bead types amongst Merovingian bead sets are beads made of amber. [71] In contrast to other bead types, they occur in graves throughout the Merovingian period. They are one of the only material categories with an origin in northern Europe that remain archaeologically preserved. Usually, it is assumed that all archaeological amber found in Merovingian graves has an origin in the Baltic. [72] Contact between the Baltic and Merovingian Northern Gaul is attested by the discovery of many fifth and sixth century Rhineland style bow fibulae in the Kaliningrad Region. [73] In the same region

[68] I would like to thank René Legoux for sending me photographs of the complete Cutry bead assemblage.
[69] Van Winkelhoff 2022.
[70] Winkelhoff in prep.; Theuws 2024, 16.
[71] Langbroek 2016; Langbroek 2018.
[72] Kazanski/Mastykova 2005, 124.
[73] Hilberg 2009, 205-289.

evidence of sixth and seventh century amber mining was found.[74] It is therefore likely that amber collected or mined in the Kaliningrad Region found its way into Northern Gaul. The study of amber beads can thus offer a 'northern counterweight' against the various publications on Merovingian exchange with the mediterranean and regions further east.[75] The distribution maps of amber beads in Northern Gaul can be found in Appendix 1.3 'Amber Beads'.

5.1 Amounts of amber

In total, 16728 amber beads were documented for the research area, on 544 archaeological sites (Appendix 1.3 fig. 1.3.1). They make up 11 percent of the total amount of beads documented for Northern Gaul. By far most of these sites are cemeteries: amber beads were only found in 8 settlements and 11 stray find sites. Most amber beads were thus found in cemeteries, with 16694 out of 16728 amber beads. Sites with amber beads are spread throughout the research area, and the distribution is very comparable to that of all Merovingian beads (Appendix 1.3 fig. 1.2.1.1). Again, for most cemeteries in northern France information on the exact number of amber beads excavated is missing, as is demonstrated by the many sites for which only could be registered that amber beads were 'present'.

5.2 Amber beads: sixth vs seventh century

By far most amber beads were excavated from cemeteries that were established before the year 600 and can be found across Northern Gaul (Appendix 1.3 fig. 1.3.2). In total 15207 amber beads were counted for these 311 sites, make up 12 percent of the total sum of beads found in these cemeteries (129.569 beads) and 60 percent of the cemeteries with beads that were established before the year 600. For 25 percent of the cemeteries with beads that started before 600 (n = 133) it is unknown whether amber was found, and in only 15 percent of these sites (n = 76) no amber was documented. In contrast, in cemeteries that were started in or after the year 600 amber is found in significantly lower amounts with a mere 473 amber beads from 71 cemeteries (Appendix 1.3 fig. 1.3.3). These make up only five percent of the total amount of beads documented for these cemeteries (9606 beads from 185 cemeteries). For 35 percent of the cemeteries with beads that started in or after 600 (n = 65) it is unknown whether amber was found, and in 26 percent of these sites (n = 49) no amber was documented. The distribution of these late Merovingian cemeteries with amber beads contrasts with the distribution for cemeteries originating in the fifth or sixth century as well: amber is virtually absent from the southern or northern part of the research area. The same contrast can be observed when considering cemeteries with beads that date exclusively to the sixth (n = 34) or seventh century (n = 164) (cut off points 480-620 and 580-720): in the former 10 percent of the beads are amber beads (334 out of 3509) and 50 percent of these cemeteries contain amber, in the latter only 4 percent of the beads are amber beads (419 out of 10955) and 41 percent of these cemeteries contain amber.

5.3 Absence and presence of amber beads

496 Out of the 1192 cemeteries with beads were documented so poorly that it remains unclear whether amber beads were found or not (Appendix 1.3 fig. 1.3.4). For 168 cemeteries with beads it is clear that no amber beads were found (Appendix 1.3 fig. 1.3.5). These sites with beads but without amber beads generally contain very few graves with beads: 1.7 on average (Appendix 1.3 fig. 1.3.6). In fact, when a cemetery contains ten or more graves with beads, where the presence or absence of

[74] Bliujienè 2010.
[75] i.e. Pion *et al.* 2020.

amber becomes more statistically relevant, amber beads are *always* present. On average, 38 percent of the graves with beads in these cemeteries contain amber beads (Appendix 1.3 fig. 1.3.7). If only cemeteries with a start date before the year 600 and more than ten graves with beads are included, 39 percent of the graves with beads contain amber (n = 94 cemeteries), versus 30 percent of the graves with beads in cemeteries that started in or after the year 600 (n = 8 cemeteries [76]).

Amber beads are a large part of Merovingian bead assemblages: when counting only those cemeteries in which ten or more beads were found, on average 11 percent of beads per cemetery are made of amber (Appendix 1.3 fig. 1.3.8). Repeating the pattern already observed above, this percentage is higher in cemeteries with a start date before 600 than in cemeteries that start in or after 600, namely thirteen percent versus six percent (Appendix 1.3 figs. 1.3.9 and 1.3.10). When cemeteries with ten beads or more that date exclusively to the sixth (n = 10) or seventh century (n = 49) (cut off points 480-620 and 580-720) are considered, this difference in bead-percentages remains, with 11,5 percent for the sixth, and 6,6 percent for the seventh century.

5.4 Discussion

There seems to be a significant difference between the deposition of amber beads in graves in Northern Gaul during the sixth and seventh century: far less amber beads were interred in graves dating to the seventh century. Where sixth century bead assemblages indicate that amber beads were available to a very large percentage of the population, they do much less so in the seventh. This contrast is visible in both the exact amounts of amber beads as the percentage of beads and graves with beads they were found in. However, this discrepancy cannot simply be explained by a scarcity of the material in the research area during the seventh century, as is illustrated in figs. 1.9 and 1.10. These images picture a typical string of beads dating to the sixth and a typical string of beads dating to the seventh century: sixth century strings of beads often contain a large number of small amber beads where seventh century strings of beads contain a small amount of large amber beads (see also chapters two and three). In addition, most amber bead working evidence in Northern Gaul dates to the seventh century as well as the sixth. [77] The decline in amber beads in seventh century graves thus does not necessarily mean the material became more difficult to come by. Instead, people seem to have actively *chosen* to deposit amber beads in a different manner than before.

[76] Only eight of all cemeteries with a start date in or after the year 600 contain ten or more graves with beads, which seems like a low amount (12 percent of the cemeteries of the same date of which we know the amount of graves with beads) compared to cemeteries with a start date before 600, of which 94 contain ten or more graves with beads (40 percent of the cemeteries of the same date of which we know the amount of graves with beads). This can partly be explained by the fact that cemeteries that were established in or after 600 are nearly four times smaller on average than cemeteries that were established before 600: see 'Signs of People' above.
[77] Langbroek 2020; Sablerolles 1999; Nokkert *et al.* 2009; Langbroek in press.

Fig. 1.9 A typical string of beads dating to the first half of the sixth century featuring many small amber beads excavated from grave 19 of the Merovingian cemetery Uden-Schepersweg in the Netherlands. Photo: M. Hemminga.

Fig. 1.10 A typical string of beads dating to the middle of the seventh century featuring two large amber beads, excavated from grave 89 of the Merovingian cemetery Bergeijk-Fazantlaan in the Netherlands. Photo: A. Dekker.

6. Case Study Beads

When studying the distribution patterns of specific bead types, it is important to remember that beads were documented poorly for many cemeteries. Often, it is merely mentioned that 'beads made of glass and amber were found', and exact amounts are not provided. Cemeteries that are published in such a way that allows the researcher to distinguish between bead types, with clear descriptions and imagery, are far and few between. The use of coloured photographs of beads in archaeological publications has only started to occur sporadically during the past couple of decades.[78] The distribution patterns presented below should thus be considered to represent the absolute minimum of specimens that were interred in graves during the Merovingian period. The distribution maps of the case study beads in Northern Gaul can be found in Appendix 1.4 'Case Study Beads'.

6.1 Late fifth and first half sixth century

Tiny green beads from India and/or Sri Lanka

Chemical analyses of tiny green glass beads from late fifth and early sixth century graves in France and Belgium have revealed that they were made with high-alumina glass (m-Na-Al 1 glass) and were therefore likely made in India and/or Sri Lanka.[79] These beads have a diameter of under 2.5 millimetre and were made by drawing out a long and very thin hollow tube of glass which was then cut into small beads. These were then rounded-off by reheating them. This technique is particular of Indo-Pacific beads that have been produced in southern Asia since the second half of the first Millennium BC and are still being produced there today.[80] Indo-Pacific beads are known for their wide distribution in East Asia, South-East Asia, West Asia and Africa. Indo-Pacific beads from fifth and sixth century contexts have been excavated from sites in Europe, Egypt, India, Indonesia, Japan and Korea.[81]

In total, 1505 tiny green Indo-Pacific beads were documented for 28 cemeteries, spread across 45 graves (Appendix 1.4 fig. 1.4.1.1). Their distribution mainly focuses on the southwest of the research area. This specific concentration may be caused by the fact that it is mostly based on a list of confirmed sites with Indo-Pacific beads by researchers from Belgium and France.[82] Also, it is very difficult to discern this bead-type based on drawings or photographs: one really needs a microscope to be certain. Furthermore, as these beads are so very small, they may have been easily overlooked or lost during excavation. In short, the method of registering this bead type (based on existing publications) will have influenced the distribution. Still, Indo-Pacific beads occur only very sporadically and in very small numbers in the bead sets from the Netherlands that were studied in detail for this dissertation (chapter two): the pattern provided by the distribution map may remain even when a more detailed analysis is made.

Confetti beads from the Eastern Mediterranean

Confetti beads, or beads with a globular cobalt blue base decorated with white, yellow, red and/or green irregular 'confetti' dots[83], are not just found in late fifth and early sixth century graves in

[78] The use of the brilliant watercolour images of Merovingian beads as published by Ursula Koch in 1977 and 2001 deserves a special mention here, as exception to the rule.
[79] Pion 2014, 178-230, bead type A1.1-01; Pion/Gratuze 2016; Pion et al. 2020.
[80] Francis 2002, 17-50.
[81] Pion/Gratuze 2016; Green 2018.
[82] Pion 2014; Pion/Gratuze 2016.
[83] Other types of confetti beads date to the late seventh century, which do not have a cobalt blue base and feature different colour combinations. See chapter three for more information on these 'late' confetti beads.

Merovingian Europe, but also in the Danube region, the Carpathian Mountains and the northern Caucasus.[84] They were most likely that made in the Eastern Mediterranean and/or the Near East: they occur frequently in late Roman contexts there, especially in Egypt.[85] In modern-day Egypt confetti beads are called 'End of the Day Beads': at the end of a bead-making day all the glass remains and leftovers are collected and crushed. Then, freshly wound monochrome beads are rolled through the crushed glass and re-heated, creating the typical confetti decoration on the bead's surface.[86]

In total, 51 confetti beads were documented for 25 cemeteries, spread across 45 graves (Appendix 1.4 fig. 1.4.1.2). In contrast to the distribution of Indo-Pacific beads, these are not found in northern France but occur in the rest of the research area instead, mainly along major roads and rivers, as cemeteries in this period did not occur often in more remote hinterland locations (see above under 'Signs of People'). The absence of confetti beads in northern France cannot simply be explained by a lack of properly published cemeteries with beads, as other bead types were documented for this region (see below).

Black doughnut beads larger than 6 mm in diameter from northwestern Europe

Simple wound annular black beads larger than 6 mm in diameter are typical for the early sixth century.[87] As most wound beads, they were most likely made in northwestern Europe itself, even when evidence of bead production for this period is lacking in the archaeological record. Surprisingly, this simple bead type does not occur much in Northern Gaul: only 109 beads were documented for 25 cemeteries (Appendix 1.4 fig. 1.4.1.3). Still, they are found in nearly every sub-region of the research area, with the largest concentration in the Meuse Valley and in eastern Belgium, along the Roman road from Cologne to Amiens and Rouen.

Black doughnut beads with a white wave from Europe or the Eastern Mediterranean

There remains some discussion whether wound black doughnut beads with a white wave decoration were made in northwestern Europe or in the Eastern Mediterranean. On the one hand, the technique of winding beads was practiced in northwestern Europe.[88] On the other hand, this type of beads is found very frequently in Levantine beads collections dating to the late Roman period.[89] In northern Gaul identical beads are found in graves dating from the late fifth till the middle third of the sixth century, where they often occur side by side with other beads from the Eastern Mediterranean and further away: it is possible they were at least partly imported from one of these regions.[90] Black doughnut beads with a white wave occur throughout northern Gaul, from the very south to the most north, though not in very large numbers (Appendix 1.4 fig. 1.4.1.4). In total, 234 beads were documented for 86 cemeteries. Reminiscent of the distribution of the Indo-Pacific beads presented above, slightly larger amounts of black doughnut white wave beads were found per cemetery in the southwestern quarter of the research area, which may tentatively point towards a Mediterranean origin.

---

[84] Pion 2014, bead type B6.1-01; Koch 1977 bead type 11,9 and 11,10.
[85] Mastykova/Pilet/Egorkov 2005; Arveiller-Dulong/Nenna 2011; Pion 2014, 191-192,) See also Panini (2007, 42-44) who calls them *Middle Eastern lamp beads with multiple spots.*
[86] Bos 2016, 134. I would like to thank Annely Arends for the reference.
[87] Pion 2014, 135-138; Pion/Vrielynck/Matthis 2018, 7.
[88] Pion 2014, 178-193.
[89] Arveiller-Dulong/Nenna 2011, 177.
[90] Pion 2014, 192, bead types B2.2-01; Siegmund 1998 bead type 31,7; Koch 1977 bead type 27,7.

Large spindle whorl beads from northwestern Europe

Large spindle whorl beads made of translucent glass and decorated with combed spiral patterns are generally excavated from graves dating to the late fifth and first half of the sixth century. [91] Excavations of the Heumarkt in Cologne have brought to light an extensive glass working production site dating to the late fifth and sixth century. [92] Remains of glass spindle whorl beads featuring the same 'colourless' glass and decoration patterns as the glass vessels produced on site, suggests these were also made here. Possibly this type of beads was made at other glass working sites as well. Like the former three bead types, large spindle whorl beads are found only in small numbers: usually, they occur as single pieces at the hip or upper leg of the person buried in the grave (Appendix 1.4 fig. 1.4.1.5). In total, 203 beads were documented for 93 cemeteries. These beads occur in the entire southern half of the research area, but not in the northern Netherlands.

Rock Crystal Beads from the East

Rock crystal is a type of quartz, [93] and is occasionally found in Merovingian graves as spindle whorls, sword pendants, and other types of beads or as crystal balls in a bronze, silver or gold wire casing. [94] It is often thought that the Merovingian population ascribed healing or magical qualities to rock-crystal. Rock crystal objects from Merovingian graves are generally dated to the late fifth and (first half of the) sixth century. [95] The material was worked into faceted beads, by grinding, burnishing and polishing: It is too hard a material to cut. [96] It could have been worked in the same working centres as garnets inside Merovingian territory. [97] Merovingian rock-crystal beads from Thüringen in central Germany are very similar to rock-crystal beads that are found north of the Black Sea and on both sides of the Caucasus. [98] Furthermore, similar rock crystal beads are known from Syria, Egypt and the Black Sea region. These parallels argue for a rock-crystal working centre outside the Merovingian realm, possibly in the Mediterranean. [99] A rock crystal and amethyst bead production site dating from the fifth till the seventh century has been found in Alexandria. Also, at a production site of Indo-Pacific beads in south India (Arikamedu), rock crystal was among the most used semi-precious stones to be made into beads. [100] Possibly, rock crystal beads from Merovingian graves in Northwestern Europe were produced in either of these locations. [101] The source where rock crystal was won is more difficult to establish: since quartz is the most abundant mineral on earth, sources of rock-crystal appear at sites all over the globe. [102] We do not know which sources were used during the early Middle Ages, although several writers of the period were familiar with sources in India, Cyprus and the Alps. [103] It seems plausible that rock-crystal was imported together with garnets and amethysts, as they can all be sourced in India and are relatively common finds in Merovingian graves. Whilst rock crystal beads are not found in large

[91] Pion 2014, 171, bead types B12.1.
[92] Dodt/Kronz 2021, Dodt 2022.
[93] Francis 2002, 12.
[94] Huggett 1988, 70; Pause 2001, 14.
[95] Siegmund 1998, 77, bead type 5.1; Pause 2001, 13; Pion 2014, 171, bead types F2.1.
[96] Pause 2001, 12-3.
[97] Busch/Korteweg 1988, 43 in Drauschke 2011, 159.
[98] Pause 2001, 13.
[99] Quast 1996, in Pause 2001.
[100] Francis 2004, 489-499.
[101] Drauschke 2011, 159.
[102] Busch/Korteweg 1988 in Drauschke 2011, 159; Pause 2001, 13.
[103] Francis 2002, 119; Pause 2001, 13.

numbers in Merovingian cemeteries, they were excavated from graves throughout Northern Gaul (Appendix 1.4 fig. 1.4.1.6). In total, 141 beads were documented for 83 cemeteries.

Meerschaum Beads from the Mediterranean

Meerschaum, or sepiolite, is a material that is occasionally found in Merovingian graves, in the form of cylindrical beads, sword-pendants or buckles. [104] Meerschaum beads typically occur as single beads in graves dating to the first half of the sixth century. [105] It is difficult to recognise whether a bead is really meerschaum or made of another chalky substance like limestone, soapstone or chalk. This means that beads called meerschaum in publications may in fact not be. [106] Meerschaum probably has a provenance in the Mediterranean: sources are in Turkey, on the Greek islands of Euboea, Samos and Thebe, Crimea, the Balkan, France and Spain. It is suspected that meerschaum was worked into beads and buckles in Byzantine production centres due to the nearby sources, the specialist knowledge needed to work it and the presence of meerschaum objects similar to the Merovingian ones in Italy. [107] Meerschaum beads occur in the southern half of the research area in cemeteries along the Rhine, Meuse and the road from Cologne to Amiens and Rouen, but not in the northern Netherlands (Appendix 1.4 fig. 1.4.1.7). In total, 98 beads were documented for 39 cemeteries.

Discussion

The distribution patterns of both Indo-Pacific beads from India/Sri Lanka and confetti beads from the Eastern Mediterranean contrast greatly with one another, the former being more widespread in north western France and Belgium, the later occurring more frequently along the Rhine. Other bead types discussed above, except for black doughnut white wave beads, though not completely absent in northern France, seem to occur there in lower amounts and fewer cemeteries as well. Despite explanations given for the absence of Indo-Pacific beads beyond northern France and Belgium given above, these contrasting distribution patterns may reflect different networks of bead exchange during the late fifth and first half of the sixth century, that met one another in the Belgian Meuse valley and along the road from Cologne to Amiens and Rouen, where all bead types discussed in this paragraph do occur.

6.2 Mid-sixth century

Millefiori or mosaic beads from Egypt

Millefiori literally means ‘thousand flowers’. [108] Beads made of millefiori or mosaic glass are built up of several pieces of mosaic glass, and often depict multiple flowers, dots, spirals or eyes. These were made by cutting them from mosaic rods of polychrome glass, that were composed in such a manner that in the interface patterns of eyes or flowers were created. [109] The mosaic pattern in these beads goes ‘through and through’ the glass: they are not just laid on the surface like decorations on wound beads. [110] Most Merovingian millefiori beads are barrel-shaped, spherical or cylindrical with a hexagonal or heptagonal section, have opaque red edges and a blue/green translucent middle section

[104] Drauschke 2011, 56.
[105] Siegmund 1998, 77; Drauschke 2011, 57; Pion 2014 bead type F4.1; Siegmund 1998 bead type 5.4.
[106] Drauschke 2011, 57.
[107] Herdick 2000, 336 and 339.
[108] Berger 1960, 9; Drauschke 2011, 149.
[109] Volkmann/Theune 2001, 525-7.
[110] Drauschke 2011, 150 and 157.

with one or multiple rows of flower motifs (called *Blättchenmillefiori*) and/or 'eyes'. Occasionally very large 'spindle whorl' millefiori beads occur. Millefiori beads have been made since the third century BCE, and mosaic patterns as found on Merovingian millefiori beads first appeared on beads from the late first to the fourth century CE.[111] They have been excavated from sixth century graves across Europe, from Finland to southern France and from England to Hungary, and occur most often in graves dating to the middle third of the sixth century.[112] Their standardised appearance and the skill needed to produce them suggests that millefiori beads were made in a specialised production centre by a highly specialised circle of skilled handicraft workers.[113] Based on the occurrence of earlier mosaic bead production sites and their popularity in the region during the Byzantine period[114], they are generally thought to have been made in Egypt or the wider Eastern Mediterranean.[115] Chemical analysis has proven that the glass composition of the reddish-brown edges of millefiori beads is different than that of other Merovingian red and brown beads, indicating that they were probably produced outside of Europe.[116] Millefiori beads occur throughout Northern Gaul, but much less so in northern France than in the remainder of the research area (Appendix 1.4 fig. 1.4.2.1). In total, 665 beads were documented for 129 cemeteries.

Reticella beads (Mediterranean?)

Reticella beads have a large cylindrical or biconical shape and are built-up of multiple rows of polychrome strands of twisted glass.[117] Reticella is Italian for 'lace' or 'net' which suits the very fine zigzag pattern on these beads' surface. They are typically dated to the sixth century, with a focus on the mid-sixth century, and do hardly occur in the seventh.[118] Their close association with millefiori beads has led many researchers to suggest a common origin.[119] However, the winding technique used to make reticella beads suggests they may have been made in Europe itself: we still lack any convincing stylistic resemblance to bead types that were made in the Eastern Mediterranean.[120] So far, no reticella bead production site has been excavated in either of these regions, although the application of twisted glass is known from so-called 'traffic light beads' that were made in Anglo-Saxon England.[121] In contrast, chemical analyses of a reticella bead from the Merovingian cemetery of Pleidelsheim in Germany suggest a Mediterranean origin.[122] Reticella beads occur in cemeteries throughout Northern Gaul and, opposed to millefiori beads, are a regular find in Merovingian Cemeteries in northern France (Appendix 1.4 fig. 1.4.2.2). In total, 218 beads were documented for 113 cemeteries.

[111] Volkmann/Theune 2001, 530.
[112] Koch 1977, 503; Volkmann/Theune 2001, 534; Pion 2014, 223, bead types E; Koch 1977, bead types M; Siegmund 1998, bead types 2.12, 2.13, 2.14.
[113] Andrae 1973, 105; Drauschke 2011, 152; Volkmann/Theune 2001, 521; Pause 2001, 16; Pion 2014, 223-226.
[114] For example, they make up a large part of the 'Coptic' bead collection in the Petrie Museum of Egyptian Archaeology in London.
[115] Arveiller-Dulong/Nenna 2001; Spaer 2001; see Volkmann/Theune 2001, 523-4, Pion 2014, 223-226 and especially Drauschke 2011, 151 for elaborate overviews of the discussion on the origin of millefiori beads.
[116] Volkmann/Theune 2001, 528, see also chapter five in this volume.
[117] Koch 1977, 211, bead types 48; Pion 2014 227-228, bead types B10.1; Siegmund 1998 bead type 2.11.
[118] Siegmund 1998, 66; Koch 1977, 211; Christlein 1966, 71-2.
[119] Drauschke 2011, 157; Andrae 1973, 158-160; Henning 1996, 794-795.
[120] Pion 2014, 227-228.
[121] Brugmann 2004, 37-38.
[122] Hoffmann in Koch 1997, 147.

Red cylindrical beads with a white spiral

Red cylindrical beads with a white spiral are typical occurrences in graves dating to the second half of the sixth century. [123] As most wound beads, they were most likely made in northwestern Europe itself, even when evidence the production of this specific bead type is lacking. Like millefiori beads, this bead type does not occur in northern France but is found in every other subregion of Northern Gaul. The largest concentration is found in the German Rhineland (Appendix 1.4 fig. 1.4.2.3). In total 354 beads were documented for 74 cemeteries.

Pentagonal yellow beads

Pentagonal yellow beads made of opaque yellow glass are generally excavated from graves dating to the second half of the sixth century. [124] Excavations of the Jodenstraat in Maastricht have brought to light a workshop dating to the second half of the sixth century that yielded evidence for the large-scale production of blue, yellow, white and red pentagonal beads. [125] Like the former bead type, pentagonal yellow beads are not found in northern France. Instead, they are a frequent find in Merovingian cemeteries along the Rhine and the road from Cologne to Amiens and Rouen. Pentagonal yellow beads were not documented in the northernmost part of the research area (Appendix 1.4 fig. 1.4.2.4). In total, 221 beads were excavated from 58 cemeteries.

Discussion

The distribution patterns of mid-sixth century bead types mirror those already observed for the late fifth and early sixth century: reticella beads do occur in northern France, whether the other mid-sixth century bead types discussed in this paragraph are very rare in that area. As is demonstrated by the presence of reticella beads, the relative lack of the other bead types in northern France does not seem to be an artifact of the database: if they were excavated, the publications would have depicted them. As suggested above, this may instead be reflective of beads circulating in separate networks: certain bead types that were common in the bead networks along the Rhine may simply not have been available in northern France, and vice-versa, whereas other bead types, such as reticella beads, will have circulated in both networks.

6.3 The late sixth century

White-Blue-Red beads

White-Blue-Red beads have a large annular body with a decoration of (light) blue interlacing and opaque red dots. They are typical occurrences in graves dating to the last third of the sixth century. [126] As most wound beads, they were most likely made in northwestern Europe itself, even when evidence the production of this specific bead type is lacking. Like some other bead types described above, this bead type does not occur in northern France but is found in every other subregion of Northern Gaul. The largest concentrations are found along the Rhine (Appendix 1.4 fig. 1.4.3.1). In total, 91 beads were documented for 59 cemeteries.

[123] Pion 2014, 138-140, bead type B5.2-01d; Pion/Vrielynck/Matthis 2018, 12; Koch 1977 bead type 42,13; Siegmund 1998 bead type 35,13.
[124] Pion 2014, 171, bead type B1.6-01a; Siegmund 1998 bead type 1.3.
[125] Sablerolles et al. 1997, 301.
[126] Pion 2014, 140-141, bead type B5.2-01d; Koch 1977 bead type 21,3.

White Biconical beads

White biconical beads are typical occurrences in graves dating to the last third of the sixth century and can still be found in graves dating to the seventh century, when they become barrel-shaped rather than biconical. [127] As most wound beads, they were most likely made in northwestern Europe itself: tentative evidence for the production of white barrel-shaped beads dating to the first half of the seventh century was excavated in Rijnsburg, the Netherlands. [128] Again, this bead type hardly occurs in northern France, but is found in every other subregion of Northern Gaul. The largest concentrations are found in the southern half of the Netherlands and along the Rhine (Appendix 1.4 fig. 1.4.3.2). In total, 494 beads were documented for 99 cemeteries.

Dice Beads

Dice beads have a large cubic body with a decoration of red borders, blue-green crosses and opaque red and yellow dots. They are found in graves dating to the last third of the sixth century. [129] As most wound beads, they were most likely made in northwestern Europe itself, even when evidence the production of this specific bead type is lacking. For such a unique bead type, it is curious to see they are found in cemeteries along the German Rhine and along the road from Cologne Amiens and Rouen (Appendix 1.4 fig. 1.4.3.3). In total, 29 beads were documented for 24 cemeteries.

Discussion

The absence of beads in northern France was observed for all three bead types discussed for the late sixth century. All three seem to occur the most in the central part of the research area, along the Rhine and in modern-day Belgium along the road from Cologne to Amiens and Rouen. It raises the question why these bead types were not reaching northwestern France, where the same road continued towards. It can perhaps partly be explained by changing burial rites: as was observed above for beads and amber beads, they hardly occur in cemeteries dating to the seventh century in northern France. Possibly this change already started during the late sixth century.

6.4 The complete sixth century

Segmented metal foil beads from Egypt and the Syro-Palestinian coast

Segmented metal foil beads are made of two layers of transparent drawn glass in between which a thin sheet of silver or gold foil is sandwiched. [130] They were produced in large numbers in the Eastern Mediterranean from at least the third century BC till the twelfth century AD, [131] and can be found in large numbers on archaeological sites from Europe to Japan (see also chapter six). During the sixth century, they were most likely made in Egypt, where a workshop has been excavated, [132] and along the Syro-Palestinian coast. [133] Chemical analyses of the glass places these beads in these regions as well. [134] Segmented metal foil beads occur in graves in Northern Gaul dating to the entire sixth century,

[127] Pion 2014, 140-141, bead type B1.3-03; Siegmund 1998 bead type 32.3.
[128] Dijkstra *et al.* 2010.
[129] Pion 2014, 140-141, bead type B11.6-02a; Koch 2002 bead type 67,2.
[130] Pion 2014, bead types 4.1 and 4.2; Siegmund 1998 bead types 40.1 and 40.2.
[131] Pion 2014, 198-200; Francis 2004, 90-93.
[132] Rodziewicz 1984.
[133] Pion 2014, 199; Callmer 1977, 98; Greiff/Nallbani 2008, 360-361; Francis 2002, 91-93; Spear 2001, 133.
[134] Pion 2014, 199; Gratuze 2013.

especially those made with silver foil. [135] They were documented in cemeteries throughout Northern Gaul and in contrast to most other bead types described above are a regular find in Merovingian cemeteries in northern France. Still, the largest number were documented for cemeteries along the Rhine and in modern-day Belgium along the road from Cologne to Amiens and Rouen (Appendix 1.4 fig. 1.4.4.1). In total, 4259 beads were documented for 107 cemeteries.

Discussion

Beads with a provenance in the eastern Mediterranean, Egypt, the Syro-Palestinian coast, Mesopotamia and India make up a large part, if not the majority of strings of beads that were interred during the first half of the sixth century. [136] The distributions of the seven bead types with such provenances discussed above confirm this: these are very comparable to the distribution of cemeteries present during the first half of the sixth century (fig. 1.11). This becomes even more apparent when it is taken into consideration that only six bead types with an eastern provenance were mapped, whilst over one hundred were described in Pion's typology of Merovingian beads from Belgium. Wherever cemeteries were in use in this period, people seem to have had access to beads exchanged over very long distances. As was touched upon above though, not all of these six bead types were documented for the entire research area: in comparison to cemeteries along the Rhine and in modern-day Belgium along the road from Cologne to Amiens and Rouen, some of these bead types occur less in northern France and the northern Netherlands. For the latter region, this can be explained by a lack of cemeteries dating to the first half of the sixth century, but this is not the case for the former region. Why is it that northern France, so well connected to the rest of northern Gaul by road and rivers, and definitely not void of beads during the sixth century (Appendix 1.2 fig. 1.2.3.6), stands out in this way? Part of the answer becomes apparent when the distribution of bead types from European-made beads is considered as well: they are even more scarce in northern France (fig. 1.12). These data suggest that the bead exchange network that supplied beads along the Rhine and road from Cologne to Amiens and Rouen in Belgium was not as active in northern France. Possibly, it was connected to a bead network that used the rivers Rhône and Loire and the dense network of roads in France instead, rather than the Rhine. These networks may have had access to the same bead sources, causing some bead types to occur in both regions.

6.5 The seventh century

Amethyst beads from Egypt and/or India

Merovingian amethyst occurs as almond shaped beads which are found in small quantities in early medieval cemeteries across Europe, from Italy to Sweden and from Hungary to England. [137] In the past, amethyst beads have been used as date marker for the period 565-630 AD, which is not accurate: for southern Germany it has been demonstrated that they occur in graves dating between 520 and 750 AD, although the majority does occur in seventh century graves. [138] This is also the case in Belgium, England and Scandinavia. [139]

[135] Segmented metalfoil beads with gold foil disappear after the first decades of the sixth century (Pion 2014, 199).
[136] Arends 2022; Pion 2014, 230-235.
[137] Ljungkvist 2009, 5-6.
[138] Drauschke 2011, 50-51.
[139] Pion 2014, 142-143, bead type F2.2; Huggett 1988, 66; Ljungkvist 2009, 6.

Generally, amethyst is indicated as a Mediterranean import [140] and has been used to study exchange relations with this region by various scholars. [141] Sources of amethyst can be found across the globe. [142] Still, large concentrations of it can be found in India, especially in southern India, [143] where amethyst has been worked into beads since prehistory. [144] Pliny the Elder has also mentioned the role of India in the world gem trade. [145] According to him, amethysts from India were the best quality. [146] Other sources of amethyst mentioned by Pliny are the Syrian-Arabian territory, Armenia Inferior, Egypt, Turkey, Cyprus, and Thasos. He did not mention European sources, even though they are present, for example in Idar-Oberstein and the Auvergne. According to Pause these European sources were not exploited during the Merovingian period. [147] As mentioned above, an amethyst and rock crystal bead production site dating from the fifth till the seventh century has been found in Alexandria. [148] Also, at a production site of Indo-Pacific beads in south India (Arikamedu), amethyst was among the most used semi-precious stones to be made into beads. [149] Possibly, amethyst beads from Merovingian graves in Northwestern Europe were produced in either of these locations. [150] It seems plausible that amethyst was imported together with garnets and rock crystal, as these can all be sourced in India and are relatively common finds in Merovingian graves. Whilst amethyst beads are not found in large numbers in Merovingian cemeteries, they were excavated from cemeteries across the Rhine and Meuse rivers, but do not occur in northern France (Appendix 1.4 fig. 1.4.5.1). In total, 372 beads were documented for 77 cemeteries.

Shell Disc beads from the eastern Mediterranean

Shell disc beads, mother of pearl discs, mother of pearl beads and bone discs are all synonyms for the same type of bead. Shell disc beads occur in Merovingian graves dating to the second half of the seventh century and are often found in large numbers on a single string of beads. [151] They were deposited in early medieval graves in central and northern Europe as well, but do not occur in France or Italy, probably due to the disappearance of the furnished burial in this period in those regions . Shell disc beads occur as white thin round discs with a width of one to four millimetre. [152] After enough time in the soil they lose their mother of pearl layer and can greatly resemble other white discoid beads made of chalk or limestone. [153] This similarity may have caused some beads to be documented as shell disc bead accidentally.

A study by Siegmund and Weiss has shown that most shell disc beads were made of the shells of warm water oysters, as only these have shells that grow thick enough to produce these beads. [154] Warmwater oysters can be found on both the Adriatic coast and in the Mediterranean. Since shell disc

[140] Drauschke 2011, 48, Huggett 1988, 66.
[141] Drauschke 2011; Huggett 1988; Ljungkvist 2009.
[142] Pause 2001, 18.
[143] Francis 2002, 117.
[144] Francis 2002, 103.
[145] Drauschke 2011, 48.
[146] Francis 2002, 119.
[147] Pause 2001, 18.
[148] Drauschke 2011, 50.
[149] Francis 2004, 489-499.
[150] Drauschke 2011, 159.
[151] Siegmund 1998, 77; Ament 1976, 309; Drauschke 2011, 64.
[152] Ament 1976, 309.
[153] Ljungkvist 2009, 10.
[154] Siegmund/Weiss 1989, 301.

beads are unknown in the French archaeological record but are often found in 'Coptic' graves in Egypt, a Mediterranean origin of the shell disc material is plausible. Research by Jux supports this theory, as he has determined five shell disc beads from the German Niederrhein to species level. All five were made of the shell of *Spondylus gaederopus L.*, which is an eastern Mediterranean oyster. [155] Drauschke has argued that a possible provenance in north-east Africa cannot be ruled out, as beads identical to the late Merovingian shell disc beads were found in Kenia in eighth century contexts; they may have been produced there. [156] A shell disc bead from Gotland was determined as a panther kauri shell, which origins in the Red Sea. [157] Summing up, shell disc beads were made of shells that have an origin in the eastern Mediterranean or even further (south)east. In total, 2199 shell disc beads were documented for 62 cemeteries. They were found in cemeteries located along the Rhine and in the northern Netherlands mostly and were hardly documented in other regions of Northern Gaul (Appendix 1.4 fig. 1.4.5.2). Their prevalence in the northern Netherlands can partly be explained by the excellent conservation condition of the terps from which these were excavated.

Discussion

As only two types of beads with a date in the seventh century were documented in the database, their distribution cannot be used to draw large overarching conclusions about bead networks in this period. However, as these are the only two types of all bead types occurring in seventh century graves that are known to have been imported from the Eastern Mediterranean or even further away, their distribution is important for further analysis. It demonstrates that beads from faraway regions, although significantly lessened in comparison to the sixth century, were still reaching northern Gaul, and people living along the Rhine in particular, in significant numbers (Appendix 1.4 fig. 1.4.5.3). Having said that, amethyst and shell disc beads were not found much in cemeteries located in the hinterland of the regions supplied via Rhine. As was demonstrated above, these hinterland cemeteries generally have a later start date than those located along major roads or rivers and often do not feature any beads at all. Their absence in northern France can be explained in the same manner as the relative absence of beads in this region during the seventh century: it may not have been lack of availability or accessibility of the material, but rather by a change towards fewer grave gifts in the burial rite that occurred earlier in this part of Northern Gaul than in the remainder of the research area. As fewer beads were interred in graves, the demand for beads may have lessened, which in turn may have curtailed the provision of beads via the exchange network that supplied northern France much earlier than the bead exchange network providing cemeteries along the Rhine and the northern Netherlands, where beads remained in demand.

[155] Jux 1998, 78- 80.
[156] Drauschke 2011, 62.
[157] Trotzig 1988, 289 in Drauschke 2011, 62.

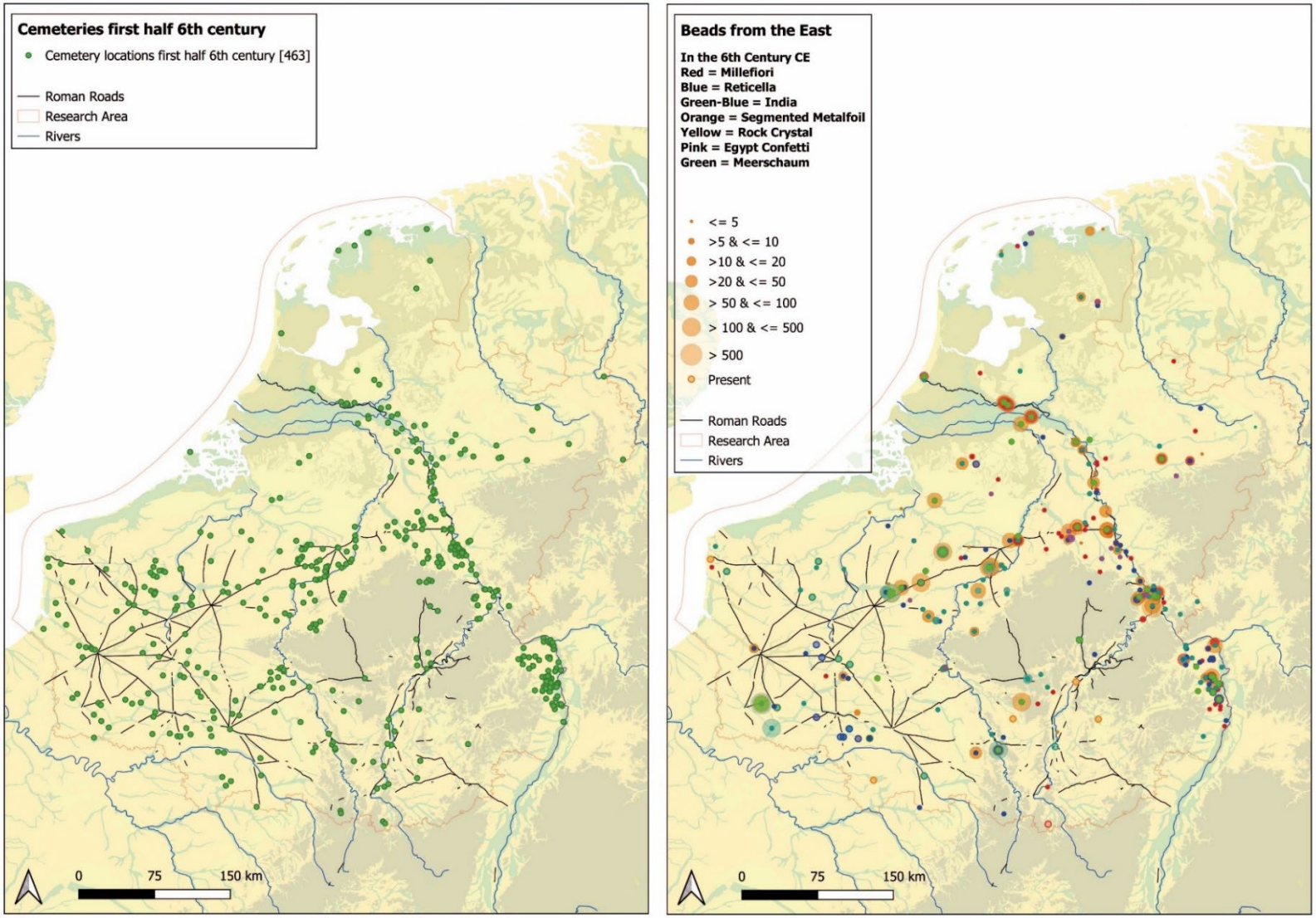

Fig. 1.11 Distribution of cemetery sites in Northern Gaul present during the first half of the sixth century versus the distribution of beads with a provenance in the Mediterranean or further east expressed as amounts of beads. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

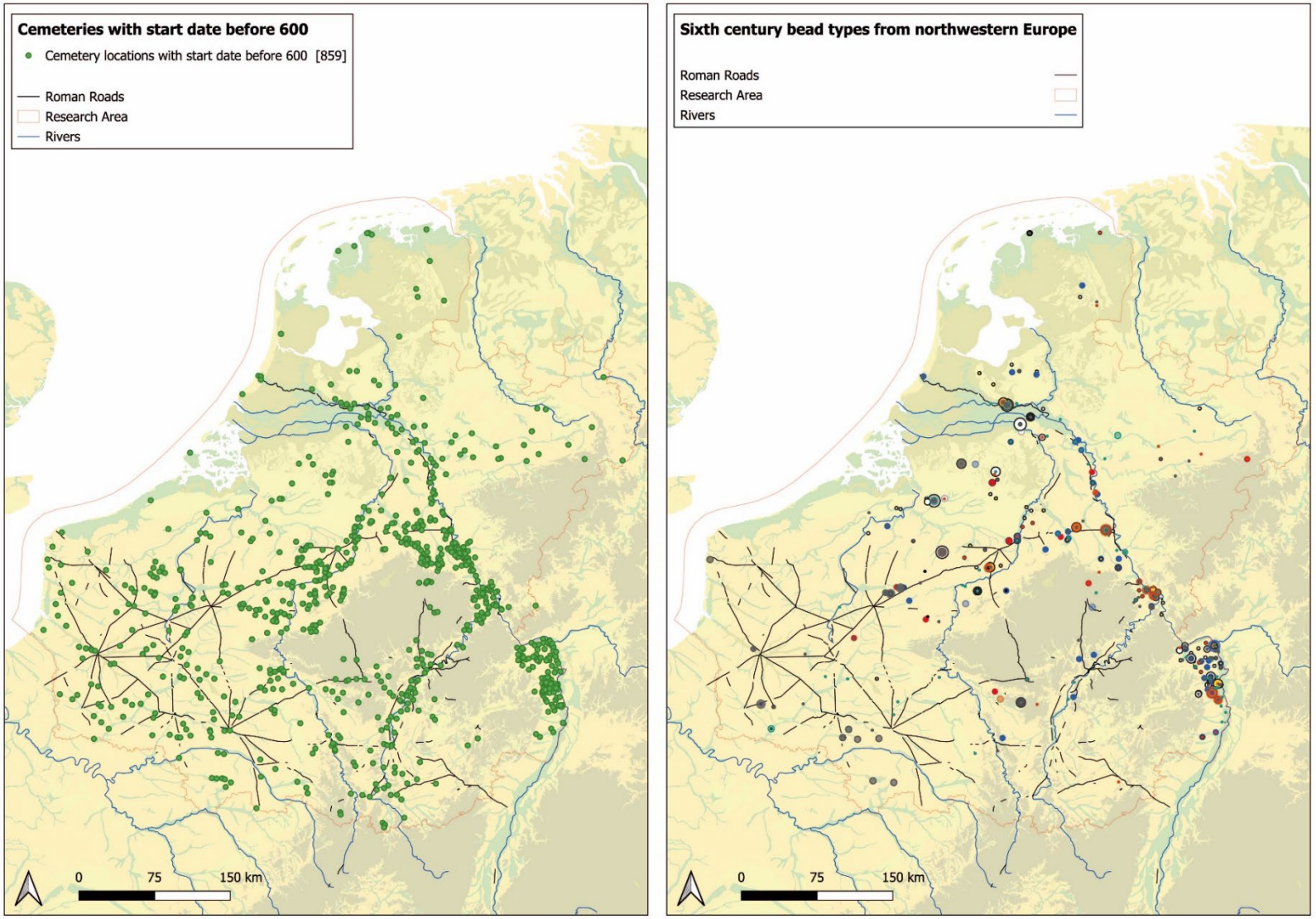

Fig. 1.12 Distribution of cemetery sites in Northern Gaul present during the sixth century versus the distribution of beads with a provenance in northwestern Europe itself expressed as amounts of beads. Source: www.earlymedievaleurope.org (Online Database ERC Rural Riches).

7. Discussion

This chapter has demonstrated that beads were easily accessible to the rural population of northern Gaul, especially during the sixth century, when they were supplied in significant amounts from both the region itself and from areas as far away as India. In that sense, beads can be seen as a blueprint for the different exchange connections that existed both within northern Gaul and between northern Gaul and the rest of the world: it will not merely have been beads that travelled, but people and ideas as well. The slow dissipation of the furnished burial rite may have lessened the demand for beads significantly during the seventh century: beads possibly circulated in society for longer stretches of time than during the sixth. [158] This decline in bead use in the burial rite was thus not so much an indicator of a lack of access to the material.

When considering the distributions of specific bead types, their presence or absence in northern France has been noted on several occasions. So far this has been explained as the product of beads arriving in northern France via a different exchange network than the rest of the research area during the sixth century, that seems to have been supplied via the river Rhine mostly. Instead, northern France may have been connected to an exchange network that used the rivers Rhône and Loire and the dense network of former Roman roads present in the region. Both Rhine and Rhône exchange networks may have accessed some of the same bead sources, causing some bead types to occur in both regions. The bead exchange network that was organised along the Rhine may have outlasted the exchange network that supplied beads to northern France, as was demonstrated by the continued presence of amethyst and shell disc beads that can be dated to the ongoing seventh century in cemeteries along the Rhine.

What was the character of the exchange networks that supplied northern Gaul with beads? How should we perceive the routes, in what way did people travel along these routes, did they travel long or short distances, and what was the status of traders and/or travellers? [159] What was the nature of these exchanges and what types of 'exchange infrastructure' (means of payment, debit/credit systems) were in use? Did beads change status (commodities to gifts) during these exchanges, and what about the changing values of beads in a subsequent series of transactions? Were beads circulating in the same spheres of exchange as other objects circulating in northern Gaul's exchange networks like coins and brooches? The bead distributions presented above demonstrate that a network that reached even the remotest of places of northern Gaul on a regular basis: it was not more difficult to access beads, even those with a provenance in the Mediterranean or beyond, for people who lived more remotely than others. It is important to emphasise that beads may have travelled in networks through gift-giving, marriage exchanges, migration, as loot, etcetera, as well as moving through regular regional and long-distance trade networks: the complete distance from place of production to the beads' final destination need not have been crossed by traders themselves. When and where beads and strings of beads crossed from the sphere of commodity exchange to the sphere of social exchange [160] is of course very difficult to establish (although see chapter six in this volume).

What catches the eye in both the distributions of cemeteries and beads, especially during the sixth century, is their locational focus on major rivers, especially the Rhine. It has recently been demonstrated that the people of the early medieval settlement Oegstgeest-Nieuw Rhijngeest-Zuid

[158] This really is just a theory without any physical evidence. One would need to study whether seventh-century bead types occurred over longer periods of time than sixth-century bead types, which is difficult to do with a dwindling amount of furnished burials and the lack of beads yielded from settlement excavations.
[159] cf. Theuws, unpublished paper.
[160] cf. Bloch/Parry 1989.

located on the banks of the Rhine in the west of the Netherlands were very dependent on the riverine exchange network for provisioning. [161] The people living along these large transport arteries may have built their daily life on the opportunities and restrictions created by their nearness to the river. It means that their activities cannot have revolved around a single mode of subsistence: living in such a dynamic landscape will not allow it. Instead, they may have exploited all the opportunities offered by exploiting riverside floodplains, and have combined activities such as farming, herding, fishing, crafting, and trading over shorter and longer distances on a daily basis: they might even have identified as 'river people' or *ripuarii*. [162] The crucial observation here is that these people could simply not afford to be the passive receivers of goods as is usually assumed for rural dwellers, [163] but must have been active agents in the procurement and creation of goods: commodity exchange will have been part of daily life for the rural population of northern Gaul. In other words, for the early medieval population making a living in the river delta that makes up most of northern Gaul, it must have been vital to have been connected to one another. [164] It is precisely this river delta that will have helped them sustain these networks: in northern Gaul it is impossible to live more than 50 kilometres away from a major river. [165] When the bead distributions presented above are interpreted with such an interconnected society in mind, the widespread occurrence of beads and bead types is not so very surprising.

As the common presence of bead types from the Mediterranean and further east demonstrates, the networks people living in northern Gaul were involved in stretched way beyond the region itself. Of course, the people inhabiting the region had migrated into the area from other parts of Europe during the late fifth and first half of the sixth century, that had been left (mostly) deserted in the mid fifth century. [166] They will definitely have left kin (in the widest sense of the word) behind, people they may still have been in contact with: the exchange networks active in Europe may have partly been the result of a diaspora of family relations across the European continent. That people had close family relations throughout Europe and had themselves travelled to or from Lent from other European regions has recently been proven by the aDNA, isotope and 14^C analyses of the skeletal material from the persons buried in the sixth century cemetery of Lent-Lentseveld on the river Waal near Nijmegen: 64 percent of the adult population were found not to have been born locally. [167] In addition, isotope data of 120 individuals dating between the late fourth and seventh century AD from seventeen cemeteries in present-day the Netherlands show remarkably high percentages of people that were not born locally: 100 percent in the fifth century AD, 53 percent in the sixth, and 34 percent in the seventh century AD. [168]

It is likely that some of the people in these kin networks specialised in the exchange of goods and travelled much further than others, much like early modern itinerant traders and peddlers, who were very adaptable and sold a wide range of products to many different people based on credit and travelled over long distances. [169] In the hagiography of St Goar, Frisian merchants are mentioned going

[161] Theuws *et al.* 2020, 461.
[162] cf. Theuws *et al.* 2020; Theuws, unpublished paper.
[163] Wickham 2005; Nicolay 2014; Steuer 1997.
[164] see also Emaus 2024.
[165] Theuws 2020; Theuws *et al.* 2020.
[166] Theuws *et al.* 2020; Theuws 2024,1.
[167] research by Eveline Altena and Lisette Kootker (Altena *et al.* in prep); summarised with their approval in Theuws 2024, 22-23. More details received via personal communication Altena/Kootker 07-03-2023 (e-mail with powerpoint).
[168] Kootker/Heeren 2022.
[169] Deceulaer 2006; cf. Braudel 1982; Fontaine 1996.

up and down the Rhine, also as middlemen shipping exotic and valuable goods. [170] They were using boats that could be beached anywhere, and there are records of 'Frisian' merchants in many places across the continent. [171] This example indicates that, whether identifying as Frisian or not, there was an active class of (part-time?) merchants involved in river trade on a regular basis. They seem to have a lot in common with the *regatao* of the Amazon basin, small-scale long-distance traders that sail up and down the Amazon over thousands of kilometres to sell products on credit first and later return to acquire the products that were made by their debtors. [172] Early medieval merchants will have played a similar and essential role in providing a range of goods to people living in remote rural areas and will have acted as both commercial and cultural agents. [173] In that sense, early medieval itinerant traders may have had an important role in disseminating news and ideas across the continent. Some of them must have specialised in specific product categories such as textiles, jewellery and/or beads and maintained trade relations with specific manufacturers or other merchants from whom they could acquire specific wares. They will have known exactly when and where to meet one another. These kin-based networks with their possible credit-based trade could be considered as an essential and highly adaptable component of the early medieval economy. [174] They would have played a crucial role in interlocking local, regional and long-distance exchange in Merovingian northern Gaul, all of which would have been essential to the Merovingian economy.

Of course, not all of northern Gaul was easily reached by trade and exchange by major rivers. Northern France, and especially Northwestern France, was definitely located more remotely in that sense: it was connected by a network of roads instead. The people living there during the Merovingian period may have identified as 'road and land people' rather than 'river people', as the landscape provided different opportunities than the river delta towards the north. Habitation may have continued here after the collapse of the Roman empire more so than in the rest of northern Gaul, leaving less 'room' for people migrating from different parts of Europe. If the networks through which beads were exchanged found their origin in kin relations, this may well explain the differences in bead distribution patterns between North(west)ern France and the Rhine Delta. In addition, it has been argued that inland dwellers, with their more settled and focused lifestyle, may have been more vulnerable to be influenced by aristocrats and institutions such as the church than riverine and coastal dwellers. [175] It may therefore not be a coincidence that Christian infrastructure developed here sooner than in the rest of northern Gaul, nor that the furnished burial rite started to disappear almost a century earlier. When the hinterland of northern Gaul became settled towards the end of the sixth century, new 'inland' identities may have developed alongside that of river dwellers in the rest of northern Gaul, which may explain the relative absence of beads in inland cemeteries that were established from the year 600 onwards. Their connection to regional markets and international trade could have been organised along different lines, which may be demonstrated by the fact that hardly any amethyst or shell disc beads were excavated in these cemeteries.

[170] Lebecq 1983.
[171] Pye 2015, 27-47.
[172] see Theuws *et al.* 2020 and Theuws, unpublished paper on Nugent 1993, McGrath 1989 and Fraser *et al.* 2017.
[173] cf. Braudel 1982; Poitrineau 1976; Jaffee 1991; Rainer 1997; Fontaine 1996 on early modern peddlers.
[174] cf. Braudel 1982; Fontaine 1996 on early modern networks of itinerant traders.
[175] Theuws *et al.* 2020, 462.

An assessment of distribution maps

Many of the findings presented above and in the following chapters are rooted in the interpretation of the distribution maps presented in here. As was outlined at the start of this chapter, distribution maps and their interpretations can be problematic and subjective. The distribution maps in this dissertation are incomplete as they are based on the fragmentary character of the archaeological record, and do not represent a situation at a single point in time, but rather a series of events over a longer period of time.[176] They do not reflect the Merovingian reality of everyday, but rather the use of beads in specific burial customs, which may well be an unrepresentative reflector of a community's economy, social structure and life-style.[177] To make things worse, they have been *both made and interpreted* by a researcher that has been submerged in the study of Merovingian beads for over a decade: she can hardly be considered a neutral observer, despite her efforts to reflect upon and present the collected data from different angles in a transparent manner. The argument could be made that, even though the distribution maps presented here paint an incomplete and subjective picture, the rather large amount of beads they exhibit cannot be denied. Furthermore, they reflect the *minimum* amount of beads in circulation: Steuer has calculated that the archaeological record hardly shows us one percent of all Merovingian graves.[178] By that ratio there will have been *tens of millions* of beads deposited in the cemeteries of northern Gaul during the Merovingian period, and that is not even considering the beads that did not end up in graves. At the same time, the realisation that the distribution maps present only a fraction of the material culture that was originally out there makes the distribution patterns observed less reliable. Keeping this in mind, do the findings presented in this and the following chapters lose some of their validity? Until the distributions are subjected to a more objective research tool that can establish whether beads were in fact reaching every corner of Merovingian northern Gaul in significant amounts and whether the differences in bead distributions that were observed are actually present,[179] the question will stand. Beyond that it is up to the reader to decide whether they find the data presented above evidence enough for the arguments made in this and the following chapters.

[176] Hodder/Orton 1976.
[177] cf. James 1988, 24 and 28.
[178] Steuer 1982, 62-70.
[179] See the paragraph on network analysis under 'Future Research' in the concluding chapter to this dissertation.