4 THE CRITICAL EVALUATION OF THE SOURCE MATERIAL

The evidence upon which this study is based, a total of 311 buildings from 107 different sites, may be regarded as relatively extensive in archaeological terms, and so to be suited to statistical analyses. There are, however, some source-critical problems with such an approach, and in this chapter I shall give a brief account of how various source-related matters have affected the archaeological material that is fundamental to the present work, prior to presenting my own method (Ch. 5) and my evidence in detail (Ch. 6). I frequently draw attention to the fact that I am engaged in subjective evaluations and that openness is conscious choice. It is hoped that this will make it easier for the reader to maintain a critical connexion with my decisions while my own awareness of these choices is heightened (Kalberg 1980; Bourdieu and Wacquant 1996). The objective is to assess whether or not the process of data collection has produced a random sample. If the sample is random, a relatively low number of buildings may be sufficient to afford a good impression of building practice (Wallis and Roberts 1962:122–3). I discuss, first and foremost, circumstances which affect knowledge of the three-aisled hall, the major part of the evidence. At the same time, I summarily point out certain factors which may have led to other types of building being under-represented. In other parts of this study I look at how the history of research has influenced the collection of data (Chs. 2–3). Here, I discuss whether the research history and other source-related issues have led to skewedness in the evidence. I shall do so by addressing four questions:

1. Building technology: were the prehistoric structures of such a kind as to be identifiable through archaeological excavations? (Ch. 4.1, 4.2).
2. Post-depositional factors: is the place where the buildings were put up accessible to archaeological research? (Ch. 4.6)
3. Management: have archaeological investigations been undertaken at the sites at which these structures stood? (Ch. 4.7)
4. Field archaeology: are the correct methods being used? (Ch. 4.3, 4.4 and 4.5).

If all of these questions could be answered with an unqualified 'yes', we should have complete and consequently representative evidence. That is quite clearly not the case, and I shall attempt, therefore, to demonstrate potentially systematic biases so that I can make allowance for them in my interpretations. The source-critical issues are tightly interwoven, and even though the discussion is based upon the questions outlined above those questions do not structure it. It is also a goal of mine to search for a chronological and spatial pattern, and when the evidence is divided into blocks that could shed light on more limited geographical regions, there will be fewer buildings in each block.

What are usually designated 'buildings' both in the present volume and in archaeological literature generally consist in practice of groups of cut features. Like most archaeological evidence, the buildings of the Iron Age around the Oslofjord are only fragmentarily preserved and are difficult to date precisely. It is often uncertain whether or not the cut features really are from buildings. Moreover some areas and periods appear to be better represented than others. In this particular chapter I shall demonstrate how various source-related factors influence the archaeological evidence at not only the micro-level — in other words, in the recognition of individual buildings — but also at the macro-level: namely the distribution of archaeological evidence in relation to time and space. In reality, archaeologists themselves can affect the micro-level, while at the macro-level the evidence is largely shaped by administrative and bureaucratic circumstances beyond archaeologists' control. Through looking more closely at certain source-critical issues I hope to gain a clear view of the limitations of the evidence, and by taking these limitations into account I hope to identify patterns that are representative of the society that produced the archaeological evidence rather than the society which has collected that evidence. Before proceedings with these critical questions between the micro- and macro-levels, I shall briefly outline what may influence our ability to identify prehistoric buildings more than anything else: namely the building practice of prehistory itself.

BUILDING TECHNIQUE AS A CRITICAL FACTOR FOR EVIDENCE

Elements of built structures that were cut into the ground are, as noted, essential for machine-stripping of cultivated land to be able to find any buildings that once stood in that area. There are therefore several types of building which cannot be identified if this technique is used. There are a number of examples which show that roof-bearing posts were not always sunk into the ground but rather were placed upon stones, slabs or the like (Myhre 1980; Herschend 2009; Grindkåsa 2012a). If all of the roof-bearing posts had rock foundations the building would not be uncovered by machine-stripping. Nor would lafted buildings be revealed. When it was that earth-fast pots were superseded by the laft technique or other styles of building in the agrarian settlements of Østlandet is a matter of debate. It is possible that lafted buildings came into use in the Late Iron Age, to function alongside buildings with earth-fast posts into the Medieval Period (Christophersen et al. 1994; Zimmermann 1998; Weber 2003). Smaller buildings without earth-fast posts or with only shallowly sunk posts are known from the Viking Period at Kaupang (Pilø 2007) although these cannot be linked to an agrarian context. In 2010, furthermore, small building foundations with no earth-fast posts of the Early Iron Age were examined close to a contemporary field in core agricultural areas of Vestfold (Mjærum 2012c). These structures were small, and no artefacts were found even though the method of excavation should have made it more likely than usual when machine-stripping is employed to find any such objects. The fields in which these buildings lay were small, and apparently had not been manured. The absence of artefactual finds, the smallness of the buildings, and the unmanured soils, indicate that the residents of these two structures were of low economic status — like that which occupants of, for instance, sunken feature buildings (*Grubenhäuser*) may have had (Herschend 2009). The combination of the building style and the state of preservation may, then, lead to settlements of low economic standing and settlement of the Late Iron Age being under-represented.

THE IDENTIFICATION OF BUILDINGS: CALLING TO ACCOUNT THE CLAIMS OF THE IDEAL

No standing, three-aisled buildings with earth-fast posts of the Iron Age have been preserved, although there are some parts of buildings such as those at Elisenhof on the western coast of Schleswig-Holstein in northern Germany that are extraordinarily well preserved (Bantelmann 1975). Apart from the very lowest parts of a few posts no major building components of organic material are preserved in Østlandet (e.g. Pilø 2005). The pit that was dug for the post can, however, be recognized by archaeologists because it is filled with soil and other materials of different colour from what is around it. Sometimes the shape of the post itself can be recognized if it had rotted in place and the void it then left was also filled with material of different colour from the fill of the post-hole otherwise (Løken 2020). The evidence used in this study is, as a result, not buildings in a strict sense but rather a collection of cut features in the ground which archaeologists interpret as building foundations if they form specific patterns; in other words, an extremely simple form of analogy. In the great majority of cases, such interpretations are formed by the archaeologists in the field (Løken et al. 1996:27–8). The pretexts for interpreting such features as traces of buildings are first and foremost other, similar, patterns (Carlie and Artursson 2004:165). What are inferred to be well-preserved building foundations thus present complete plans, the highest goal we aim at. To use Henrik Ibsen's expression from *The Wild Duck*, we are aiming at 'the claims of the ideal' (*den ideale fordring*), in the same way that Gregers Werle wanted to call to account and thus to liberate humanity through a ruthless confrontation with the truth (Ibsen 1884). Archaeologists can call the claims of the ideal to account by ruthlessly confronting the re-filled holes we find in the field with the truth as it is available through already published patterns. Field archaeologists are thus often striving to realize certain idealizations: building foundations that are already known. Even though the circumstances of building technique predetermine certain pathways for how a building can be constructed, roof-bearing structures, exterior walls, partition walls, hearths, floors and other elements that form the buildings may be combined in an almost infinite variety of ways, and it is probably very far from all the varieties of prehistoric building-types that are known.

If the patterns of cut features are misinterpreted and the evidence is pressed into patterns that it does not actually have, we lose a real understanding of prehistory. Concurrently, rigid demands for equivalence between idealizations and new finds will lead to variance in building practice being ignored. My subjective impression from a review of excavation reports and publications is that quite generally there is a high level of awareness of the problems with identifying the buildings but that there is inevitably

no guarantee that the interpretations are 'correct'. Gulli *hus* 2 in Tønsberg k., Vestfold, demonstrates some of the problems involved in the identification of a building. The structure is quite well dated to the pre-Roman Iron Age, but only post-holes from four roof-bearing posts and one hearth were discovered (Gjerpe 2008b). Some charred grains were found within the post-holes. As hearths and macro-fossils are rarely if ever found with four-post structures, the building traces were interpreted as part of a three-aisled structure. It may the case that the claims of the ideal were called upon at Gulli: if we do not believe that there are any four-post structures with a hearth and macro-fossils we cannot possibly find them.

THE ELEMENT OF SOURCE-EVALUATION DURING EXCAVATIONS

The discovery of building foundations by archaeologists in the field and the consequent interpretation of those remains is probably the most crucial critical challenge concerning the identification of buildings. It is not always easy to determine which post-holes, hearths and other cut features form part of the footprint of a building. It can also be difficult to ascertain which elements of a building were in concurrent use, as many buildings were rebuilt or repaired. Beyond that, there is a difference in whether or not the structural components have been sunk into the ground, and, if so, how deeply. Finally there are post-depositional factors that govern how much of the cut features can be discovered (Ch. 4.6). The capacity of archaeologists to identify the patterns and the structures plays a part too. From personal experience, I know that the recognition of patterns that represent buildings in an apparently chaotic swarm of post-holes is by no means automatically easy (see also, e.g., Løken et al. 1996), even if drawn plans in publications and reports may give this impression (Solli 2008). An experienced field archaeologist will, as a result, very probably be able to recognize a pattern more easily than a relative novice, all other things being equal (Løken et al. 1996:8, 10). The practice of the Museum of Cultural History in the 1990s, when extremely inexperienced archaeologists were sent out to lead excavations in cultivated fields at sites that had been completely stripped before the excavations began (Ch. 2.4), will very probably have led to buildings being missed. It may have generated geographical skewedness as well. In northern Vestfold, little cultivated land has been developed with the exception of the construction of a new four-lane motorway and a new railway line in the 1990s (Fylkesmannen 2014). The practice of using inexperienced site directors at that date may have led to large areas of cultivated land being built upon with no more than one building being identified (Hansen 1996). Structural conditions have thus very probably caused buildings to be missed even though machine area-stripping was used at sites where three-aisled buildings were thought to have been preserved.

It is also the case that the potential for recognizing patterns is dependent upon the conditions at the particular sites. It is easier to identify a single-phase building with no alterations that is standing on its own in natural subsoil of sand or gravel than a multi-phase building which overlaps other structures on a subsoil of clay and with lots of stones. I have not, though, seen any sign that this has produced systematic biases that affect the outcomes of my own analyses. The great majority of area excavations have produced finds of post-holes that do not form part of any recognized pattern. We just do not know if these post-holes are components of types of building with a ground plan that we are not aware of; parts of poorly preserved buildings; parts of buildings for which the great part of the structure was not sunk into the ground; or quite simply are from structures other than buildings. All of the post-holes with no secure building context remind us, however, that archaeologists do not find *buildings* but rather find cut features that form patterns; and that at the overwhelming majority of sites there were buildings and activities that we have not picked up evidence for.

RADIOCARBON DATING AND PERIODIZATION

To date, there is no building typology for Østlandet, while concurrently little in the way of datable finds is found in the buildings. It is also uncertain that firm traditional building chronologies or typological schemes could be generated (Martens 2005a; 2007). The dating of the buildings is consequently based to a high degree on radiocarbon datings of charcoal or macro-fossils from hearths, post-holes, wall-trenches and -slots. Chronological resolution will therefore be relatively coarse, and the buildings are dated primarily to periods. Although radiocarbon datings are a good way of assigning buildings to chronological contexts, critical factors in respect of the context and 'own age' of the samples can lead to datings being earlier, and occasionally later, than the event which one is trying to date (Ranheden 1996; Dincauze 2003:108–118; Gustafson 2005a; Gjerpe 2008d; Loftsgarden et al. 2013). Most of the buildings are dated by means of radiocarbon, but the context of the sample, the type

of material dated, and the number of dates obtained vary. If several samples from one building have been dated it is relatively common for not all of the dates obtained to fall within a coherent period of time, and authors of reports will emphasize different considerations to try to ascertain which date or dates best reflect the actual date of the building. There is also variance in whether or not authors focus on dating the construction of the buildings or the period in which they were used, even if it is usually difficult to differentiate between those. My own emphasis is on the date of construction of the buildings. I have also undertaken an evaluation of the datings in every case, and as a rule my own assessment concurs with that of the authors. In those cases where that is not so I have based myself upon my own judgment in undertaking further analysis. The dates of the buildings are presented in a variety of ways: e.g. in the 'absolute' terms of calendar years or according to a range of chronological systems, and I have 'translated' both of those styles into the relative-chronological system I use in this study (Ch. 1.1.2). My impression from reading reports and publications and from my own experiences in the field is that there is relatively high awareness of how to take samples and of the selection of material for dating. It is most common for multiple samples to be dated from each building, and when these produce an approximately consistent result it is inferred that the results of dating can be relied upon. If my impression is that the dating is unreliable, for instance where there is inconsistency between a number of results, I have assigned the building a low 'identification score' (Ch. 4.5) even if the building has otherwise been clearly defined.

There are also particular problems with the method of radiocarbon dating itself which archaeologists have to take account of when using the results returned from the laboratories, although they cannot have any impact on those results. Both the method and its issues have been described thoroughly (Michels 1973; Aitken 1990). The C^{14} isotope occurs in the atmosphere, but the level of this isotope varies. The age of a dated sample is given in C^{14} years which then have to be 'translated' into calendrical years. For this purpose, a calibration curve and computer programs such as OxCal have been developed. A calibrated radiocarbon date consequently provides a statistically probable dating in calendar years. This calibrated date is most often presented to one or two standard deviations of probability, i.e. 1 or 2 σ (*sigma*). Dating to 1 σ is 68.2% probable, but will involve a shorter period of time; at 2 σ the dating is that within the range of 95.4% probability and will involve a longer period of time. This has certain consequences for archaeologists which it is valuable to note. In a statistical perspective, one date in twenty should actually lie outside the given interval of time at 2 σ — in simple terms, it will be incorrect (Ramsey 2009). Another point is that it is important to maintain a consistent and sustainable use of either 1 or 2 σ. The greatest challenge, however, is linked to the calibration of samples. The level of carbon isotopes in the atmosphere has never been constant. The calibration curve thus cannot be a smooth exponential curve but will contain a number of flatter sections or 'plateaux' (Ramsey 1994; 2001). This is a particular problem at the transition from the Bronze Age to the pre-Roman Iron Age. Radiocarbon samples from c. 2450 BP ('Before Present', where 'Present' = AD 1950) will calibrate to the period 800–400 cal BC, which fundamentally means they are very imprecise (Becker 1993; van der Plicht 2005). Consequently some buildings from the end of the Bronze Age may be included with the evidence of the pre-Roman Iron Age. At the transition between the Roman Period and the Migration Period, and in the periods c. AD 700–930 and 1050–1200, the curve is flat (Reimer et al. 2004).

It is possible for new calibration of the dates following statistical processing of the results to give more precise datings for some buildings (Rundberget 2012:206–39; Herschend 2016). I have not, however, made it a priority to re-assess the radiocarbon datings because the time-consuming work involved would not really make any difference to the chronological sequence. In the main, I conform to the periodization of the Norwegian Iron Age as it was summarized by Bergljot Solbert (2000) although I adjust a little in light of the limitations of the radiocarbon method. In some cases the transition from the Bronze Age to the pre-Roman Iron Age (BA–pRIA, c. 800–400 BC) is dealt with as a separate phase, although the period of 800–500 BC is usually included in the pre-Roman Iron Age (pRIA, c. 800 BC–0),[3] which thus is a little longer than usual (i.e. 500 BC–0). This does not mean that I am making a case for changes in the conventional periodization; only that I am responding to the practical challenge of imprecise radiocarbon dates. I have also opted to treat the transition between the Roman Iron Age and the Migration Period (RIA–MigP, c. AD 350–450) as a separate

3 In our calendar, there is no year 0, and so '0' here must be understood as the boundary between 1 BC and AD 1. In the mathematical radiocarbon calendar, however, there is a year 0 between the last and first years labelled BC and AD.

phase, partly because of the plateau in the calibration curve which means that a large number of datings fall across both the earlier and the later period, and partly with a view to making it easier to understand the transition between the Roman Iron Age and the Migration Period. Otherwise, though, I maintain the traditional division into the Roman Iron Age (c. 0–AD 400), Migration Period (MigP, c. AD 400–550), Merovingian Period (MerP, c. AD 550–800) and Viking Period (VikP, c. AD 800–1050). There are some buildings that cannot be dated more closely than to a transitional phase between the Viking and Medieval Periods. It is possible, as a result, that my data-set includes some buildings of the Medieval Period (MedP, AD 1050–1537) notwithstanding the limitation of this study to the Iron Age. In an ideal situation, this transitional phase would also be dealt with as a separate phase, but because of the small number of buildings and the uncertain dates, these will in some cases be discussed along with the Viking-period buildings. Because of the relatively wide span of the datings, the evidence will not be extensively sub-divided into phases such as the Early and Late Roman Iron Age. The term 'earliest part of the period' is used instead, as a means of drawing attention to the imprecision that affects the datings in most cases.

AN IDENTIFICATION SCORE

In order to make the basic critical issues clear, I use the term 'identification score' to represent a cumulative assessment of the information value of the remains of a building in respect of building practice. This assessment has to be based upon the recorded traces of the roof-bearing structure, walls, hearths, an entrance, and the dating evidence (Gjerpe 2008a). The assessment is made on the basis of drawn plans. The level of preservation would ideally be based upon every single building's original construction, but for obvious reasons that is not possible. At some sites structures are found which only had walls around part of the structure, looking like structures under a half-roof (Ethelberg 2003; Vikshåland et al. 2007:123–6). Such buildings will promptly be considered poorly preserved given that the expectations are that a well-preserved building of the Early Iron Age will have surviving traces of roof-bearing posts, walls, entrances, hearths and possibly also internal partition walls. With the knowledge that we now have available on building practice in Østlandet, it is difficult to escape these presuppositions when the buildings are identified and their identification score worked out.

Four-post structures are an exception. They probably had no walls, entrances or hearths, and can be considered well preserved even though they consist only of four post-holes. The degree of identification is scored on a scale of 1–4. A score of 1 indicates that only parts or fragments of the building have been identified or that the dating is extremely uncertain. These buildings offer little as sources for building practice although they may be important in delimiting the extent of a settlement both spatially and chronologically. A score of 2 means that the basic elements of the roof-bearing structure have been identified: e.g. if the building is two- or three-aisled. Variables such as length and width may also be observable. A score of 3 means that length, width and the roof-bearing structure have been identified, and that the building is relatively securely dated. A score of 4 means that length and width, an entrance, hearth and the roof-bearing structure have been defined, while the building in question is also well dated. These criteria make it easier to assess which buildings can shed more detailed light on building practice and which only provide information on the extent of individual settlements.

POST-DEPOSITIONAL FACTORS — AGRICULTURAL ACTIVITIES AND REDEVELOPMENT

Buildings from the Iron Age in Østlandet rarely have elements which are still visible above the modern ground surface. The great majority of the buildings have consequently been found by means of machine area-stripping. Open-area stripping only became a common method in the context of heritage management/rescue excavations in the region for which the Museum of Cultural History is responsible at a relatively late date (Ch. 2). As a result, areas which saw development prior to c. 1990 were not investigated for prehistoric buildings, while even from 1990 it took time before machine-stripping trenches came to be used systematically to examine whether or not there were settlement traces in the areas to be built upon. The majority of the buildings excavated before 1990 were therefore either in marginal areas or were discovered underneath burial mounds when the latter were being excavated (Østmo 1991). These practices unquestionably led to a large number of prehistoric building foundations being removed with no archaeological excavation, especially in the contexts of redevelopment and the levelling of land. Meanwhile, normal agricultural work also affects the preservation of settlement traces in cultivated land.

For these reasons I shall briefly discuss if it is likely that prehistoric buildings in certain areas, or from particular periods of prehistory, are less accessible than others to archaeological investigations.

There is no overview of levelling work at a provincial level, but it has been suggested that down to 1986 around 40,000 hectares [ha] had been levelled in Norway, around 40 per cent of which (17,000 ha) were in Akershus (Njøs 2005) even though Akershus accounts for only 5 per cent of the farmland in Norway (Snellingen Bye and Løvberget 2014). It was especially steeper-sided valleys and other areas with a clay sub-soil that had been levelled. Ground-levelling affects not only the valley itself but also relatively large areas around it which in many cases were very probably well suited for prehistoric settlement. It is therefore probable that a higher proportion of buildings have been lost through ground-levelling in Akershus than elsewhere. It is also possible that in some periods settlement was located closer to the steeper valleys or other hilly areas with clay sub-soil than in others. If so, a higher proportion of the evidence from that period would be removed by levelling. Some examples, but no systematic investigations, may indicate that settlement was more often located over clay in the pre- and the early Roman Iron Age, and into the Migration Period, than at other times (Bårdseth 2008; Simonsen and Martens 2008; Grindkåsa 2012b; Gjerpe 2019). There is reason to believe, therefore, that ground-levelling has removed a greater proportion of buildings in some geographical areas, such as Akershus. Similarly some periods, like the pre-Roman Iron Age, may have been affected to a greater degree than others.

Agricultural activities also affect the survival of settlement traces. Some types of activity such as the cropping of green vegetables and potatoes require deeper working of the soil than others, with the consequence of a higher likelihood of the settlement traces being removed. Green vegetables are grown mostly on morainic soil and potatoes also on flat claylands. Other aspects of farming — joining fields together, topography, different tools, erosion, and not least the size of agricultural equipment — also probably have an impact on how deep the ploughing is every year (Skøien 2009). There is reason to believe, then, that modern farming affects some geographical, climatic and topographical situations more than others, and thus also, perhaps, certain archaeological periods. In her study of buildings from the Late Iron Age, Eriksen (2015:202) has shown that the location of the settlements in the terrain varies according to status. There is a basis for supposing, then, that agricultural activity has produced distortions in the survival of traces of buildings in terms both of date and of the types of settlement. It is beyond the scope of this study to explore that systematically, but I shall merely note that the lack of identified hearths and walls in Hedmark (Ch. 6) may be due to the fact that ploughing has been deeper here than elsewhere in the region which this study examines.

Expansion around towns and settlement foci in the 20th century has probably caused a large number of buildings to be removed with no archaeological excavation. In the study region, expansion has been particularly large-scale around Fredrikstad and Sarpsborg, much of Oslo and Akershus, Drammen and the Lier area, and around the towns of Vestfold. This has manifestly meant that fewer buildings are preserved in these locations, although precisely because the development has been so extensive it is quite unlikely that some periods are more poorly represented than others as a result.

The landscape in the study region is characterized by dispersed settlement, roads and other developments of more recent times even outside the foci of settlement. On the whole these developments are unlikely to have produced any serious skewedness in preserved buildings. One possible exception is that the extreme paucity of investigations within extant farmsteads has led to buildings of the Late Iron Age being poorly represented, while this lack of excavations has also meant that it is difficult to determine if the modern settlement has continuity back to the Iron Age (Martens et al. 2009). The lack of fieldwork is due not only to the obvious factor, that there are already standing buildings on the spot, but also to the fact that a range of changes could (or can) be undertaken in farming without applying for planning permission (*Statens landbruksforvaltning* 2012). As a result, many such plans have never come to the attention of the cultural heritage management authorities. The lack of (any scope for) excavations at extant farmsteads means that it is difficult to investigate continuity. It was previously assumed that virtually all settlement of the Iron Age was sited in some close association with the historically recorded farmsteads (Pilø 2005; Chs. 6–7). If that is the case, it creates a major distortion in the evidence, as settlement of Late Iron Age will be under-represented. It is difficult to determine, therefore, whether or not the absence of buildings of the Late Iron Age is due to the fact that modern farmsteads do mostly represent continuity running back the Late Iron Age or is a result of a fundamental change of building practice involving a greater use of lafting. Nevertheless, there have been some

excavations in farmsteads and underneath standing buildings, and I shall return to these in Chapter 7.

ADMINISTRATION AND MANAGEMENT

I have already drawn attention to a distinctly Norwegian approach that has generated a different history of settlement in Norway than in Sweden and Denmark (Ch. 3). This particular national approach has also had an effect on the collection of evidence itself: archaeological fieldwork. The most visible feature is the fact that open-area excavation came into use later than in Sweden, and especially than in Denmark, and it took a long time before it was to become established as an automatic element in cultural heritage management (Ch. 2). Notwithstanding its late start, cultural heritage management has still investigated a high proportion of the known settlement evidence — most of the excavations have been initiated in this area of the overall sector, with the exception of Veien (Gustafson 2016), the Åker area (Pilø 2005) and Romerike (Skre 1998). It is consequently worth taking a closer look at how cultural heritage management has affected the collection of core evidence.

Administratively initiated archaeological investigations are not evenly distributed geographically. Major development projects add to the geographically skewed distribution of buildings. The great majority of large-scale developments over farmland have taken place in Østfold, Akershus and Vestfold, especially in the context of major infrastructural developments. Since the majority of archaeological excavations are the product of administratively initiated investigations, a building has to lie within an area that is going to be developed if it is going to be examined. When that is the case, it is scholarly and bureaucratic considerations that decide if a development will involve excavation. The officialdom of the local authorities plays a key role. There is no study of possibly varying practice amongst the local authorities (*fylkeskommuner*) in the area covered by the Museum of Cultural History in respect of recording, recommendations of dispensation or required protection.[4] There is reason to believe, however, that there are differences, and it is probably of fundamental significance that local authority archaeologists' specialist advice can be over-ruled, either administratively or by politicians (Groseth 2006; Diinhoff 2013). It is the local authority that determines whether an area is to be registered or not. If settlement traces are recorded it is by no means automatic that they will be excavated. The local authority participates in the decision about whether this happens or not. The developer may also choose not to proceed with the project. Major projects are relatively inflexible, particularly roads and railways: a four-lane motorway will not be made to curve around a settlement site. Altogether the scope for granting ancient monuments formal protection is reduced. The developers in the case of major projects are also more inclined to accept the costs of an archaeological excavation because those will be a small proportion of the huge total budget. These factors are also reflected in the archaeological evidence. A truly enormous proportion of the buildings studied in this work were found through administratively initiated investigations in advance of the construction of roads, a railway, and the airport at Gardermoen. There is probably also a greater likelihood of finding buildings through a major infrastructural project than through ten small extensions even if those involve the same area overall. The spatial distribution of buildings (Ch. 6) is therefore more a product of modern development, the practices of cultural heritage management, and the business of archaeological excavation, than of Iron-age settlement. It also appears probable that these practices have led to a significant distortion in the representation of different periods.

AN OVERALL EVALUATION OF THE REPRESENTATIVITY OF THE ARCHAEOLOGICAL EVIDENCE

This section contains an overall assessment of the representativity of the archaeological evidence on the basis of the evaluative and critical factors discussed above.

Spatial distribution: The agrarian settlements of the Iron Age can be assumed with a high degree of confidence to have been sited in association with the cultivated land. The many and large areas that lack any finds of buildings should therefore pose no question in respect of representativity as by far the greater part of the area of study is unsuited to cereal cultivation. Rather, the relationship between cultivated land and buildings is able to indicate how well the buildings are represented in the evidence from the different

4 After a recent re-organization of the cultural heritage protection agency, larger, conjoined administrative districts have been given greater responsibilities and additional duties in respect of cultural heritage management, but this has no effect on the material that this study is based upon.

Table 4.1 *The geographical frequency (in square kilometres of cultivable land per building). The figures for the area of cultivable land are taken from the Central Office for Statistics (Statistisk sentralbyrå, Snellingen Bye and Løvberget 2014).*

Fylke	**Østfold**	**Vestfold**	**Akershus og Oslo**	**Buskerud**	**Oppland**	**Hedmark**	**Telemark**	**Total**
Buildings	93	58	98	7	19	23	13	311
Culitvated land (km^2)	740	414	782	516	1024	1056	252	4784
Km^2 Culitvated land per building	**8**	**7**	**8**	**74**	**54**	**46**	**19**	**15**

administrative provinces, or *fylker* as they were before the recent reform. What determined cultivable land was different in the Iron Age from nowadays, but I am nonetheless of the view that a low level of correlation between what are cultivated areas now and the number of Iron-age buildings implies that such buildings are better represented than when the correlation score is high (areas of cultivation derived from Snellingen Bye and Løvberget 2014). Vestfold, Østfold and Akershus are thus the best represented (Tab. 4.1). Concurrently, the highest numbers of buildings have been found in these provinces. However only one building has been investigated per 7 or 8 square kilometres even in these provinces with the highest number of buildings per square kilometre of cultivated land. The administrative provinces with what is inferred to have been the highest level of loss of prehistoric buildings as a result of agricultural activity and development before machine area-stripping was introduced (Ch. 4.6) are also those with the highest number of buildings in proportion to the area of cultivation. This is most probably because even after the introduction of open-area stripping these areas saw the highest levels of development and therefore also the majority of archaeological excavations. There may very well have been more buildings constructed per square kilometre of cultivated land in Vestfold in the Iron Age than in Buskerud, but not ten times more.

Chronological distribution: The different archaeological periods are also unevenly represented, and there were geographical shifts over time. It is the case that the Early Iron Age (500 BC–AD 550) is more than twice the length of the Late Iron Age (AD 550–1030) but only 15 of the 151 well-identified and dated three-aisled buildings and 29 of the 246 buildings datable to a single period are of the Late Iron Age. There are also certain patterns in the spatial distribution of the various periods. To begin with, the large number of buildings from the pre-Roman Iron Age in Østfold really stands out. There are fully 37 buildings of this period from Østfold but only 12 or fewer in Akershus and Vestfold. Conversely there are fully 48 buildings from Akershus dated to the Roman Iron Age or Migration Period against only 30 from Østfold. A total of 31 buildings from Vestfold are dated to the Roman Iron Age or Migration Period, more than 50% of all the buildings known from this province. Relatively few buildings of the Late Iron Age have been excavated; some possible explanations for that have already been outlined in this chapter (Ch. 4.1, 4.3, 4.6) and these will be examined more closely in Chapters 6, 7 and 9. The geographically skewed distribution of buildings of different periods is not easy to explain. It is probably due to a combination of preferences in the selection of a dwelling site having varied through prehistory and the fact that the relatively few administratively initiated excavations do not provide a comprehensive coverage of the locations that were preferred at different times. This factor is also discussed in Chapters 6, 7 and 9.

The total excavation of large-scale settlement sites is essential for an understanding of the relationships between buildings, or between buildings and graves, cooking pits or other structures. In order to discuss the development of settlement in an area in detail, all of the traces of buildings should be known — a very rare situation in Norway. The majority of area excavations have been, as noted, initiated for heritage management purposes. This means that the area of excavation is, with very few exceptions, limited by the developer's plans and not by the extent of the settlement. The investigation of 1.45 hectares at Ringdal, Larvik k., Vestfold, is a relatively large-scale excavation by Norwegian standards (Gjerpe and Østmo 2008). All the same, it cannot be perceived as anything but a small area of settlement compared with the size of sites in Denmark, and then only if the area of excavation is coincident with the extent of the settlement. Practically no settlement sites in Østfold have securely defined limits, and so only parts of possibly extensive settlements have been excavated. The evidence we have available at present does not, then, allow for a detailed understanding of the organization of the settlements in time or space. In Denmark, the size of Iron-age settlements ranges from 1 to 50 hectares: 55% of them lie between 5 and 25 hectares and

18% between 20 and 50 hectares (Jørgensen 2001:72). There is no corresponding excavation in Norway, and it is not known how large the settlement areas really were. The fieldwork at Forsand in Rogaland is one Norwegian example of how understanding can change fundamentally if a wider area is investigated. Here a larger, coherent, area was examined, and it thus became possible to see that there were several contemporary buildings and farms standing at about the same place, and the settlement was interpreted as a village (Løken 1987; 2001). More recently c. 60,000 m^2 with a total of six areas with settlement traces, and areas more or less void of finds in between them, have been excavated at Dilling outside Moss in Østfold (Gjerpe 2019; Ødegaard et al. 2018; Gjerpe ed., in prep.). There was practically continuous occupation from c. 300 BC to AD 200, while from c. 200 BC at least to the birth of Christ and perhaps to c. AD 150 the settlement can be regarded as a village (Gjerpe 2019). If only smaller portions had been excavated it would have been difficult if not impossible to understand that the buildings at Forsand or Dilling were parts of villages.

Despite the critical problems that I have identified above, the evidence is well suited to a discussion of the key question for this research project. What are needed, though, are methods that take account of the representativity of the evidence, and awareness of the fact that this material is in strict terms *qualitative* evidence, especially in respect of the Late Iron Age.