

5 METHODOLOGICAL APPROACH

This chapter explains how the analysis of the archaeological evidence will proceed. In the Introduction, I noted my wish to understand how Hørdalsåsen came to be deserted, and indicated that this was due to property relations and other social circumstances rather than being a straightforward economic adjustment. In Chapter 1 I have put the case for a reflexive relationship between buildings and communities that means that a world-view and social values are reflected in the buildings and the sites at which they are constructed. In simpler terms, I premise that the organization of rights to land can be studied through stability and change in building practice and the settlement pattern.

The objective of the analyses is to show patterns in time and space that will be fundamental to a discussion of rights to land in Chapter 9. My aim is to demonstrate these patterns by means of an analysis of building practice at two levels. In the analysis of building technique I take a more detailed look at the buildings in themselves (Ch. 6) and in the analysis of the settlement pattern I focus on the site at which the buildings are located (Ch. 7) – or, more precisely, the history of that site before and after its establishment as a settlement site (Christensen 1995:15–18, 134–50). I look particularly at variables that are able to assist in defining different types of building, settlement and site. In these analyses, I anticipate the discovery of dynamic trends with variation in both time and space. In consequence of the fact that the farmsteads are viewed both as settlements and as sites with a history both before and after their settlement, the variables include some factors that are not necessarily directly related to the use of the site for settlement.

Here, I wish to give an account of the combinations of qualitative and quantitative methods I make use of to bring out the patterns of settlement, both spatially and temporarily. These patterns will constitute the material basis upon which a discussion of rights to land can be based. By combining quantitative and qualitative methods in a two-stage analysis I aim to bring out quantitative patterns from and within what is, strictly speaking, qualitative evidence. The evidence comprises a series of buildings which I divide, first, into categories from their width, alignment, roof-bearing construction, type of entrance and

the like, and from combinations of those categories. Following that, I examine how their capacities and combinations of capacities are distributed in time and place. This means that each category becomes restricted, and the representativity of the evidence makes the analyses more qualitative than quantitative: a single building may have a high impact in some categories. The methods are used iteratively and connectedly in the analyses but are described separately. The analyses have mostly been undertaken using the GIS program ArcGis and the database program MS-Access.

THE COLLECTION AND PREPARATION OF THE DATA

There is no comprehensive database of excavated structures or buildings from the Oslo area. The information on the buildings is based, therefore, on a review of a large number of published and even more unpublished reports in the archive of the Museum of Cultural History (the search was brought to an end in January 2014). On the whole, I keep to the buildings as they are identified in the excavation report or publication. The majority of the buildings are dated by means of radiocarbon dating, a situation that poses a number of challenges (Ch. 4.4). I attach particular weight to the period in which a building was raised. I have undertaken an evaluation of the dating in every single case, and as a rule my assessments of the results agree with those accepted by the authors of the reports. Where that is not the case, I have used my own conclusions as the basis for the analyses. The most common reason for datings to differ is that I am prioritizing the building's date of construction while the authors focus on the period of use. The datings of the buildings are presented in various forms, e.g. in calendrical years (absolute dating) or according to a range of chronological systems, and I have 'translated' both absolute and relative datings to the relative-chronological system I employ in this study (Ch. 4.4).

The administrative provinces are used as the units of spatial analysis without any implication that these entities had their origin in the Iron Age. These regions are, however, of practical value as analytical units as the number of buildings, at least from Østfold,

Akershus and Vestfold, is high enough for statistical analysis. These provinces can also be claimed to be, to some degree, topographically and geographically distinct units.

THE QUANTITATIVE METHOD

In order to draw out relevant trends in the evidence that form patterns I shall employ simple statistical methods with data that are countable or measurable (Wallis and Roberts 1962:1, 24; Drennan 2009:3). Quantitative analysis will be used first and foremost with a range of morphological and structural elements of the buildings, which are divided into geographical and chronological sets. In order to establish different groups chronologically and spatially I shall also divide the evidence up into qualitative groups, such as three-aisled buildings. I shall then produce general values or characteristics such as, for instance, length or alignment, in order to explore whether or not the buildings within the group have additional shared features.

THE QUALITATIVE METHOD

In the analysis of the settlement pattern, I look upon the settlements as sites. There is a qualitative analysis of the site before, during and after the settlement phase; in other terms, the sites' biography. The first element is a simple qualitative analysis that is focused on change through time. The analysis is modelled on the *chaîne opératoire* (Dobres 2000) and the objective is to demonstrate various ways in which a settlement site is prepared, used and abandoned. The focus lies first and foremost on what happened at the site before it was brought into use as a settlement, and then on what happened after the settlement site was deserted, and less on the settlement phase itself.

That settlement phase is then analysed to look for patterning in the spatial, internal, organization of the settlement site. The aim here is to identify types of settlement site, and possible chronological and spatial patterns.

THE VARIABLES AND THE TERMINOLOGY

Here, I shall summarily define and describe the variables within the qualitative and quantitative analyses. The variables within the analysis must naturally come initially from what is observed, and the source-critical circumstances, as noted, impose certain limitations in this respect (Ch. 4). The height of the buildings, for instance, must have been of importance in the Iron

Age but the evidence does not allow this to be a variable (despite various attempts to calculate heights: e.g. Jørgensen 2002). The conditions of preservation and excavation also impose certain limitations on the weight that can be attached to the absence of observable variables. Traces of walls, for example, have only been identified at a minority of the buildings examined. This can hardly be due to the fact that all the other buildings had no walls, but rather that the walls were constructed in such a way that no traces were left which archaeological excavation could find. It is also shown by the analyses in Chapters 6 and 7 that several of variables that are noted here were investigated without patterning that appears to be relevant to this study being revealed. Knowledge of how the buildings were treated after they went out of use could have provided a basis for discussing the biographies of both the buildings and the settlement sites. However it is only in a few reports that there is any attention to whether the buildings rotted away, burnt down, or were demolished.

The buildings

The overall impression of the buildings is based upon a qualitative assessment of post-holes, walls, hearths and other cut features. Some buildings give a 'solid' or 'strong' impression, with substantial post-holes and clear walls, while others give a 'lighter' or 'airier' impression. The overall impression may thus be influenced by the thickness of lines used in recording and planning. All the same, I believe that this consideration does have value, especially because it is employed with care, and in combination with other features or trends in the evidence.

The central aisle is formed by the roof-bearing posts of the building and the gable posts are not included. The shape of the central aisle may be straight (two parallel rows), V-shaped (wider at one end), convex (widest in the middle) or concave (narrowest in the middle). If none of these terms fits, the central aisle is described as 'uneven'. The width of the central aisle is ideally measured between the centres of the post-marks, but since such are rarely observed the measurements must in practice be taken between the centres of the post-holes. The width of the central aisle is always measured between the widest hurdles.

The walls can be observed in the form of wall trenches or wall posts. No attempt has been made to separate out different wall structures such as wattle or horizontal planking. In a number of cases it is difficult to distinguish between wall trenches and

wall (drainage) ditches around the building, while in some cases the cut features may have served both functions.

The gable ends are a clear example of building components which it is difficult to observe. Emphasis is attached primarily to separate gable posts because these are commonly regarded as a typical feature of the Late Roman Iron Age and Migration Period (Løken 1997). Separate gable posts are composed of a pair of heavy posts at a greater distance apart than the (majority) of the central aisle otherwise, located at the ends of the building. The post-holes are usually of the same size as those in the central aisle. The separate gable posts probably carried some of the weight of the roof and helped to form a gable which would also look different from other forms of gable end from the outside (Herschend 1989).

The length of the building is measured in the centre of the structure from the outermost recognized structural component belonging to the building at either end. The gables of the building are, as noted, not always visible; nor does it appear to have been the case that both gable ends were consistently the same. Consequently no attempt is made to calculate the inferrable length of a building by reconstructing a mirrored image or anything of the sort in those cases where only one gable end has survived.

The width of the building is given in two forms, both of them measured perpendicular to the long axis of the structure. The measurable width is the greatest distance between surviving components of the building. These measurements are taken from the outer edge of roof-bearing posts or door posts but from the centre of a wall line. Surviving wall ditches are also used to calculate the width of a building, with the measurements then taken from the inside edge of the ditch. If a wall or wall trench is preserved on one side, a mirrored image of the building is produced around the long axis and a width taken as if the building were symmetrical, be that visible or not. If both the walls are preserved where the building is inferred to have been widest, the width is calculated in the same way as a measurable width. A width calculated from the distance to a wall ditch has to be understood as the maximum possible width.

The outer shape of the building is based upon the form of the wall line, and will be described as straight (two parallel rows), V-shaped (widest at one end), convex (widest in the middle), concave (narrowest in the middle) or uneven.

The location of entrances is regarded as of great importance in building practice. Herschend (2009) distinguishes between southern Scandinavian

entrances that were positioned in the middle of the building, and were shared by people and beasts, and mid-Scandinavian entrances at the ends of the buildings, with separate entrances for people and beasts. Ann Severine Beck (2011) has further sub-categorized the entrances in southern Scandinavia according to their position. Eriksen (2015) extends her categories by applying them to Norwegian building evidence of the Late Iron Age, and I make use of her categories in addition to one further defined type (Ch. 6.1).

The alignment of the buildings is given in two ways, with varying precision: the starting point is the alignment of the building in relation to the north. No attempt is made to identify the residential or byre sections, and for reasons of simplicity the alignment is always given as the northernmost one. In general terms, building alignments are divided into three sets: N (315–45 degrees), E (45–90 degrees) or W (270–315 degrees). The more precise alignments of the buildings are also given from the northernmost reading, and there are nine different categories (Fig. 5.1). By presenting the alignment with varying degrees of precision this element is made comparable with other, often rather imprecise, reviews of alignments, while the necessary degree of precision is retained (Lindström 1997:112).

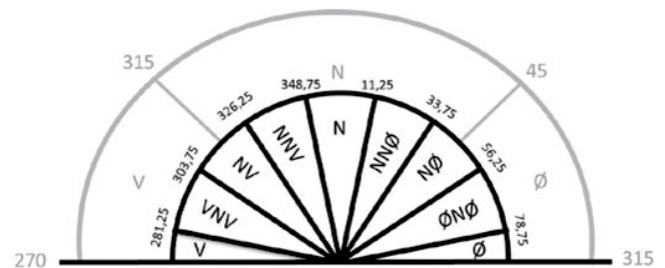


Figure 5.1 The starting point for the determination of the buildings coarser (grey) or finer (black) alignment. The figures represent degrees around the compass. Drawn by Elise Naumann.

The hearths are important in identifying residential buildings, rooms that were occupied and activity spaces, and so also are part of building practice. The identification of hearths always depends on decisions made in the past, how deeply the hearths were cut as features, and on more recent conditions for preservation — in practice, how deeply the land may have been ploughed (Jørgensen 2001). It is beyond the limits of this study to identify these two factors and so to investigate the praxis of prehistory. It can concurrently be difficult to identify which hearths belong to a building: hearths that are spatially connected with a building may be either earlier or later than the building itself.

Three-aisled buildings can be divided into sub-categories from the distribution of the weight of the roof in proportion to the roof-bearing posts⁵ and the walls (Herschend 1989:83–4). In ‘over-balanced’ buildings, the majority of the weight of the roof is carried by the central aisle. In ‘under-balanced’ buildings, it is the walls which carry a greater part of the weight of the roof. The relationship between the widths of the building and of the central aisle can really only be calculated if both sections are straight and parallel (Göthberg 2000:21). This is rarely the case, and there has therefore to be a qualitative assessment in the analysis of the building’s balance. Since ‘balance’ is an expression of how steady a building will be sideways, I have used the maximum widths of both the building and the central aisle because I assume that this determined the steadiness of the structure. The balance of the buildings is also assumed to be a chronologically significant feature. In the pre-Roman Iron Age and the first half of the Roman Iron Age buildings were over-balanced. Under-balanced buildings were introduced in the Late Roman Iron Age and predominate in the Migration Period and Late Iron Age (Herschend 1989; Göthberg 2000).

The organization of the settlements

The settlements may consist of further buildings besides one or more houses, as well as four-post structures, graves, cooking pits, hearths, wells, rubbish pits, remains of production and other outdoor activities, together with fencing in a few cases. As noted, the objective is to discover which activities took place at the same time. There are, however, only a few sites where sufficient elements are dated precisely enough for this analysis to be meaningful, and a qualitative analysis would be problematic. The aim nonetheless continues to be to look for possible patterns in the spatial organization of the settlements.

The settlements and sites

The settlements are analysed with regard to four variables which in turn comprise multiple categories of ancient monument. The buildings show when the site was in use as a settlement. Other buildings that were probably not used for residence are regarded as evidence that the site was in use although not necessarily as a settlement. Cooking pits therefore include hearths if those are not linked to a building to a very

high degree of probability. Although a distinction is usually drawn between hearths and cooking pits, they are treated as one here as it is often difficult to distinguish between plough-damaged cooking pits and hearths, while concurrently both signal the use of an area, presumably for food-preparation (Narmo 1996; Gustafson 1999; Gjerpe 2008c).

All forms of grave are assumed to have been significant in the foundation of a site. No analytical distinction is drawn between marked and unmarked burials because possible visible marking is practically always removed by farming.

‘Other’ is a catch-all term for all activity that is not comprised under graves, buildings and cooking pits. Cultivation traces and unidentified activities account for the greatest part of this category. Datings from building contexts that are clearly of re-deposited material and not related to the building are also discussed under ‘Other’.

Selection

As a starting point, all of the excavated buildings with earth-fast posts were intended to be included in the research be they one-, two- or three-aisled, four-post structures, or other residential houses or workshops. Not all of the buildings, however, are equally well suited to all of the analyses. As a result, a number of qualitative choices were made in the course of the quantitative investigations. To a large extent, buildings that cannot be dated by period are omitted, as they have little to contribute to an understanding of changes over time. Buildings with identification score 1 are largely omitted too, usually because the buildings cannot be categorized at all readily. Thus even the categories that are used as variables in the quantitative analyses are rooted in qualitative decisions. A high proportion of the problems with the classification have been explained in the context of the source-evaluative challenges and are not the subject of further discussion here. It is, however, worth noting that this selection may make it hard to identify buildings with uneven post-settings. As I have described it, there are several source-critical issues which limit the information value of the evidence. Nevertheless there are quite a lot of buildings that are well identified and well dated, and which are able to shed light upon building practice in Østlandet. By being clear about the potential and the limitations of the evidence, I am able to avoid attaching too much

⁵ In this study, the term ‘roof-bearing posts’ is used only of the internal points even when wall-posts and end-posts, technically, are also carrying some of the weight of the roof.

weight to individual results and missing or explaining away trends within the evidence.

The criteria for the selection of settlements for the analysis of sites are that there is at least one well-dated three-aisled building at identification score 2 or more, and that there is an 'adequate basis' for assessing other activity at the site. If my subjective impression is that excavation of a larger area around the buildings and/or the datings of structures would

not fundamentally change one's understanding of the site, it is viewed as adequately evidenced. If one takes account of the source-evaluative factors in the analyses, the buildings and the settlement sites that are to be analysed combine to provide a good basis for illuminating change and continuity in building practice and settlement pattern in the agrarian culture of Østlandet in the Iron Age.