Mechanisms of Security

Locks, keys, and ordered life in Iron Age Norway (*c*. 0–1050 AD)

Volume I of II

Heidi Lund Berg

Thesis for the degree of Philosophiae Doctor (PhD)
University of Bergen, Norway
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Abstract

This thesis examines the technological and social parameters for, and the social impact of, the introduction and implementation of locking into Norway in the Iron Age, based on analyses of locks and keys. The functional properties of locking devices and their practical applications as security mechanisms constitute the focal point of the study, and the basis for discussing how locking contributed to the ordering and organisation of life and society in the course of the first millennium AD.

The main aims are to establish an empirical foundation for the study of locking devices and to understand locks and keys as a technological and social phenomenon which was affected by and had effects on the societies that created and used them. The archaeological material is approached from a conceptual framework centred on perspectives of entanglement and social boundaries, in which locking is considered a social practice. As material agents locks and keys are seen as involved in the physical protection of things and spaces, regulation of access, and manifestation of ownership rights, as well as the creation and negotiation of values and norms as part of social order.

The analytical material is comprised by more than eight hundred locks and keys dated from the Roman Period to the Viking Age, deriving from burials, depositions, and settlements, as well as single finds. The finds are used in the construction of renewed classifications for Scandinavian locks and keys, which is based on their functional designs and their correlation to lockable containers, doors, and fetters. Through temporal, spatial, and contextual analyses of types the thesis outlines a complex picture of production, innovation, distribution, and application of locking devices. The results illustrate that locks and keys were introduced and developed in stages in Norway, and that their use expanded and diversified practically as well as socially. The analytical patterns are further discussed in terms of security, ownership, and order, arguing that locking from its introduction became gradually embedded into society during the Iron Age. This is suggested to result from the success of locks and keys in achieving order, and their close relationship with processes of hierarchisation, social differentiation, and social complexity.

The thesis provides new insights into the practical functions and applications of diverse locking mechanisms, technological development, craft specialisation, exchange and contact networks, and the social impact of locking in terms of physical and social order. It also contributes to current debates concerning social organisation and transformations within Norway and wider Scandinavia and Northern Europe in the first millennium AD.

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Heidi L. Berg

Contents

Abbreviations

AD, BC	Anno Domini, before Christ
EIA	Early Iron Age
IA	Iron Age
LIA	Late Iron Age
MA	Middle Ages/Medieval Period
MP	Migration Period
MVP	Merovingian Period
RP	Roman Period
VA	Viking Age
Co.	County
Crem.	Cremation
Dep.	Deposition
Gen.	Gender
Ind/Indet.	Indeterminate
Inhum.	Inhumation
Mat.	Material
Mun.	Municipality
Obj.	Object
Ph.	Phase
Tr. f.	Transitional finds
Unkn.	Unknown
AM, UiS	Museum of Archaeology, University of Stavanger
KHM, UiO	Museum of Cultural History, University of Oslo
NatMus	The National Museum of Denmark
SHM	The Swedish History Museum, Stockholm
UM, UiB	University Museum, University of Bergen
UM, NTNU	University Museum, Norwegian University of Science and Technology
UMAK, UiT	The Arctic University Museum of Norway (formerly Tromsø University Museum), University of Tromsø
MUSIT	The IT organisation of the university museums in Norway

Illustration acknowledgements

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PART ONE: A History of Security

1. Introducing locking

This study explores locking mechanisms from a perspective of socio-technological conditions and transformations in the Iron Age in Norway, from the Early Roman Period to the end of the Viking Age (*c*. 0–1050 AD). During the course of the first millennium AD, locks and keys arrived and changed from being simple in construction and few in numbers to becoming exceedingly varied in form and complexity and widely distributed across the Scandinavian area. They underwent significant technological developments and occurred in a wider range of contexts, becoming increasingly diverse and specialised. The details in these developments and how they came about have remained largely unaddressed archaeologically, and shedding light on these processes is the main concern of this investigation.

Previous research into locking mechanisms may be divided into two general fields (Berg 2013:26–30; 2015). The first mainly concerns symbolic meanings, advocating gendered, cultic and/or religious perspectives that rest heavily on medieval literary sources. The second encompasses studies regarding morphological traits and chronology on smaller material collections, or functional perspectives that to a limited degree move on to interpretation of social significances. A smaller, more recent trend is comprised by endeavours that combine wider empirical evidence and social perspectives to a fuller extent. This work aims to follow this trend and further bridge the gap between the symbolic and the practical by studying the technological development of locking mechanisms in relation to their practical applications and social impact.

Attempting to understand early locking devices and their uses entails seeing them as boundaries drawn between people, things, and spaces, and as part of ordering life and society (cf. doors and houses in Eriksen 2019). As I will demonstrate, locking is a complex phenomenon that consists of a multitude of aspects: securing and protecting things and spaces; regulating access and movement; administrating order and use; mediating ownership, rights, and responsibilities; defining and expressing social position and symbolic significances. These aspects are intertwined, developing and changing over time and across social and geographical entities. As immaterial aspects they are intangible and elusive, but they may be gleamed by examining how people locked, what they locked, and how they ordered their material world. Thus, locking practices are important in understanding the Iron Age societies and the actions and mentalities of their inhabitants that sustained and changed them.

1.1 Research objectives and questions

The study is comprised around two main objectives. The first is to establish a comprehensive, empirical overview of how locks and keys change regarding functional form in Norway in particular and in Scandinavia more generally during the first millennium AD. This is necessary because such an overview is currently lacking, and it is vital for answering questions regarding their practical and symbolic applications and for bringing research on locking mechanisms forward (Pantmann 2006:9). So far, types and chronologies have been established on local and regional levels, and on particular sites or shorter periods. Their criteria and terminologies are diverse and sometimes incompatible, making comparisons of materials difficult. A basic framework of understanding and a common terminology would help the discourse and stimulate new perspectives across geographical and temporal divides. Thus, I formulate pan-Scandinavian classifications and typologies for locks and keys that are founded on the technical function of the mechanisms – i.e. 'techni-functional' – meaning that they are technologically based, but centred on operation rather than production. The classifications will explain how types of locks and keys worked technically, while the typologies will illustrate when and where the different types existed, providing useful tools for both dating purposes and for constructing better understandings of the archaeological finds and the past societies.

The empirical overview is the foundation for the second objective, which is to explore and discuss the phenomenon of locking in the Iron Age, investigating what factors enabled locking to be introduced and what purposes and effects its introduction and incorporation had. My emphasis resides on locks and keys as practical devices, objects of security and restriction, although they also held representative meanings for people in the past (Berg 2013, 2015). The aspect of security is at the forefront of the analysis, the point of departure for approaching locking as a material and social phenomenon. From security spring notions of order, of opening and closing, of protecting and safe-keeping, of private versus public, of ownership and possession, of granting and prohibiting access, of upholding and breaking boundaries and rules, of bearing responsibility and suffering consequences. At the basis of locking mechanisms lie the norms and ideals that govern their use and significance. My view is that a study of locks and keys is a study of social desires and necessities related to security (McCrie 2006), and that security is intrinsic to achieving order physically and socially. The following study is an exploration of this view. Here, locking mechanisms are placed into a discussion on social ordering, how material devices take part in regulating human behaviour, norms, and ideas; how human-thing relationships are expressed and transformed; and how security, desires for safety, and dealing with uncertainty and risk play a part in changing societal conditions in the Iron Age.

Through an analysis of locks and keys, the study investigates how a technology of security was introduced, applied, transformed, and made relevant in connection to varied and changing social conditions during the course of the first millennium AD. Changes in the technology, its geographical and temporal distribution, and its applications in life and death are studied in order to shed light on specific social processes, such as manifestation of ownership, management of boundaries, and organisation of society through things, norms, and practices.

The study involves exploring the following research questions:

1. *How did locking devices develop over time and space in terms of technical function and security?*
2. *What did keys and locks physically secure?*
3. *Which purposes may locking have served?*
4. *How did locks and keys take part in the ordering and structuring of Iron Age life and society*?

1.2 Empirical outline and methodology

The study encompasses all finds of keys and locks within the present-day Norwegian area dated to the Iron Age, documented prior to 2018. They constitute finds from archaeological contexts such as burials, rural and urban settlements, possible hoards or ritual depositions, as well as single finds.

The periodical delimitation is set from the beginning of the Roman Iron Age to the end of the Viking Age. The start is determined by the first occurrence of metal locking devices in archaeological contexts, sometime after 0 AD, and the end is marked by the social and political changes characterising the beginning of the medieval period. From *c*. 1050 AD onwards, the state formation processes that had transformed Norway into a unified, Christian kingdom represent a demarcation from the Iron Age societies (Nordeide 2011; Solberg 2003). After this point, locks and keys undergo further technological transformations, are involved in different social situations, and are likely imbued with meanings relevant for the medieval social structures. As such, the Iron Age practices were likely different from those of later centuries, the periodical divide thus forming a logical delimitation for the study. With regards to terminology, the term 'medieval' is applied in reference to the Middle Ages in Scandinavia, encompassing 11th–16th centuries (1030/50–1537 AD). The term 'Iron Age' refers to the period 500 BC–1030/50 AD, but within the context of locking, it refers to the time frame in which locks and keys have been documented in Norway and Scandinavia, encompassing the first millennium AD.

Current-day Norway is chosen as a focus area, representing Scandinavia's westernmost and northernmost part. Although populated by varied peoples within dynamic and changing administrative units, Scandinavia is considered a largely unified cultural sphere in the Iron Age, with common languages, similar social structures and religious beliefs and practices (Brink and Price 2008; Hedeager 1992, 2011; Herschend 2009). The distribution of locks and keys is centred within the areas of Norse settlement. While there are few, select contexts that display elements of Sámi or non-Norse culture, the discussion will mainly reside within the bounds of Norse culture and to a limited degree address aspects of ethnicity.

Norway is a large geographical area with diverse topographies, landscapes, and settlement patterns, and a rich and varied archaeological material. Contrasting north to south, east to west, mountains to coasts, and fjords to inland plains and valleys will provide patterns for comparison with existing knowledge. The findings are expected to display variation and similarities within and across different areas, which will be relevant in discussions on overarching similarities and regional variability in Norway and Scandinavia in general (Gjerpe 2016; Price 2002; Solberg 2003; Svanberg 2003a, b).

One could argue that the Norwegian area and material is too large and complex to be gathered and compared, posing a risk of generalisation. However, while working with a large archaeological material with considerable geographical and temporal distribution poses methodical and interpretative challenges, it also presents significant analytical possibilities, which can be utilised by applying suitable methodology and analytical scale. In this study, I attempt to draw out tendencies in a thousand year perspective, extracting details on a meso and micro scale for observing transformations on the macro scale, for which this material is well suited. As Scandinavia is considered to represent a largely unified cultural sphere in the Iron Age, a collective study of the Norwegian finds is valid and – in fact – necessary in order to establish long-term, multi-scalar patterns relevant for a discussion of socially embedded technological developments.

1.2.1 Dating and chronological framework

The keys and locks and their contexts are dated by a range of different methods. For burials and depositions, these are mostly dated based on contextual evidence using cross-dating by find combination, artefact typologies of diagnostic artefacts, burial custom, settlement evidence, and stylistic elements. Radiocarbon dates are rare and only present in the most recently excavated finds. I have largely applied the date ascribed to the find, either set by excavators, collection reviews, or by research done on the specific find. I have, however, made precisions of the set dating when possible. Often the finds have been designated to general periods, such as 'Viking Age', but when information about context and associated finds have allowed for it, I have tried to reach a finer relative date based on established chronological frameworks. This is done in order to achieve a better understanding of the technological development by placing specific technological changes (types and variants) in time as precisely as possible.

For settlement evidence, there are radiocarbon dates performed on selected features (such as fire places, cooking pits, and cultural layers), and otherwise the dates are based on related artefactual evidence found in the features or the associated layers. The dates of the finds are ascribed to the span of occupation at the settlement/the house or building, or the feature in which the find was made. Single finds that have no contexts are dated typologically by form or style of decoration.

As stated above, establishing a comprehensive chronological overview of locking mechanisms from Scandinavia is one of the two main research objectives. A number of typologies for locks and keys have been presented in earlier works, but mainly based on particular sites or areas, shorter periodic time spans, and varying research questions (as will be demonstrated in Chapter 2). While these make up a significant knowledge base, I consider it necessary to construct overviews that may encompass them all, based on a cohesively treated material anchored within a unified chronological system.

The periodical division of the Iron Age is defined based on relative chronologies of archaeological artefacts and partly on historical dating (Gräslund 1996; Solberg 2003). Absolute chronological dates produced by radiocarbon dating and dendrochronology have not had particular influence on the periodical definitions beyond confirming and refining the traditional dates (Solberg 2003:219). The relative chronologies are constructed upon observed stylistic changes in form and decoration within different artefact categories, time frames, and geographical areas. As this study spans the first millennium AD, from the Roman period through the Viking Age, it involves combining different chronologies for the respective sub-periods and phases into a chronological framework. The criteria for each periodic unit varies, depending on material evidence, region, and research objective, making this a challenging task (Ystgaard 2014:35, with references), but it is currently the established way of approaching a chronology for long temporal spans.

The relevant chronologies for the periodic framework are presented in Table 1.1. For the Roman Period (0–400 AD), I am applying the chronology by Ulla Lund Hansen (1987) in her study of Roman imports in Scandinavia. Hers is a revision of the chronology by Hans Jürgen Eggers (1955) – which was built on earlier chronological works by Oscar Almgren and Birger Nerman (1923) and Oscar Montelius (1895, 1896, 1897) – and a later refinement of Egger's chronology by Kazimierz Godłowski (1970). Lund Hansen's phases are largely based on Danish finds, but also include considerations of Swedish and Norwegian finds, and have been widely used in works on the Roman Period in Norway (e.g. Engevik jr. 2008; Reiersen 2017; Rødsrud 2012; Skogstrand 2010).

For the Migration Period (400–550 AD), the chronology is based on Siv Kristoffersen and Bente Magnus' (2010) treatment of bucket-shaped pottery, and on jewellery and stylistic development treated by Kristoffersen (1999, 2000) and Ingunn Marit Røstad (2016), which has been added to and revised in a recent article by these two authors (Kristoffersen and Røstad 2020). This framework build on those by Eva Nissen Meyer (1935), Egil Bakka (1973), and Eldrid Straume (1987), and has become a dominant periodical system for the Norwegian Migration Period (Engevik jr. 2008; Fredriksen et al. 2014; Kristoffersen and Magnus 2010; Reiersen 2017; Røstad 2016; Straume 2005).

There are four central chronologies defining the Merovingian Period (550–800 AD) in Norway, respectively by Synnøve Vinsrygg (1979), Hans G. Gudesen (1980), Geir Helgen (1982), and Ingunn Marit Røstad (2016). Vinsrygg's is based on jewellery from burials in Northern Norway, Gudesen's on weapons from Eastern Norway, Helgesen's also on weapons from Northern, Eastern, and partly Western Norway. Røstad, however, encompasses both Migration and Merovingian periods in her study of jewellery from Norway and larger Scandinavia. For this study, Røstad's chronology is preferred, as she has unified the pre-existing systems into her framework, enabling a study of the entire Norwegian area. Her system is also in line with that of Mogens Ørsnes (1966) for Southern Scandinavia, which is widely used and has been largely upheld with Continental chronologies (Røstad 2016:51–52, with references).

	Lund Hansen 1987 *Scandinavia*	Kristoffersen and Magnus 2010 *S. and W. Norway*	Røstad 2016 *Norway/Scandinavia*	Petersen 1919, 1928 *Norway*	Current work	Periods	
1000				11th C. Late VA 1000	11th C. 1000	Late Viking Age	1000
900				10th C. Mid VA 900	10th C. 900		900
800			800	9th C. Early VA 800	9th C. 800	Early Viking Age	800
700			Fase 3 725 Fase 2	8th C. Pre VA 750	Phase 3 725 Phase 2	Late Merovingian Period	700
600			600/650		600/650	Early Merovingian Period	600
500		550 D2b 500	Fase 1 550/560 D2b 525 D2a		Phase 1 550 D2b 500	Late Migration Period	500
400		D2a 450 D1 400	475 D1 400		D2a 450 D1 400	Early Migration Period	400
300	C3 310/320 C2				C3 310/320 C2	Late Roman Period	300
200	250/260 C1b 210/220 C1a				250/260 C1b 210/220 C1a		200
100	150-160 B2				150-160 B2	Early Roman Period	100
BC/AD	70 B1b 40 B1a 0				70 B1b 40 B1a 0		BC/AD

Table 1.1. Applied chronologies for the first millennium AD in Scandinavia.

For the Viking Age (800–1050 AD), Oluf Rygh's *Norske Oldsager* (1885) and the typological treatments on weapons, jewellery, and tools by Jan Petersen (1919, 1928, 1951) have constituted the dominant framework for the chronological division in Norway, where the 8th to 11th centuries correspond to the Pre-, Early, Middle, and Late Viking Age (Østmo 2019:40, Table 1). There has been considerable debate regarding the beginning and the end of the period (Solberg 2003:218-219, with references), but few attempts at redefining its phases. One exception is a revision of Petersen's typology of brooches by Iben Skibsted Klæsøe (1999), who has constructed altered phases by refining his type definitions into groups. Klæsøe's phases are somewhat more nuanced than Petersen's and move beyond the formal century divides, but this is also the reason why hers is challenging to apply as a general temporal framework. For one, not all of the Viking Age contexts in this study contains jewellery. Secondly, referring to whole and half centuries is the widely established way of discussing the Viking Age in Norway and internationally. I have therefore chosen to adhere to the century division, and to apply the commonly used separation of Early and Late Viking Age at *c*. 950 AD.

1.2.2 Material selection and investigation

The primary level of investigation will be to gather data through artefact studies. Aiming to gather information on all finds of locking mechanisms from the Iron Age, I have visited the collections of the five regional museums in Norway: Museum of Cultural History, Oslo; The University Museum, Bergen; NTNU University Museum, Trondheim; Museum of Archaeology, Stavanger; The Arctic University Museum of Norway, Tromsø. Additionally, a few finds from the local institutions Telemark Museum and Mjøsmuseet are included (information acquired through Digitalt Museum online database, www.digitaltmuseum.no).

The urban finds of the early medieval towns, Oslo, Bergen, Trondheim, and Tønsberg, have not been included. These towns do have lock and key remains from the late Viking Age, but these are few, and most of the evidence has been treated and published elsewhere (Cadamarteri 2011, 2015; Færden 1990; Grieg 1933; Reinsnos 2006, 2013). The focus of this thesis is the development of Iron Age locking practices, and the town finds are mainly part of a discussion on early medieval urbanisation.

The artefact search and investigation resulted in 832 locks and keys (Table 4.1). The majority of the finds have been studied by me at the museums. Some finds were not available for study, and others were excluded due to lacking preservation, misclassification, or erroneous date. All the finds that were studied personally have been described, sketched, measured, weighed, and photographed. Observing the artefacts and engaging with each piece proved essential for making sense of the different lock mechanisms. As most of the finds were in various states of disintegration, a significant part of the investigation involved physically and visually reassembling the locking mechanisms in order to understand their arrangement and operation. Many lock and key types were familiar through the works of other researchers, but during the artefact analysis it became apparent that several types and variations had not been previously recognised. In this work, drawing has been an important tool in visualising how the different parts worked together, recreating a specific operative sequence, or reconstructing the mechanism and the container it locked.

1.2.3 Analytical scales and parameters

Returning to the objectives of the investigation and my research questions, there are different levels of inquiry and methodologies inherent in the questions posed. The initial question concerns *functional development of locking mechanisms over time and space*, which primarily regards the artefacts themselves as somewhat separate from the contextual conditions. The temporal and spatial dimensions are considered parameters for discussing change and distribution from the point of view of technical function and operation. However, there are social dimensions to the developments that are highlighted in the subsequent questions.

The second and third questions (*what keys and locks physically secured*, and *which purposes locking may have served*) concern to what practical and social purposes locking mechanisms were applied. Here, the technical function of mechanisms is correlated with practical use. Thus, these questions connect the technological with the contextual, where the social actions and interactions are at the forefront and the temporal and spatial aspects form the background. The first three questions may be described as analytical questions, which refer to different scales of analysis – ranging from the macro to micro – and the parameters of time and space, context, and practice.

The fourth question concerns the interpretation of the patterns reached through the analytical inquiries, namely *in what ways they were involved in the ordering and structuring of Iron Age life and society*. This is where the resulting patterns are viewed in light of the theoretical and conceptual frameworks, where elements of observable practices, of social order, and of technology are combined in search of a multi-faceted, flexible, and socially nuanced understanding of locking as a past social phenomenon. It involves connecting the results with understandings of social conditions such as societal structures and transformations, individuals and group organisations, and norms and regulations pertaining to ethics, morals, and law. A central part of this interpretive process involves situating the development of locks and keys within the larger developments of the Iron Age societies in Scandinavia, using comparative archaeological materials and some textual sources.

The following parts of this chapter describe the methods applied to reach answers to the problem statement. The first pertains to how technological development is approached through establishing technically functional classifications for the locks and keys. The subsequent parts introduces the multi-scalar analyses, intended to produce information ranging from macro-level development and distribution using GIS, to use and application of locks and keys through meso and micro considerations of contextual conditions.

Technological development: classification and typology

The first analytical step of the study is to classify the locks and keys according to the technical function of each mechanism. The definition of types is based on morphological criteria relating to how the various locks were operated, meaning the physical traits of the artefacts that provide information about their construction and function. It involves identifying the governing locking principles of each mechanism and sorting the material according to variations within each principle. Recognising that the locks are inherently related to what items they were securing, an overview of lockable objects is presented before the classifications, to establish a background for understanding the types and their order. The conceptual definitions of the terms classification and typology explain how these are different and how they are applied in this study. The classification and typology of locking mechanisms are thus a foundation for conducting the subsequent, multi-scalar analyses of geographical, quantitative, and contextual occurrences of locking through the first millennium AD.

The macro level: GIS distribution analyses

The quantitative, temporal, and spatial distribution analyses are conducted on a macro scale using GIS software, ArcMap 10.6. The GIS analyses are performed by sorting, counting, and visualising the information stored in an Excel database, where all information about each find is related to UTM coordinates. The coordinates are extracted from the respective museums' artefact databases (administered by MUSIT), the Directorate for Cultural Heritage's site database, *Askeladden*, or through the Norwegian national map service, *Kartverket*.

The primary aim of this method is to produce data about which mechanisms were found in which context forms, within which phases and periods, and in which geographical regions and areas. Through maps that communicate the spatial and contextual distribution of lock and key types during the chronological stages of the Iron Age, the patterns produced form a foundation for observing the specific tendencies in how locking mechanisms developed regarding technical function and use. The main focus is the quantitative, temporal, and geographical, while the contextual distribution is further analysed at the next analytical level.

The meso level: contextual analysis

At the meso level, the occurrences of lock and key types within their archaeological contexts are studied in more detail. This level of analysis is both quantitative and qualitative, searching to discern the frequency and form of deposition of certain lock types in different past situations and places. For burials, the observations will be related to evidence of ritual deposition of locks and keys, and of the likely gender and social status of the deceased. At settlements, the type of settlement, evidence of buildings, and of identifiable activities are relevant aspects. In the depositions, the information sought regards the type of deposition, associated artefacts, and their placement in the landscape. The single finds are not included at this analytical level.

The micro level: practice analysis of application and use

In contexts where the empirical resolution is high enough to warrant a micro-level analysis, I will make considerations of type and placement of locks and keys and what they may have been used for. In burials, the presence, number, and contents of boxes, caskets, and chests will shed light on such aspects. Also, the placement of keys and locks in the grave, for example their proximity to the body, will be addressed based on contextual information. It will also be considered whether keys found in context with locked containers could have operated these items or not. At settlements, finds that may be related to particular spaces and activities within or outside buildings will be of particular interest. Regarding the depositions, it will be further analysed what the contents were and how the action was performed, and what role the lock and key may have played in the deposition. The results will provide information about how locking was performed in life and death in particular instances, which may be compared and correlated with information regarding behaviour, beliefs, and norms, as well as chronological periods and larger social processes.

The choice of contexts for micro-scale analysis is qualitative based on the data available, and will be treated as select investigations into how locks and keys were applied in various ways. The results of the qualitative analysis are not considered generally applicable to Scandinavia in general, or to specific periods, but are intended to establish the range of observable practices in Norway, which functions as a point-of-departure for discussing social significances and various expressions of ordering material and immaterial aspects in Iron Age society.

1.3 Thesis structure

The thesis is divided into three respective parts that encompass the basis of the study, the technological treatment, and the socio-contextual treatment of locks and keys. This chapter opens *Part One: A History of Security*, presenting the topic, objectives, and research questions, the empirical and methodological outline, and considerations of locking mechanisms' potential contribution to knowledge about past societies. A presentation of the research history on locks and keys follows in Chapter 2, structured thematically according to dominant research trends. Chapter 3 establishes the conceptual framework and governing theories applied, followed by a general presentation of the archaeological material and relevant source-critical considerations in Chapter 4.

Part Two: A Technology of Security is made up by three chapters presenting results of the functional study of locking mechanisms and lockable objects. Chapter 5 presents an overview of the things that locking mechanisms secured: containers, doors, and fetters. This provides an ordered picture of how lockable units were constructed and how they could offer security by being locked. Based on this, the classifications of locks and keys in Chapter 6 is presented so that the diverse locking principles connect to how they could secure these items, demonstrating the link between lockable thing and mechanism. After this, the locks and keys and their types are analysed on the macro-scale in Chapter 7, providing a wide picture of how the locking devices changed and spread in Norway during the first millennium AD. One of the main results is the typology of Norwegian locks and keys, which gives a temporally ordered insight into the specific changes in form and function. The chapter is concluded with a comparative discussion of the observed technological developments where the Norwegian material is placed in a larger pan-Scandinavian and pan-European context in terms of social contact and craft-working.

The third and last section, *Part Three: A Practice of Security*, encompasses the contextual analysis of the archaeological material, its interpretation, and the conclusions of the study. The occurrences and potential uses of locking devices are studied in Chapter 8, through evidence from depositions, settlements, and burials. This provides a basis for identifying and understanding the practices these artefacts were involved in within the first millennium. Through observations of applications, associations to artefacts, activities, individuals, social roles, and gender, locking is analysed at multiple levels as a socially entrenched technology with various material expressions and social touching points. The results are discussed and interpreted in Chapter 9, where I argue that how locks and keys worked as security devices was anchored in their technological make-up, in material and human agency, in socially defined values and norms, in practical and social purposes pertaining to order and ownership, and in wider structures of social order and organisation. The main results and conclusions are summarised in Chapter 10, which also highlights aspects for future perspectives.

1.4 The permanence of small things

Inspired by the work of James Deetz (1996 [1977]), Ingvild Øye has expressed the valuable potential present in 'small things' for studying the past. In the foreword to the publication *Small Things Forgotten: Locks and Keys & Board Games*, Øye (2013:7) states that small things 'ignored and forgotten' are suitable for elucidating the 'intricacies of daily life but also connect to the larger stories'. Regarding the emerging medieval town of Bergen, she emphasises that while important for illuminating the everyday life of past people, small things can also relate to the broader cultural processes in an expanding international trading centre, such as shifting social and cultural conditions, lifestyle, economy, and security. I agree with this view, and argue that it is equally valid for the Iron Age societies of Scandinavia. The processes Øye refers to were also present in the previous centuries, and I believe small things are just as valuable for non-urban contexts and longer time periods. The Scandinavian origins for keys and locks lie in the Iron Age; this is also where the foundation for their further development in the Middle Ages is established. They should therefore have significant potential for the study of social processes in the first millennium.

Furthermore, I would like to emphasise Øye's point that it is modern researchers who have 'ignored and forgotten' keys and locks, not the people of the past. Paradoxically, many things from the Iron Age that are remembered as important or valued today were relatively quickly 'forgotten'. Wide ranges of clothing and jewellery passed in and out of fashion; craft knowledge and techniques, building customs, funerary customs, religious symbols, objects of power; these were all mostly transformed, disregarded, or lost during the Iron Age or the turn of the first millennium. However, many of the small things have endured: pottery, tools, and other artefacts – including keys and locks. Some have changed in form and decoration, some have been altered slightly in function or have been attributed other significances, but they are still around much in the same way as a thousand years ago. From their Iron Age beginnings, keys and locks have maintained a significant part of their physical form and even more of their practical use (as will be demonstrated), and have shown a relatively steady presence in the archaeological record. While nobody fights with swords anymore (except recreationally), nearly all of us still use keys and locks on a daily basis – in renewed metal forms as well as digital counterparts – which have become highly important for modern lives and societies.

Locking mechanisms have maintained their relevance for close to two thousand years in Scandinavia – and for much longer on a European and global scale. This fact illustrates the permanence of certain small things, and potentially of the ideas and values attributed to them. Why they have remained so present and stable for such a long time is an interesting question. As this study will address, I believe part of the answer lies in the nature of these small things, namely as their role as security equipment, as manifestations of boundaries and property, and regulators of human behaviour and acceptable social conduct. Being tools for performing the action of locking and securing has arguably ensured their continued presence and relevance.

Keys and locks are one of the oldest Ancient technical inventions that modern-day societies not only use, but have become utmost reliant upon. However, its permanence has affected its current understanding. As the following chapter illustrates, the continuity of locking has influenced the ways locks and keys have been approached scientifically, in that Iron Age locking practices largely have been understood from medieval and modern standing points rather than from their preceding and contemporary conditions. There is an inherent danger of simplifying, misunderstanding, or misinterpreting things believed to be immediately understood. It is possible that because locks and keys are so familiar (and because the medieval literary sources have been so authoritative) that their social significance has been regarded as obvious or known, causing alternative perspectives to remain unexplored.

2. From types to symbols: a research overview

In this chapter, I present and consider the main perspectives in the discourse on locks and keys within Scandinavian archaeology, building on earlier research. A few research historical overviews have been assembled in later years (e.g. Arwill-Nordbladh 1990; Berg 2013, 2015; Cadamarteri 2011; Karlsson 2009; Nordström 2016; Pantmann 2006; Reinsnos 2013; Tomtlund 1972). While not wishing to reiterate these, a summary of the earlier and current research is necessary in light of this study's objective of expanding the interpretive spectrum. Through this, I will express my position on earlier research and illustrate how interpretive differences may be bridged and united into a more comprehensive understanding of locking as a past material and social phenomenon.

As has been discussed in recent works (Berg 2013, 2015; Pantmann 2006, 2011), and will be further demonstrated below, the research has long been characterised by a divide between functional and symbolic perspectives, where locks and keys' operation and practical uses primarily have been regarded from typological and contextual points of view, and their symbolic meanings have been argued largely based on later written sources and their presence in burials. As will also be illustrated, this dichotomy is not an absolute, as aspects related to belief, ritual practice, judicial and social organisation, trade and craft, security and ownership have influenced the discourse across this divide. Through a topically structured review, the contributions following descriptive, functional, and socio-symbolic research trends will be presented and evaluated in relation to the questions and objectives of this thesis.

2.1 Descriptive and typological approaches

Research into locks and keys from the Scandinavian Iron Age began with their recognition as archaeological categories in the mid-to-late 19th century. In the early stages of archaeological research, keys and locks were included in many of the national, empirical reference works from the late 1800s, which established rough periodical and typological overviews of the material evidence (Müller 1888–1895; Rygh 1885; Ulfsparre 1874; Undset 1878, 1888; Worsaae 1854). As part of the culture-historical trend in archaeological research of the time, morphological and chronological difference was the main concern in these earliest contributions, and the quality of the overviews varied in terms of dating and classification. A characteristic element of these early works was a dominant emphasis on keys over locks, as the latter was seemingly a less understood and empirically under-recognised category. This investigative trend has prevailed until recent times, where keys have been subjected to academic enquiry and attributed symbolic meanings and social significances to a more significant degree than locks.

Large empirical treatises dominated research contributions until the 1960s, and sporadically until the 1990s. Many were descriptive syntheses and publications of excavated materials. If the tools were classified at all, this was often performed based on stylistic and art-historical traits rather than functional ones (e.g. Andrén and Nilsson 1976; Arbman 1940, 1943; Brøndsted 1960; Grieg 1933; Kaland 1972b; Nerman 1969, 1975; Petersen 1951; Shetelig 1912; see also Ulfhielm 1986). Physical properties and decorations were emphasised, and the keys were largely studied separately from the locks they operated. The current value of these contributions today is mainly their empirical studies, displaying the variability of locks and keys, their forms and decorations, and their distribution within different contexts, areas, and time-frames. For the Norwegian material discussed in this thesis, Petersen's (1951) synthesis in *Vikingetidens redskaper* remains the largest work on locks and keys from the Viking Age, and is along with Rygh's *Norske Oldsager* (1885) the central reference works for Iron Age Archaeology. However, from an interpretive stance, there is little consideration of social significance beyond their practical abilities to lock and open. However, parallel to these descriptive and morphologically oriented efforts, a range of researchers addressed and investigated locks and keys from operational, utilitarian, and social perspectives.

2.2 Functional perspectives

Research into the operational properties of locking mechanisms has been an ongoing process since the late 1800s (Hildebrand 1875; see also Pitt Rivers 1883). Knowledge of their mechanical and technological variation has been broadened gradually at an uneven rate depending on the discovery of new finds and fluctuations in academic interest. Being somewhat of an empirical niche, much of the variation has been uncovered piece by piece, mainly regarded in isolation and without overarching research questions.

The earliest developments in the Early Iron Age has been largely under-investigated, while the Late Iron Age, particularly the Viking Age, has received most of the attention. For the Roman and Migration Periods, the few functional studies are primarily from the early 20th century (e.g. Almgren 1914; Almgren and Nerman 1923; Ilkjær 1993a, b; Müller 1911; Nerman 1935). These have contributed important insights into the material evidence from when locks and keys were introduced to Scandinavia, and the ritual deposition of these in burials and sacrificial contexts. Their occurrence in the Roman Iron Age has been related to contacts with the Roman Empire or Germanic and Slavic areas around the Baltic (e.g. Montelius 1919:207; Müller 1888–1895:20; 1911:24–26; Roesdahl 1993:217; Tomtlund 1972:7). Other than this, the context and process of introduction has not been investigated, and it remains unclear whether the finds reflect outside import or established production within Scandinavia (cf. Almgren 1955:57–58; Almgren 1914:40; Nerman 1935:17). Apart from brief mentions in certain works (e.g. Kristoffersen 2000:114; Shetelig 1914:24), and my own recent efforts (Berg 2013, 2015), there has been no attention from Norwegian scholars regarding these early mechanisms. Thus, knowledge of types, and of their function, use, and deposition in Norway in this period is very limited. Along with the few, predominantly older works on Swedish and Danish finds, the introduction and subsequent incorporation of locking in early Scandinavian societies is currently an unexplored phenomenon. Publications on materials from areas outside Scandinavia represent important supplements in this regard, particularly for recognising similarities and differences in mechanisms, their chronologies, and their archaeological contexts (e.g. Czarnecka 2010; Jacobi 1974; Kokowski 1997).

Finds from the Late Iron Age are numerous and have been subjected to functional and technological investigations to a greater degree. The dominant part of the contributions has been part of site-specific studies of burial and settlement evidence (Arents and Eisenschmidt 2010a, b; Arwidsson and Thorberg 1989; Eisenschmidt 2004a, b; Grieg 1928; Madsen et al. 2014; Roesdahl 1977; Stolpe and Arne 1912; Tomtlund 1978, 1989; Ulfhielm 1989; Westphalen 2002). Studies directly concerning the topic of locks and keys have been less common, and have predominantly discussed evidence from specific contexts, sites, and smaller regions (e.g. Gustafsson 2003, 2005; Jeppesen and Schwartz 2007; Karlsson 2009; Reinsnos 2006, 2013; Tomtlund 1970, 1972). At present, Bertil Almgren's (1955) study of keys from Scandinavia and North-Western Europe is the only large-scale analysis that incorporates functional perspectives.

Select works on medieval mechanisms have included earlier finds and have provided useful comparative evidence (Berg et al. 1966; Blomqvist 1941; Cadamarteri 2011; Crabb 1971; Grieg 1933; Homman 1966). Again, publications of materials from outside Scandinavia have contributed to place Scandinavian finds into a wider context (e.g. Egan 2010; Holwerda 1930; Jacobi 1897; Kessler 1932b, 1934; Kivikoski 1973; Kudravtsev 2012b, 2016; Kurasiński 2002; Linlaud 2014; Marschalleck 1978; Ottaway 1992, 2020; Ottaway and Rogers 2002; Steuer 1982). In this study, knowledge about finds from nearby and more distant areas constitute an important basis for discussing aspects such as urbanisation, local/regional production, contact, mobility, exchange, and import (e.g. Almgren 1955; Tomtlund 1972:7–15).

For both the Early and Late Iron Age, explaining the mechanical properties of locks and keys has been undertaken with varying levels of technical detail and for different purposes. Classification and chronology have been at the basis of them all, representing a shift away from stylistic and morphological ordering towards functional and use-related ordering of the archaeological categories. As many of the contributions were part of empirical syntheses, their interpretive depth was somewhat limited. The independent and specific studies on locking devices allowed for more problem-oriented approaches and theoretically governed analyses. As a gathered corpus, they represent the existing knowledge about the material expression and variability of mechanisms, in which the function of the artefacts is fruitful in exploring different archaeological contexts and wider aspects of society. Among the topics raised in interpretations are: burial custom and ritual practice, everyday life, and the afterlife (Grieg 1928; Müller 1911; Roesdahl 1977); cultural contact, exchange, and transmission of craft knowledge (Almgren 1955); technology and production (Gustafsson 2003, 2005; Karlsson 2009; Söderberg 2014; Tomtlund 1970, 1972); ownership, security, and socio-judicial norms in the Iron Age and early Middle Ages (Andrén and Nilsson 1976; Blomqvist 1941; Cadamarteri 2011; Madsen et al. 2014; Reinsnos 2006, 2013).

An aspect related to operational function is utilitarian function: what the locks and keys protected, and why. While the artefacts that were lockable (i.e. doors, chests, etc.) are rather well known, the entities that were protected by these implements have been less investigated. Locked containers and spaces have been discussed in terms of burials (e.g. Arwidsson and Thorberg 1989; Eisenschmidt 2004a; Grieg 1928; Müller 1911), houses and specialised buildings (e.g. Eriksen 2019; Hedenstierna-Jonson 2015; Karlsson 2009; Nordström 2016), and votive depositions (Lund 2006). If it was at all possible to determine what objects rooms and containers held, the items were listed and largely understood in terms of storage and personal property, and occasionally of social identity and ritual practice (see 2.3 below).

A wider comparative study of locked entities and contents is currently lacking. The contextual, geographical, and temporal variation in what was locked, how, when, and where, is mostly unknown. Thus, questions as to why things and places were locked – common reasons being privacy, safety/security, ownership, wealth, and status – have been addressed on general basis and less on evidence of past practices. Rather, the emphasis has been placed on non-utilitarian forms of function, symbolic uses, and representational applications in society, based on medieval laws, sagas, and Eddic poetry, and on selected archaeological finds. For this study of Norwegian materials, I aim to present an overview of the utilitarian functions of locking devices, discussed in light of relevant comparative materials, in an attempt to establish a foundation for understanding locking practices in the Iron Age. From this, it will be possible to consider how needs and desires for security was expressed, and how it affected and was affected by social conditions and transformations. As it will encompass material evidence from secular and ritual contexts, as well as textual sources of legal norms and attitudes, this understanding will enable connections to be made between functional uses and representational, socio-symbolic significances such as those presented below.

2.3 Socio-symbolic perspectives

The discourse on social and symbolic aspects of locks and keys is complex. One could even argue that it consists of several connected discourses. Topics discussed involve social status, wealth, and power; ritual and cultic beliefs and practices; gender, identity, and social roles; judicial practice, rights, and responsibility; access, security, and ownership. All of these are intertwined in the archaeological interpretations – and may also have been so in the past. A thematic review is therefore challenging, and the following overview represents what I consider to be the main topics within a largely convoluted debate. One of the characteristics of this debate is that interpretations of archaeological finds are often argued based on the contents of later written evidence. Another is the prominence of keys; while locks primarily have been regarded as representing a judicial boundary, the key has been attributed a wide range of representational significances as an artefact related to opening and closing. Some have been related to the ordering of society through norms and rules; others have pertained to defining the identity and status of individuals as well as their rights and responsibilities.

2.3.1 Protection, security, and ownership

The point of departure for many interpretations of locks and keys has been their practical use as security devices, although mainly indirectly. Their role as physically protective implements has largely been seen as a given. The level of attention to practical applications has varied, but aspects concerning administrating access and representing protection and security make up a red thread that unifies the different perspectives, as I will demonstrate.

When security is discussed, it has primarily been related to ownership and protecting things and spaces considered private and personal (e.g. Andrén and Nilsson 1976:399; Arwill-

Nordbladh 1990:258-259; Edgren 1997; Eriksen 2019:36), but also, familial and possibly group-based/communal (e.g. Gustafsson 2005:22; Hedenstierna-Jonson 2015:78–79; Nordström 2016:71–72). That locking devices were transformed and utilised in response to changing social conditions has been addressed in several works, particularly in later years (Blomqvist 1941; Cadamarteri 2011; Madsen et al. 2014; Roesdahl 1993). In his study of locks from Lund in Skåne, Sweden, Ragnar Blomqvist (1941) emphasised protecting possessions as one of the most important concerns of both the individual and the society, illustrated by the long and extensive history of locking mechanisms. In his view, the technological development of locking mechanisms is an expression of protective strategies, mirroring the reflexive relationship between attack and defence tactics and measures (Blomqvist 1941:92).

In line with this thinking, need for security has been regarded as reflecting mistrust within communities and taking precautions against breaches of social norms (Gustafsson 2005; Hildebrand 1883:128–129). Diminishing risk of loss and theft of important resources, such as food, by locking rooms and chests has been discussed in light of rural settlement evidence (Nordström 2016:71). Correspondingly, early evidence of doors has indicated that locking doors may have emerged with the establishment of urban settlements, where living in close proximity led to elevated needs for controlling access, safety, and privacy (Eriksen 2019:36). Finds of broken locks and keys, in burials as well as central places and towns, has been seen in light of medieval law formulas stating the punishment of theft. The evidence has been taken to show that transgressions against locked goods and spaces did happen, making it necessary to put preventive security measures in place and to enforce them through normative and penal efforts (Cadamarteri 2011; Gustafsson 2005; Madsen et al. 2014). Broken locks in burials have also been regarded as signs of break-ins (e.g. Blindheim and Heyerdahl-Larsen 1995:102) and more symbolically to reflect ritual actions where broken (i.e. 'dead') artefacts that could no longer be used were deposited, or where they were intentionally destroyed in the ritual (Gustafsson 2005:23; Tomtlund 1972:37–38; 1989:133).

Questions about locks and keys' ability and success in preventing transgressions against places and property have been raised, and whether some have been purely symbolic rather than functional (Aannestad 2004:73; Arwill-Nordbladh 1990:256; Gustafsson 2003:17; Kristoffersen 2000:133; Tomtlund 1972:11). It has been argued that the locking itself may have been more important than the physical strength of the lock; judging from their often fragile construction, locks may have functioned more like a seal than an impenetrable barrier, which would trigger certain consequences and responsibilities if broken (Gustafsson 2005:22; Madsen et al. 2014:317).

Scandinavian provincial laws are oft-cited sources for the judicial importance of locking in the Early Middle Ages. Some of these stated that theft of locked goods was more serious than that of unlocked goods, and it was further incriminating if the thief had locked the goods in their own house or chest (Berg et al. 1966:49; Carlsson 1942:84; Gustafsson 2005:22; Madsen et al. 2014:265; Roesdahl 1993). Several laws also described the penal consequences for thieves and for so-called ‘key-holders’ in cases of theft, who could be subjected to economic or corporal punishments (Carlsson 1942:84; 1967; Frimannslund 1967). The laws portray the importance of keys as judicial symbols for personal ownership and property rights, embedded in social customs of medieval society (Aannestad 2004:76–77). Presumptions that such norms and rules existed in the Iron Age is based on the notion that the laws had roots in older judicial systems (Aannestad 2004:76; Eriksen 2019:159, see also gender debate below; Madsen et al. 2014:317).

What is less present in the discussions on locking and security is a nuanced approach to what ownership and security entailed and how they were defined in the Iron Age. The current perspectives are rather static, where the presence of locks and keys are regarded as measures against theft and intrusion, but not contextualised further. There are currently none who have questioned if norms regulating possession and ownership in the first millennium were different from those of the second, or how the legal attitudes represented in the medieval laws came into being. Beyond the possible roots of legal practices in the Viking Age, how people related themselves to secured possessions and spaces during the course of the Iron Age is largely overlooked, which is why it is one of the main topics of this study. As illustrated by the works cited here, aspects of past locking actions and motivations may be divulged from material evidence, and by performing a large-scale and long-term analysis of such practices, I aim to reach a basis for understanding Iron Age concepts of ownership and security, and how these played into related socio-symbolic aspects such as power and status.

2.3.2 Wealth, status, and power

As expressions of protection and possession, the occurrence and development of locking devices has been related to increasing social complexity (Roesdahl 1993:217). Changes in form, function, and deposition has been correlated with periods of increased wealth and hierarchisation in society, larger differences in property ownership, trade growth, and the gradual introduction of monetary economy (Tomtlund 1972:1–2). Rise in portable wealth has been argued to have been accompanied by a desire to display ownership of such wealth (Edgren 1997:43; Reinsnos 2013:17; Roesdahl 1993:217). The presence of keys and locks in richly furnished graves from the Roman Period onwards has been seen as evidence of their close connection to the upper strata of society, and has been involved in defining individual status and identity – primarily in relation to women, but also men (e.g. Aannestad 2004:73-74; Blindheim et al. 1999:127; Roesdahl 1977).

Need for expressing economic power and social standing has particularly been argued in discussions on keys, which have been regarded as being for practical use as well as display (Edgren 1997:47; Roesdahl 1993:217–218). Intrinsically tied to administrating valuables and holding a certain social standing, the key has been considered a symbol of power and responsibility (e.g. Andrén and Nilsson 1976:399; Carlsson 1942, 1967; Kristoffersen 2000). This significance has been further related to opening and closing, to regulating access, and administrating physical and social boundaries (e.g Arwill-Nordbladh 1990; Berg 2013; Cadamarteri 2011; Madsen et al. 2014; Pantmann 2006). The wearing of keys and the performance of locking and unlocking has been proposed to have affected the person's identity, and how personal property was viewed (Nordström 2016). Correspondingly, locks and keys have been argued to have been expensive and exclusive in their own right, connecting symbolic aspects of property rights, wealth, position, and power in their physical expression (Reinsnos 2013:17). However, whether they were exclusively tied to the elite has been questioned, as keys and locks do occur in what may be described as poorer, or less furnished burials (Berg 2013:109; Pantmann 2006:55–56).

According to medieval laws, there was power related to carrying a key. Being a key-bearer was a prominent position in the household, as the person held a significant amount of responsibility and trust (Carlsson 1942, 1967). That key-holder was a social role in the Iron Age has been proposed, mainly in case of women, argued on the basis of keys found in female graves (see below). Keys were also symbols of power within the medieval Church (see also Steuer 1982; cf. Aannestad 2004:76), and in relation to governmental control and rule, as mirrored by customs of transferring keys upon surrender (Carlsson 1942:82; Madsen et al. 2014:318; e.g. depicted in the Bayeux tapestry, cf. Aannestad 2004:76).

A related perspective that has been presented, but has not made a lasting impression on the discourse is the possible relationship between ownership, locking, and freedom. This was first brought to light by Gustav A. Gjessing in his study of thraldom in Norway (Gjessing 1862), later discussed by Eivind S. Engelstad (1944) regarding old Norwegian chests. They referred to a chapter in the Gulathing Law (Ch. 61) about the freeing of thralls, where a male thrall was led to the church, sat upon a chest and given salvation (i.e. set free). Placing the thrall on the chest symbolised the future ownership rights the thrall would be granted when freed (Gjessing 1862). The formula also stated that freedom allowed the man to trade and get married. The chest was interpreted as 'a symbol of the free man', as only free persons had the right to own and store property (Engelstad 1944:223, my translation). In such an understanding, the chests held socio-judicial significance which was tied to the person's status and rights in society. One of those rights was ownership, which may have been a condition for being considered a true person. Being granted the right to own transformed a human from being property to becoming an independent individual that could hold property themselves, engage in economic transactions, and establish a family through marriage (which in turn would activate inheritance rights). A similar significance has been proposed in the case of female Viking Age burials, in which the key and chest may have indicated some form of independence and integrity connected to the individual, that was social rather than economic in character (Arwill-Nordbladh 1990:259; Edgren 1997:46–47). These are interesting examples of how chests and keys could be involved in personal, socio-judicial processes, which will be brought into the discussion (Chapter 9). Here, I will argue that the social and judicial significances were not separated from economic factors, but closely intertwined in them through their roles as security devices.

The present research shows that there are several contextually and temporally dependent aspects of lock-and-key power and significance: economic, ideological, judicial, and political. This is even further emphasised in the research concerning itself with gender perspectives.

2.3.3 Gender, marriage, and social roles

The majority of the archaeological evidence of locks and keys in Scandinavia derives from burials. Discussions of this evidence has centred on the gender of the deceased and their social standing and identities, in which the artefacts – keys in particular – have been interpreted as symbolically reflecting such aspects. The female connection with keys and locking is the most common theme in the discourse, which unites aspects of security, wealth, power, law, and social status into interpretations regarding the secular and ideological significance of Iron Age women.

That keys were symbols of the housewife, of the married woman and her control of the household resources is a prominent and long-lasting interpretation (e.g. Andrén and Nilsson 1976; Arwill-Nordbladh 1990; Berg 2013, 2015; Carlsson 1942; Dommasnes and Hommedal 2016; Edgren 1997:47; Gellein 2007:7; Hildebrand 1883; Holmberg 1852; Kristoffersen 2000; Reinsnos 2006, 2013; Roesdahl 1993; Solberg 2003; Aannestad 2004). The medieval texts mentioned above concerning key-bearers have often been cited; as have law formulas stating that women were 'married to locks and keys', were legally considered married if they had controlled the household keys for a long time, or were 'robbed of locks and keys' in cases of infidelity and divorce (Carlsson 1942; Eriksen 2019:159). The arguments have centred on emphasising keys as reflecting social powers of women and notions of gender and 'womanhood', but also the importance of the economic, judicial rights and obligations that took effect upon entering matrimony. The laws cited are predominantly from the 13th and 14th centuries, but – as mentioned above – are considered to contain norms and rules from previous periods as part of a legal and cultural tradition. Primarily, these debates have regarded the Viking Age, but the medieval analogies have also been applied for the Migration period (Kristoffersen 2000:132). Keys belonging to the married woman in Roman laws and customs have been included in the argumentation (Arwill-Nordbladh 1990:257; Eisenschmidt 2004a:216; Eriksen 2019:159); as have comparisons to 5th–7th century female graves in Britain and Central Europe (Dübner-Manthey 1987, 1990; Kristoffersen 2000; Steuer 1982:122, 130).

In addition to laws, keys as part of the bridal attire in the Eddic poems *Þrymskviða* and *Rigsþula* are commonly referenced sources for its symbolic importance in weddings, and in social transformations, sexuality, and fertility (cf. Aannestad 2004). Symbolic locking and unlocking has been connected to childbirth and women in labour, as a means of easing the delivery in opening the birthing canal (Arwill-Nordbladh 1990:257, with references; Eriksen 2019:159; Gräslund 2003). Its symbolic and liminal powers have also been related to Freya as goddess of fertility, ruler of mythological farm *Folkvang*, and keeper of the dead (Arwill-Nordbladh 1990:257). Similar notions are prominent in discussions of the Christian significance of keys, which is also related to life and death. Following medieval belief, Virgin Mary would lend her keys to relieve childbirth, and her cult is believed to be built on the cult of Freya (Holbæk 1966:368; Näsström 1998:184). In the Bible (Matt 16:18–19), Jesus dedicated Saint Peter's the keys to the Heavenly Gates, and depictions of Jesus, Peter, and other saints with keys is prominent imagery in early Christian iconography (cf. Gellein 2007:56; Steuer 1982). These sources have spurred discussions whether keys were early signs of Christian belief and mission in Scandinavia, were used for accessing the afterlife, or were worn as pendants similar to crucifixes and Thor's hammers (Almgren 1942; Gellein 2007:57; Nancke-Krogh 1992; Ulfhielm 1986:1).

The application of archaeological evidence for the interpretations mentioned is variable. The approaches generally consist of qualitative and/or quantitative analyses of burials interpreted as female and male, in which the presence, number, and placement of keys and locks/containers have been considered. A few have implemented differentiations of key and lock types and functional considerations. Several studies have shown a predominance of keys in female graves over male graves (Berg 2013:98; Dommasnes 1976; Eisenschmidt 2004a:215–216; Gellein 2007; Kristoffersen 2000:116–115; Petersen 1951:482; Reinsnos 2013:73–74, Fig. 5.2; Ulfhielm 1989:128–129), however, the degree of female dominance varies temporally and geographically (Berg 2013:98–99). The gender distribution of chests and caskets is less investigated, and predominantly from Late Iron Age evidence, but seems to follow a largely similar tendency (Arents and Eisenschmidt 2010a:168; Arwidsson and Thorberg 1989:Tab. 23.1; Berg 2013:84–85, Fig. 71; Madsen et al. 2014:318; Reinsnos 2013). Padlocks have been proven to occur in various gendered burials, present in both male and female, as well as child and undetermined burials (e.g. Arbman 1943; Tomtlund 1989). Keys have also been identified in children's graves (e.g. at Birka, Ulfhielm 1989:129), but their role in such contexts has rarely been discussed.

Contextually, the proximity of keys to the body has been argued as a sign of the deceased wearing them as part of the dress (e.g. Arwill-Nordbladh 1990:258; Kristoffersen 2000:114–116; 2006:28–29; Madsen et al. 2014:266; Aannestad 2004). Worn as on display, both single keys and key chains have been considered representative of domestic authority and of the housewife role in female burials. A similarly socio-symbolic significance has not been argued on behalf of men, as the presence and meaning of keys in male graves often has been omitted from these discussions (Berg 2013; 2015:129; Pantmann 2006:28-31). Seemingly wider distance between the body and the key and/or container has been assumed to signify a weaker symbolic link between men and locking/keys, and the key has been considered a largely practical implement related to tool chests and personal property (Pantmann 2006:29-30; Wallander 1989). Also, the notion that men could only carry iron keys, while decorated bronze keys belonged to women has been argued to indicate that men's use of keys was less symbolic (Aannestad 2004:79). Correspondingly, the position that keys could signify men holding domestic power and control of household possessions is rare (Edgren 1997:47).

This interpretive pattern is also visible in the approach to chests and caskets. In certain Viking Age burials, lockable caskets and chests have been thought to have belonged to female graves, and unlockable ones to male graves (Arwidsson and Thorberg 1989; Eisenschmidt 2004a:211), bringing the idea that locking possessions was not as important to men as to women (cf. Pantmann 2006:30; Aannestad 2004:75). This notion rests on a misunderstanding of how different types of containers were locked, as these ‘unlockable’ caskets had clasp hasps – which could be secured by padlocks (6.3.5). Similarly, interpretations where keys have been considered less functional and therefore mainly symbolic are valid in some cases (e.g. Tomtlund 1972:11, Fig. 14, VII:14), while others have been suggested as non-functional on the basis of their material being bronze/silver or iron, on the presence or lack of decoration or signs of use-wear (Arwill-Nordbladh 1998:142; Kristoffersen 2000:114; Nordström 2014:299; Pantmann 2006:57-58; Steuer 1982:195–196). Generally, the presence of chests and caskets in male graves have been understood as reflecting their profession (for example smith), while in female ones they reflected social status as married, head of the household, and female identity.

Despite the evidence of a relatively consistent presence of locks and keys in non-female contexts (Berg 2013:75, 80–82, Figs. 67 and 69, 2015:130, Tab. 9.3), the majority of interpretive perspectives has centred on the female. The connection between women and keys has been argued so strongly that it has been considered a gendered artefact category (e.g. Jesch 1994:25; Roesdahl 1993:218). The problems regarding this preconception has been a topic of debate in later years, as has the view of the key as a housewife symbol, which has been argued to rest on poor empirical foundations (Arwill-Nordbladh 1990:257; Kaland 2009; Pantmann 2006, 2011), as discussed in Berg (2013, 2015). Points of contention have been the dominance of later written evidence in interpretations of archaeological materials and source-critical issues connected to the specific texts used. This debate will not be repeated here, but gender is an underlying factor that will run through the study and observations made will hopefully give renewed perspectives that may propel the discourse on gender and locking forwards.

There have been some efforts at nuancing the discourse on locking, gender, and social roles in Scandinavia. The possibility that women with keys were involved in trade has been argued based on Viking Age burial evidence (Stalsberg 1991), and in a recent re-evaluation of the Late Iron Age graves at Birka in Sweden (Nordström 2014). Keys in female burials from Viking Age Denmark have also been critically readdressed (Pantmann 2006, 2011), in addition to my own analysis of Iron Age keys from Eastern Norway, in which it was argued that keys were boundary markers that signified social distinction and power through their technical function, across social genders (Berg 2013, 2015). In these works, the material evidence was reinterpreted from aspects of rights and responsibility, status and power (as mentioned regarding wealth and power above), and roles within and beyond gender, where the key could have a wide range of meanings and significances.

Completely novel to the discourse on gender and social roles is the warrior perspective, discussed based on evidence from Birka in Uppland, Sweden. Keys from the Birka Garrison carrying decorative motifs of diving falcons and operating box-shaped padlocks are suggested to have been markers of rank within the warrior group, signifying the warriors' belonging and position within the social structure (Westerholm 2001). Based on the same archaeological material, Charlotte Hedenstierna-Jonson (2015) has argued for three levels of possession within this martial community, manifested in the ritual depositions of personal objects before the construction of the garrison hall; the locking of weapons and equipment in chests lining its walls with custom-made locks and keys marking responsibility and ownership; and the warrior identity signified through the diving falcon motif carried on keys, sword sheaths, and brooches. The locks and keys are interpreted as social boundary markers and symbols of martial identity, providing information about the organisation of the garrison and the norms governing its warrior-soldiers. The connection between locks, keys, and the mobile lifestyles of people such as warriors is one that will be further discussed in this study. The concept of possession – of spaces, things, and immaterial entities – will also be given a prominent place in how locks and keys are approached within a framework of security and ownership.

The gender debate has been somewhat more concerned with defining social roles and statuses than with understanding locks and keys themselves. The distance established between definitions of men and women may have been more harmful than fruitful for both the understanding of past gender and past locking practices. For this work, gender is highly relevant, but it is treated as one of many factors that played into how locks and keys were intertwined in Iron Age society. Just as important is how people moved about their world, who they met, and what they wanted to achieve.

2.3.4 Sacrifice, travel, and politics

Few contributions have shed light on locks and keys found in contexts that were not burials or settlements. Sacrificial situations constitute one such context, which has been addressed by

Julie Lund (2006) in her discussion on water-deposited tool chests from the late Viking Age. She does not regard them as accidental losses, but as intentional offerings that were part of a wider ritual practice. Their deposition could have been related to religious, judicial, or political meanings, potentially connected to the mythology of smiths and transformation processes (Lund 2006:330–331). Lund has also described Viking Age deposition of keys along with weapons, animals, and other artefacts by fords and bridges in Ukraine, Poland, Britain, and Denmark, which she interprets as ritual activities related to journeys and crossing over boundaries (cf. Androshchuk 2002:11–12; Lund 2005:110, 117–118; Wilke 1999). The specific role of keys and caskets in these contexts are not explored, however, and I will see whether the Norwegian finds may provide some new insight.

From the Early Iron Age, there is only one case of keys being found in a sacrificial context: Illerup Ådal in Eastern Jutland, Denmark (Ilkjær 1993a). A box with a sliding lid was found at a similar sacrificial site, at Vimose on the island of Fyn, but no lock nor keys were documented (Engelhardt 1869). Consisting of at least three main depositions of intentionally destroyed weapons and battle equipment, dated between *c*. 200–375 AD, and one smaller from the 5th century, Illerup Ådal has been interpreted as sacrifices made by the victorious locals over defeated intruders from the north (Ilkjær 2000). Five keys were found, all of the same type, and all belonging to the first main deposition dated *c*. 200 AD (Ilkjær 1993a:325; 2000:32). The two keys that could be contextually related to other artefacts were associated with personal equipment. In this context, the artefacts are considered to have been the belongings of the invaders, thus, reflecting lives and things of an army on a war campaign. As such, these finds provide important insight into the role of keys and property in itinerant, martial life.

In extension to this, it is a largely unexplored area how these artefacts were involved in travel, both on land and at sea. The latter is particularly important for the Late Iron Age, in which long-distance raiding, trading, settling, and exploring happened by ship. However, beyond the chests from the ship burial at Oseberg in Tønsberg, Vestfold, Eastern Norway, and one chest from the harbour of Hedeby near Schleswig in Northern Germany (Kalmring 2010a, 2010b), there is limited evidence for the use of so-called ‘ship chests’, or for how things and resources were stored and secured on voyages at home and abroad. This is another topic that is in need of attention and will be explored in more detail.

To what extent locks and keys themselves travelled has been recently been discussed in terms of gift-exchange. That caskets may have been part of establishing alliances between royal families of Northern and Western Continental Europe in the late 10th century has been suggested by Else Roesdahl (2010) for the Cammin and Bamberg caskets. These exclusive, Mammen-style decorated artefacts were potentially commissioned by Harald Bluetooth or Sven Forkbeard as elaborate containers for diplomatic gifts exchanged to German and Slav rulers by the newly converted Christian kings (Roesdahl 2010:159-160). Parallels were drawn to other famous finds from the British Isles, like the Anglos-Saxon 'Franks casket' and 'Gandersheim casket', and Irish or Scottish 'Ranvaig's casket'. The latter, bearing the name of a woman named Ranvaig, was likely looted by Vikings and held both secular and clerical functions as a reliquary (Roesdahl 2010:160). Through her discussion of these particular artefacts and their biographies, Roesdahl opens up for perspectives of locked containers and keys taking part in long-distance travels and campaigns; establishment of alliances through marriage and gift-giving among elites, aristocracy and royalty; and power-political developments involving Christianisation.

The research mentioned above, in addition to burials with weapons, imports, and trade-related artefacts spanning the entire first millennium, shows that there is a body of evidence that is well suited to be analysed comparatively in search of additional understandings of locking and security in Scandinavia. So far, the discourse on locks and keys have mainly been placed in a domestic and local/regional sphere, but the function and mobility of these artefacts are relevant elements in discussing their possible roles in more wide-reaching social contexts.

2.4 Back to the start: a way forward

In this chapter, I have presented what I consider to be the main themes of the discourse on locks and keys, the interpretations within them and on what evidence they have been argued. The presentation shows that there is a wide range in how Iron Age locks and keys have been approached and understood. One notable point, here, is that practical function – for instance, if a key opened a box or a door – is often absent in these explanations. Another is that aspects related to security and ownership have been studied to a limited degree, despite being an often-stated basis for arguments of socio-symbolic significance.

How locking was related to the administration of people's relationship with possessions and spaces has not been analysed from an Iron Age perspective, but has been stated based on medieval sources and potentially modern preconceptions. In connection to my introductory remarks regarding the permanence of small things and the dangers of interpreting phenomena that one believes is familiar and known, I argue that research on locks and keys has long been characterised by limited attention to how locking practices was situated in the past and present of the actors' mentalities. Evidence from later (written) sources effectively reflects the future of these practices – and only partly so – and should thus rather be used comparatively than as point of departure for understanding earlier times.

Asking how locking may have ordered Iron Age society entails investigating what factors enabled locking to be introduced to Scandinavia and what effects its introduction had on the societies that incorporated it (1.1). This entails starting from the beginning, from the point when people in Norway lived without locking devices, without the concepts that from a modern view seem self-evident and ubiquitous. This also entails starting from a theoretical rather than textual basis of understanding; one that enables me to approach locking as something people are able to do, and as they do it, changes locking and people's lives in the process. As is familiar from the present-day, it is difficult (if not impossible) to expect what short-term and long-term consequences the advent of an innovation will have on a society and the everyday. Today, the smartphone is one of our main security devices, which enables access to and control over our information and communication channels, our personal economy, and our very identities and personal details; arguably, a development far beyond the imagination and conception of Alexander Graham Bell (1847–1922). The example of the telephone illustrates how things and the tasks they do for people may change how people act and live in comprehensive and unforeseen ways, and how entangled things and humans are, from the personal to the societal level. It is from such a perspective that I outline my conceptual approach to locks and keys: as things of agency entangling with Iron Age people, performing tasks of locking and, thus, contributing to altering how their lives were lived and their societies were organised.

3. Locking defined: a conceptual framework

'Consider things, and you will have humans.
Consider humans, and you are by that act interested in things. […]
Do technology, and you are now a sociologist.
Do sociology, and now you are obligated to be a technologist'
– Bruno Latour (2000a:20) 'The Berlin key or how to do words with things' –

The quote by Bruno Latour cited above illustrates well the inseparable nature of humans and things, of technology and the social. It highlights both the challenge and the obligation of those engaging in social sciences, such as archaeologists, to actualise this connectedness. In this study, I explore the reflexive relationship between things and humans in terms of technological development and social transformations through locks and keys, and in the following chapter I present a conceptual framework that may enable me to do so. Fittingly, it is comprised by concepts that have been formulated within social sciences, and by archaeologists theoretically engaging with technology and social theories.

The first two parts of the chapter outline the basic theoretical standpoints, in which locks and keys are approached as 'things' in a human-thing entanglement (3.1) and locking as a social practice (3.2). It is then explored how ownership, possession, and property may be defined in terms of locking (3.3). Following this, the concept of security is defined (3.4), and how locking mechanisms are approached as boundaries created and upheld by human and material agency (3.5). Understanding the motivations behind locking is discussed in terms of value, how people appreciate and connect to things and places (3.6), leading into how concepts of social order, morality and norms, trust and discipline are approached as a basis for connecting individual performances of locking with social structure (3.7). In the latter part of the chapter, I move on to methodological perspectives, revisiting the concepts of typology and classification for the study of locking practices and change, and how function and agency of locking devices is approached through object design and bodily movement (3.8).

3.1 Entanglement, dependency, and 'sticky' technology

The first central concept is that of entanglement, as formulated by Ian Hodder (2012, 2016). Entanglement theory is part of the recent theoretical contributions and debates in humanities that are commonly called 'the material turn', characterised by a renewed engagement with materiality and the inseparable connectedness between humans and things (e.g. Hicks 2010;

Ingold 2007, 2012; Latour 2005; Miller 2005; Olsen 2003, 2010, 2012; Olsen et al. 2012; Webmoor and Witmore 2008). My preference for Hodder's perspectives in this work rests on his emphasis on the complexity and 'messiness' of human-thing relationships, acknowledgement of the asymmetrical and unforeseen, and inclusion of ownership in understanding human relationships to things (see 3.3).

Entanglement is defined to describe, analyse, and explain human-thing relationships, in which human lives and material things' dependence on each other takes centre stage (Hodder 2016). The term and its related concepts, such as interdependency and entrapment, are considered useful in providing a perspective of understanding for how human-lock relationships may have developed, particularly in terms of reliance. It is well-combined with the other theoretical perspectives applied here concerning human and material agency, social practice, and social order.

Hodder (2012:27) argues that humans only exist in their relation to things. Things are a precondition for humanity, thus, all human action is inherently done with things. This will be explored further concerning social practice in 3.2 and social order in 3.7 below. So what are things? For Hodder (2012:7), the term 'thing' is considered partly overlapping, but not synonymous with 'object', because only some things are objects with a relatively stable form. Rather, things include words, thoughts, institutions, events, and materials, that exist as contained entities defined in a certain way, having duration and presence. To illustrate his point, philosopher Martin Heidegger's (1971:176) example of a jug is used. The jug is earthen materials 'brought to a stand', used to hold and pour liquid, quenching thirst or be a libation to the gods, thus connecting humans, gods, earth and sky. With the jug example, Hodder (2012:8) illustrates how the 'thingness' of things resides in how they connect and gather matter, energy, and information. While a scientifically 'objective' study requires the jug to be measured, categorised, and broken into components, exploring its existence as thing requires situating its study within a broader approach that focusses on how it gathers humans and non-humans (Hodder 2012:9). From this perspective, understanding things are not only reliant on what they are, but on what they do, as will be a recurring point in this chapter and the study in general.

From an entanglement perspective, human relationships with things are more than networks and symmetrical relations, they are often asymmetrical, leading to 'entrapments' on pathways and trajectories which it may be hard to escape from (Hodder 2016:13). This is due to an overall interdependence between humans and things, where humans get caught 'in a double-bind, depending on things that depend on humans' (Hodder 2016:4–5). Human dependence on things is defined as both being enabling as well as contingent and constraining, in that things allow for humans to live and lead human lives, while also determining and delimiting the abilities and possibilities for individuals and societies to develop (Hodder 2012:17–18). Thus, entanglement is the dialectic of dependence and dependency between humans and things (Hodder 2012; 2016:5). It produces and delimits human action, and may cause tensions between humans and things, leading to entanglements that are unexpected and difficult to change or escape.

In concrete terms, this perspective entails that humans making choices, such as technological changes and innovations, cannot fully see where those choices will lead, in both the shorter and longer term, as the desired consequence is only one of many unforeseen ones. The trajectory that follows ideas, choices, and actions both enables and constrains how human lives and societies develop, as some possibilities arise and others disappear. Through human-thing interactions alternative trajectories become impossible ones, certain developments cannot be reversed, and amendments generally involve additional choices, things, and consequences.

Within entanglement, this is closely tied to the instability of things. The material world is, as formulated by modern physics, unstable – it changes, falls apart, deteriorates, is lost and depleted (Hodder 2014:21, 24). Because humans are dependent on things, they invest significant efforts into producing and ensuring their stability. This demands organisation and mobilisation of resources, as well as forced adjustments and responses to change. Humans and things are thus entrapped together in the maintenance of material stability, which shapes and changes the lives of both:

> '[…] if humans are to depend on things, they have to get involved in the lives of things, to look after them, repair them, replace them, manage them. But in order to do this, humans need yet more things. And so there is a gradual, relentless inflation […]. Things made by humans are unstable. If we are to rely on them, we end up responding to them; we are drawn along by them in the direction of greater entanglement with more stuff' (Hodder 2014:30).

In this perspective, human-thing interdependence results in an increasing cycle of management by adding more things and human actions.

Rather than seeing humans and things as in a web or network of related interconnections, Hodder (2014:25) argues that it is more accurate to regard it as a historically contingent, dialectic tension of dependence and dependency which takes the form of a 'sticky entrapment'. The 'stickiness' has the implication that entanglements increase in complexity and scale, and become harder to turn back from, leading to directional development and path dependency. In my view, this concept of stickiness is useful in understanding particular phenomena, such as technologies, which once created or adopted becomes entangled into human life. With reference to the introductory statement about the permanence of locks and keys (1.4), a concept of 'sticky' technology is constructive for understanding permanence, relevance, as well as the agency of things and their mediating abilities (cf. Latour 2000a discussed in 3.5).

Approaching locks and keys as part of an inter-dependent human-thing relationship characterised by 'stickiness', allows for investigating how various dependencies may have played into expressions of locking practices and their part in societal developments. Of particular interest is how the introduction and development of locks and keys in Scandinavia changed, enabled, and entrapped people in ways of acting, interacting, and ordering their societies. As emphasised by Hodder (2016:4, 9), many human-human relationships are created for the regulation of human-thing entanglements and conflicts regarding human access to things, for example through normative and legal structures; 'the things with which humans are entangled include ideas, thoughts, emotions, desires, as well as larger-scale phenomena such as institutions and bureaucracies'. This actualises that locking is not limited to an entanglement of humans and locking devices, but that it extends into feelings, norms, ideals, objectives, and actions from an individual to a societal and organisational level. This is further brought in to the concept of social order (3.7).

With reference to Deetz (1996 [1977]), Hodder states that small things can have big effects when compounded by other factors and processes, and argues that '[…] it is only by considering the small-scale every-day practical dependencies between humans and things that the larger-scale transformations can be adequately understood' (Hodder 2016:8). From this standpoint, investigating something as 'small' as locks and keys holds potential for establishing connections between and reaching further understandings of larger social developments. One way of doing this, is to approach locking as a social practice, as human-lock-and-key relationships manifested in actions that have left material traces.

3.2 Social practice: humans and things in action

Practice theory advocates explaining human action and social order through the concept of social practice (Reckwitz 2002:245). In the following it is explored how practice pertains to behaviour, agency, change, and materiality, while the concept of social order is investigated further in section 3.7. Theories of social practice are most commonly known through the works by sociologists Pierre Bourdieu (1977) and Anthony Giddens (1984). From a material perspective, these are almost completely ‘social’ (Shove et al. 2012:23), giving little attention to the role of things in social practices. Therefore, I predominantly include perspectives that to a greater degree incorporate materiality, such as those presented by the sociologists Andreas Reckwitz (2002), Elizabeth Shove, Mika Pantzar, and Matt Watson (2012), and partly also Theodore Schatzki (1996, 2002).

The basis of practice theory is the relationship between agency and structure, where human action is shaped and enabled by structures of rules and meanings, which are recursively produced and reproduced by human action (Shove et al. 2012:3). While humans may act with purpose and consciousness, the processes governing social life is largely considered to reside in the less conscious, routinized activity of daily conduct. This is the conceptual foundation for Bourdieu’s (1977) term *habitus*, as well as Giddens’ (1984) theory of structuration. Through bodily entrenched actions, thoughts, and choices that are formed by practical experience, motivation, and creativity, humans engage with and orient themselves in the world, by which they sustain as well as transform the structure that conditions them (cf. Bourdieu 1977:72–73). For archaeology, this perspective provides a way of understanding archaeological remains as traces of human agency by past individuals, groups, and communities, as well as the societal and physical parameters for that agency. Specifically, it is useful in understanding how everyday routines and rituals may shed light on general and particular structures of societies and histories (Shanks 2005:241).

Social reproduction is at the forefront of practice theory, but social production is equally important, particularly for archaeological questions, as it concerns the relationship between social stability and change. Change is considered to reside in practices, produced by accumulations of individual decisions about how best to act; hence, change is not result of something external ‘happening’ to daily life, but something that occurs through people’s dealings with the everyday (Shove et al. 2012:2–4). As such, a practice-theoretical perspective is in line with entanglement as outlined above, although the latter advocates a more thing-driven and directional form of change. In terms of change as innovation, such as technological, this is considered an ongoing process that happens between producers and consumers (and things), where technical innovations are intertwined with innovations in practice (Shove et al. 2012:11–12). This perspective on change is similar to the concept of ‘technological choice’, formulated by Pierre Lemonnier (2002 [1993]), which has been influential for how I approach locks and keys.

Following Reckwitz (2002:249), a practice is a routinized type of behaviour consisting of several interconnected elements: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion, and motivational knowledge. Shove et al. (2012:14) also operate with similar aspects in their model, but simplified into three elements: materials, competences, and meanings (see Grønnesby 2019 for an archaeological application of this model). Reckwitz envisages practice as a 'block' that depends on the interconnectedness between elements, and which cannot be reduced to any one element. He also regards it as a form of pattern that can be filled out by multitude of 'single and often unique actions reproducing the practice' (Reckwitz 2002:250). As pointed out by Shove et al. (2012:7), this understanding shows that practice endures between and across specific moments of enactment, which is in line with Schatzki's (1996:89) view that practice is 'a temporally and spatially dispersed nexus of doings and sayings'.

From such a perspective, locking is considered a practice consisting of a range of elements pertaining to the body, mind, things and spaces, knowledge and know-how, feelings, and motivations. It entails that while the elements are variable, they still make up 'locking' as an entity that can be recognised and studied. For Shove et al. (2012:14–15), practices emerge, persist, shift, and disappear when connections between elements are made, sustained, or broken. The human agent is the 'carrier' (and the 'carrier out') of the practice, which exists as performances, as routinized ways of doing (Reckwitz 2002:250–251). For Reckwitz (2002:250), practice is a '"type" of behaving and understanding that appears at different locales and at different points of time and is carried out by different body/mind'.

Thus, locking as practice is an entity that can be studied spatially and temporally as something past people have done and understood in various ways. While locking may be observable in different forms of material traces, for example as varied depositions of different lock and key types, these traces belong to the same practice. This is because, in principle, a practice of locking endures as long as there is a human and a locking mechanism to perform it. Importantly though, while constituting a practice, the meanings and significances of the actions, things, humans, etc. of that practice are not uniform. Variability is therefore intrinsic to practices and necessary to accommodate for in their interpretation.

Although human actions are at the centre of practice theory, things are here considered parts of and participants in practices. This is highlighted by Reckwitz (2002:253), who's view is that things enable and limits the bodily and mental activity, knowledge, and understanding. Such a perspective is comparable to that of Hodder's interdependency between things and humans, which opens up for saying that practices are not only humans doing things, but also things doing humans, so to speak, through their material agency (e.g. Olsen 2010; Webmoor and Witmore 2008). Things are conditioned by humans, which are the ones who make, use, maintain and discard them (Hodder 2016:2). However, human action is conditioned by things in that they allow as well as delimit or even force human action.

This may be exemplified by locking a door on a house. A door lock enables a person to prevent others from entering a house when she is not present, providing a measure of safety to the house and that which it holds (see discussion on security in 3.4). However, if multiple people reside in the house, and there is only one key, the household members would need to administer their daily lives in order to manage locking and unlocking. In the event of the key being lost, the door would have to be left unlocked – or one would be forced to break in, if it was already locked. Furthermore, a locksmith would only be able to make changes and innovations starting from locks in existence. Additional conditions would be knowledge and know-how related to making and using locks, motivations, material resources, and so on. In line with the concept of entanglement, social practices are both enabled by and constrained by things and the material world.

Empirically, remains of locks and keys constitute the entrance-point to studying the practice of locking, and the potential behaviours, motivations, and wider social structures that conditioned the practice in the Iron Age. With regards to bodily movements as 'carrying out' practice, a significant part of those involved in locking are discernible in the locks and keys themselves through a recognition of their various functional *chaînes opératoires* (further presented in 3.8.1). Other related actions are manifested in the ways locks and keys are deposited in archaeological contexts and what was locked. Immaterial aspects pertaining to desires and necessities of the individual and the collective are less tangible, but may be gleamed through connecting archaeologically observable actions with notions related to security, boundaries, norms and values, and social order, which are conceptualised later in the chapter. First, it is necessary to address three concepts intimately related to human relationships with things, namely ownership, possession, and property.

3.3 Ownership and possession

Despite a plethora of uses of the terms ownership, possession, owning, and belonging in archaeological writing, ownership in itself has not been an established field of inquiry (Klevnäs 2015b:1-2). The term ownership, it has been argued, has been treated as selfexplanatory by archaeologists (Burström 2015:24), and considered to be a 'slippery, often obscuring concept, widespread but poorly defined in archaeological discourse from prehistory to contemporary studies' (Klevnäs and Hedenstierna-Jonson 2015:viii). While recent years have seen a growing theoretical debate on the relations between humans and things (e.g. Gosden 2005; Hodder 2012; Olsen 2010; Olsen et al. 2012; Webmoor and Witmore 2008), ownership has been problematized to a limited degree, in contrast to the deep engagement with possession in social anthropology (Klevnäs 2015b:11, with references). When ownership and property has been investigated, it has primarily been in terms of land and settlements rather than movables (e.g. Gjerpe 2017; Grønnesby 2019; Herschend 2009; Iversen 2008; Skre 1998; Zachrisson 2017). For non-landed possessions, areas of emphasis have been burials and questions regarding the deceased owning or not owning grave goods (e.g. Barrett 1991; Brück 2004; Parker Pearson 1999), and the topic of personhood and 'inalienable' possessions (e.g. Klevnäs 2016; Lund 2013, 2017; Weiner 1992). However, how ownership and possession were understood in past contexts is rarely specified and explored. Notable exceptions are recent works by Alison Klevnäs (2015a, b; 2016), Nanouschka Myrberg Burström (2015), and Chris Gosden (2015), which alongside the perspectives by Hodder (2012) will form the basis of the conceptual outline applied in this study.

Beginning with the latter, Hodder has defined a basic outline of ownership within entanglement theory. His reason for formalising a view on human ownership of things is that he regards property as fundamental for society, stating that, 'in different ways and to different degrees all societies are based on ownership of things' (Hodder 2012:26). Humans identify with and claim to own things in various ways, leading to the structuring and ordering of society and of individuals in those societies. In the involvement of people in production, consumption, distribution, and disposal of things, society is created and sustained, and forms of society are intimately related to the ways humans handle and transform objects into something meaningful and necessary (Hodder 2012:26).

Following Hodder, ownership itself begins with identification and recognition, followed by appropriation and creating sensory relationships, associations, and memories; by naming and keeping, using over time, collecting, and conserving; by claiming rights of use, buying, or applying force and law to control access. These are considered processes that bring humans closer to things so that humans feel they need them or own them. Other examples of creating ownership and property may be formal giving (as opposed to stealing), labouring, or by societal forces and rules (Hodder 2012:25). Thus, by adding association, recognition, common history, investment of care and labour to material entities, they become things humans have interest in and wish to protect. In becoming property, things are also 'added to' humans and play a part in their lives that they rely on, forming co-dependencies. In this perspective, ownership is an entanglement characterised by relationships with things that may be expressed individually and collectively as 'mine'/'ours' and 'your'/'yours'.

This view of how ownership is created and defined is set in a society in which a move towards property ownership is taken for granted, which is not always the case (Hodder 2012:26, with references), but can be argued to be valid for the Scandinavian Iron Age, as this work will propose. As Hodder's outline of ownership is rather wide, and does not provide the nuance between ownership and possession that this study requires, I will use arguments from the abovementioned works by Klevnäs, Burström, and Gosden, who have addressed the need for engaging with these concepts archaeologically.

From a modern perspective, possessions are intuitively understood as owned, as private property, due to current understandings of what it means to own. Here 'private' is considered 'individual' and property as 'legally owned entity'. Whether or not one is the owner of things in one's possession is socially relevant. Describing relationships with things and entities in terms of owning/not owning and how things came into possession has significance in presenting oneself to others and how others interpret and understand one's life style, family connections, profession, values, and identity.

As has been argued, current notions of ownership has to a certain extent been projected onto interpretations of past relationships between people and objects (Brück 2004:309). Wealth, status, and identity is generally assumed to be expressed through display of personal belongings, and it is rarely questioned if objects were 'personal', or, indeed, what 'belongings' entailed. While it may not be achievable to reach past people's conceptual definitions of these aspects, it is necessary to refrain from assuming a generalised, universal understanding of what it meant to own or possess, or what property meant. This is emphasised by Gosden (2015), who argues that 'our present state of possessive individualism makes it hard for us to understand earlier cultural forms in which the relationships between people and the material world took other forms'. So, how may these three terms ownership, possession, and property, be defined within a Scandinavian Iron Age context? For this study, the following outline is attempted and applied.

Ownership denotes the state or act of owning something, indicating a relationship or power of control on the part of a person or persons over objects, spaces, people, knowledge, and skill (Gosden 2015:215; Klevnäs 2015b:4, with references). Implied in this is that ownership may be individual, communal, group-based, or in a flux between these depending on context. Ownership is considered a legal concept in the sense that it is entrenched in social norms and customs, governing human action and interaction through expectations and consequences. It may be formalised through societally recognised transactions, such as purchase, inheritance, gift-giving, and donation (Burström 2015:24).

Possession is often interchangeably used as meaning ownership, in that possessions are presumed to be owned. However, possession primarily refers to a specific object or entity that someone has, or to the act or state of having. Possession may involve ownership, but does not imply it, as one may be in possession of something without owning it, e.g. by renting, administrating, borrowing, or stealing (Burström 2015:24; the concept of *'besittelse'* in Skre 1998). The examples of borrowing and stealing also illustrate the difference between rightful and unrightful possession. When borrowing one is being lent something and may be granted certain rights by the owner(s), for example of use. However, stealing is taking something without permission, without transference of rights, and depending on the social norms one could risk being subjected to penalisation (cf. concept of transgression in 3.7.1). Additionally, in certain contexts, the term possession may be applied in the meaning of being possessed, inhabited, or taken control over by something external, internal, or indeed, by the possession itself (Gosden 2015, Klevnäs 2015).

Following the above, property is understood as something that is owned or possessed, meaning that control over it is regulated. Property may be controlled individually and non-individually, and it may consist of something material, immaterial, spatial, or object-related. Rather than viewing property as determining exclusive rights to things from an economic perspective (Earle 2000:39), property is considered that which is regulated – by rights created, mediated, and expressed in a range of variable and relational ways.

Rights of control may be defined as liberties and duties to exact certain privileges and responsibilities. As emphasised by the social anthropologist Marilyn Strathern (2011), there are limits and requirements to rights of possession, such as care and maintenance. Owning and possessing property is a balance between having certain possibilities and freedoms while also being subjected to certain expectations and obligations. Rights to own and possess are socially negotiated abilities to exact control over certain properties (things, in the widest sense, as well as people), determined and acted out within social boundaries (Klevnäs 2015b). They are neither exclusive nor constant, and may be communal, or transferred, expanded, and contracted based on situational conditions. As rights are socially entrenched, they may be contested and renegotiated, and vary over time and context.

Thus, ownership and possession are not permanent concepts that represent a fixed state of control or power. Rather, they may be regarded as being relational, developed in networks of humans and things through practice (Gosden 2015:217, with reference to Keane 1997, 1998). As argued by social anthropologists Veronica Strang and Mark Busse (2011:4), ownership is a social action, a ‘set of processes by which people assert and contest rights’. Such an understanding is distanced from evolutionist understandings common in archaeology, where increasing hierarchy is related to a corresponding increase in ownership, possession, and property (Gosden 2015:217, with references). From a perspective of entanglement, more differentiated forms of ownership and possession may be considered part of an increasing interdependency between humans and things accompanied by a more elaborate regulation of such relationships, as will be further discussed in terms of locking.

In summation, ownership and possession may be defined as socially and contextually dependent relations between humans and non-human entities, which are regulated by ethical and normative principles, practices, and social structures (cf. 3.7). Following this, acquisition and loss of rights, transference of property, and so on, are dependent on a range of factors pertaining to the individual and the collective, such as social status, position, profession, gender, kinship relation, ancestral ties, economic situation, and socio-political, religious, or legal system. Thus, in order to further understand the connection between managing property and people’s relationship to it, it is necessary to engage with the concept of security and how it underlies locking in terms of regulating access to and interaction with things.

3.4 Security: managing risks and boundaries

In the field of archaeology, there has, to my knowledge, been no attempt at defining a theoretical concept of security for the study of past behaviours and motivations. However, security in modern society has become a formalised field of scientific research in recent years, which has involved a growing theoretical development (Gill 2006; Smith and Brooks 2013). Some of the contributions to this field regarding terminology and perspectives are useful for archaeological inquiries, as they contribute with a conceptual basis for how security in the past may be approached. In the following, I will formulate a theoretical understanding of the security concept and associated terminology, based on discussions within security science.

According to security scientists Clifton L. Smith and David J. Brooks (2013:6–7), ‘security’ is multidimensional both in concept and application, and without context it has a wide range of meanings. Within a modern understanding, security may be defined on levels of individuals, groups, nation states, and international systems, and have objective, subjective, and symbolic applications (Smith and Brooks 2013, Tab. 1.2). In order for this concept to work within the context of archaeology and Iron Age locking practices, it requires a specified definition.

On a primary level, security would need to function on individual and group levels, and may also have had a relevance on a higher political level, such as chiefdom. It would also need to encompass objective security (efforts in physical protection, such as locks, doors, walls, etc.), subjective security (efforts that affect perceived sense of safety, such as social organisation and government), and symbolic security (efforts that affect attitudes and actions, such as norms and laws). From a basic, pragmatic perspective, security can be considered as crime prevention, secure technology, risk management, loss prevention or protection of assets, but this refers more to one of the functions of security rather than its meaning (Smith and Brooks 2013:7, with references). Raising the concept to a social level, the following definition by Robert J. Fischer et al. (2008:31) is applicable, where security 'implies a stable, relatively predictable environment in which an individual or group may pursue its ends without disruption or harm and without fear of such disturbance or injury'. Within such a framework, locking is one of several means in attempting to achieve such an environment.

This is in line with the thinking of urban historian and security and criminal justice specialist Robert McCrie (2006:21), who regards security as a socially entrenched endeavour that happens in response to risk. In his view, risks constantly change due to new conditions, procedures, and technologies, and security changes in response to such developments. According to McCrie, there are interlinking factors that have evolved to make individuals, institutions, and societies secure, one of which are physical security measures. Of the basic physical security measures, locks are listed alongside protected locations, walls, animals (like dogs), safes and vaults, hiding places, and traps. Here, security is regarded as the overarching goal behind various efforts relating to dealing with risk (i.e. risk management). As such, security entails a form of resilience, which is a capacity 'to prevent, minimize, or prevail in the face of adversity', developed in expectation to foreseeable hardship (Smith and Brooks 2013:35).

So what is risk, and how may it be defined for an Iron Age context? Firstly, risk is ubiquitous, and some degree of risk management is involved in all aspects of daily life (Smith and Brooks 2013:51). Secondly, it is dependent on social context, and understandings of risk as 'good' or 'bad'. As discussed by Smith and Brooks (2013:52), risk may be defined in a range of ways, but may in simplistic terms be considered the sum of calculating probability and consequence, involving both potentials of loss and of gain. As such, it has both negative and positive sides. For locking, locks and keys being literal defence mechanisms, it is the negative aspect of risk that is at the forefront. Locking may be regarded as efforts at preventing something, like keeping people from entering your house, reducing risk of disturbance, conflict, or theft. In this context, risk may therefore be defined as something undesirable that is likely to happen according to certain circumstances and experiences; it is an expected, probable, and unwanted effect. Risk management, therefore, involves estimating likely outcomes and their impacts. Smith and Brooks (2013:55–56) state five main consequences in terms of costs to be defined:

- *financial costs:* economic loss, costs involved in recovering from a realised threat
- *physical costs:* injury, loss of life, production, or labour hours
- *intellectual cost:* loss of intangible value like credibility, goodwill, status, knowledge
- *perceptual cost:* the belief that loss will be more or less significant than it could be
- *implicit cost:* loss of values that are more sentimental than economic, such as gifts, heirlooms, trust, social connections, and reputation

Threat is another concept that needs definition in this context, as threats are a main reason for motivations for implementing security measures. Within the modern security science field, threats are mainly considered to be other people, where the threat they represent consist of their intents and capabilities to inflict harm – or something undesirable. However, there are other non-human threats as well, which are primarily not intentional, but are more than capable of causing unwanted situations and results. Smith and Brooks (2013:65, Tab. 3.7) have compiled an overview of relevant ‘threat clusters’ for the purpose of their field, some of which are relevant for past conditions. Table 3.1 below is therefore a revised overview of possible risks posed by what I call ‘threat agents’, which may have motivated locking in the Iron Age. Here, the distinction between ‘criminal’ and ‘non-criminal’ threats is a construction of degree rather than of past legal concepts. The list is mainly oriented towards the living life and not the afterlife, but some points may be applicable there as well.

Threat agents	**Risk description**
Free people – ‘criminal’	Theft, fraud, robbery, burglary, assault, vandalism, violence, murder, kidnapping, extortion
Free people – ‘non-criminal’	Accidental/intentional removal and/or destruction, unwarranted borrowing, invasion of privacy, disruption of order/activity/peace
Unfree people – criminal?	Running away, causing damages, committing transgressions, suicide
Animals/other – non-criminal?	Running away, causing damages

Table 3.1. Suggested threat agents related to locking and security risk management in Iron Age contexts (building on Smith and Brooks 2013).

Naturally, when applying terms such as risk and threat, the motivations behind locking are considered to be negative, while motivations for locking could also be positive, and be desired rather than of necessity. Locking may consist of both, in different ways. For instance, while rooted in fear of robbery, locking away a valued possession may bring a positive sense of security, a feeling of safety that reduces or removes worry and stress (cf. 'order' and 'trust' in 3.7). It could also have added to the value of that which was secured (3.6). Locking may also be considered demanding. It requires diligence in keeping and using the mechanism: performing it repetitively and correctly; preventing the key from being misplaced, broken, or taken; maintaining the lock, dealing with repairs, and replacing it at need, which may have involved acquiring external expertise. However, the demanding aspects may involve desirable aspects as well, like being seen as responsible and acting according to socially entrenched expectations and rules. There may also have been desirable effects to the performance and display of locking in communicating a certain message or significance (following examples in 2.3). Security is therefore a complex concept that consists of several interrelated aspects pertaining to loss and gain. Having defined an understanding of security and how it relates to risk and threat, it is necessary to discuss what a lock constitutes in itself, as a physical and social construct, and how it specifically relates to security: as a boundary and a material agent.

3.5 Boundaries and material agency

As stated, locks and keys are forms of physical security measures. Thus, they constitute a constructed hindrance that works as a boundary. The term boundary here is not meant as social *per se* (i.e. ethnic, cultural, or other, cf. Barth 1969; discussion by Hegmon 1998), but rather as a physical obstacle that is socially entrenched in how it is constructed, upheld, and challenged by human agents. In being a boundary, keys and locks also exact their own form of agency in how they govern human actions and thoughts. In the following, how locks 'work' as boundaries and material agents is presented from Bruno Latour's perspectives on the Berlin key (Figure 3.1).

Figure 3.1. A Berlin key with its characteristic double bits, in addition to a removable suspension device placed above (Photo: Armin Herrmann, Museum der Dinge, Berlin)

The Berlin key is an invention from 1912 by local locksmith Johannes Schweiger. These peculiar keys have two symmetrical bits with a horizontal channel in each, and a straight bar between them. They were made for use in apartment buildings and tenement blocks in the city, designed to force tenants to lock the doors to the building when coming and going. Its operation was as follows: In order to exit and enter, the key needed to be inserted into the lock and turned, unlocking the door with one bit; once open, one had to push the key through the lock, move to the other side of the door, close it and lock it again using the other bit, in order to retrieve the key. The mechanism was designed in such a way that it was impossible to leave the door unlocked without leaving the key behind.

However, this operation was only necessary – and, in fact, only possible – between 8 o'clock at night and 8 o'clock in the morning (Latour 2000a:16). The caretaker of the tenement block had a particular passkey that would move a plate inside the lock, preventing it from being locked during the day and forcing it to be locked during the night (Latour 2000a:17, Figs. 1.7 and 1.8). He would manipulate the door mechanism twice a day, in order to make sure that the lock was either impossible to lock or impossible to leave unlocked. In Latour's discussion, he describes how an archaeologist (with fast-growing frustration) tries and fails to understand this mechanism on her own. Attempting to use her established knowledge and know-how from using other locks, she is baffled, being met with resistance from the mechanism in different ways and at different times of day. Only by being showed and explained by initiates is she able to understand both the mechanical operation and the social norms and rules that governs its use. Additionally, she is shown how the 'rules' of the lock may be circumvented by filing away the grooves of the key, creating a personal passkey that would annul the power of the caretaker and the lock itself (Latour 2000a:17).

With the Berlin key, Latour (2000a:1–18) illustrates that locking is something that structures human behaviour according to social, contextual intentions and expectations of use (termed a 'programme'), which is destroyed or circumvented by those not adhering to the expectations (through an 'anti-programme'), exemplified by thieves and the unwarranted construction of passkeys. These are aspects that will be brought into the considerations of Iron Age locks, and whether they – like the Berlin key – enforced certain ways of acting and were circumvented by human agents resisting their 'rules'.

The form and implementation of the lock is based on the notion of discipline (3.7.1). Creating the Berlin key was necessary because it had not succeeded to 'construct a relation solidly based on discipline, on verbal coercion, on printed notes, on warnings or the gentleness of customs' (Latour 2000a:19). In such a view, the particular mechanism represents an attempt at regulating certain behaviours through renewed material and immaterial means within an existing physical and culture-normative context, i.e. on outer doors on apartment buildings in modern-day Berlin and its suburbs. The physical boundary was necessary because immaterial boundaries were insufficient.

Looking into the past, closing off and barring access was a well-established way of creating boundaries before the advent of locks and keys. The door is one fitting example. Doors and doorways have been considered physical and immaterial boundaries entrenched in architecture and social actions, relations, and beliefs (e.g. Eriksen 2019; Schultze 2010; Unwin 2007). Doors may be opened, closed, and barred, and some may be locked – and this distinction is important to address. A lock on a door (or container) constitutes a boundary upon another boundary, which adds another dimension of practical and normative behaviour and significance. This means that the introduction and development of locks is related to the introduction and development of behaviours and attitudes.

Two central aspects separating locking from closing and barring are its connection to specific persons through the application of a key and how the lock acts independently on behalf of the person(s) administering the key. Essentially, the lock 'answers' to the key-holder alone, and when locked, it may be left and entrusted to function as a boundary without continuous supervision. This is what locking offers that closing and barring cannot: the possibility to leave while retaining a certain level of security.

When something is not locked, and one wishes to keep something secure, one either has to protect it personally or engage others (humans or non-humans) to do so. By applying a lock, one creates a boundary that represents oneself, as the lock is intended to act in one's absence. The boundary is then personified, in that it represents the one(s) who implement and operate it, and acts and communicates towards those who do not. It is lifeless yet embodied, a material agent that actively mediates human-non-human relations (cf. Latour 2000a:19). The aspect of mediation is important here, as it is the prerequisite for regarding the lock and key as agents. As argued by Latour (2000a:18–19), regarding a key as a mediator rather than an intermediary opens up a new way of interpreting the artefact, from passively transporting, expressing, symbolising, reflecting, or objectifying meaning and relations, to making and forming them. In this way, a locking mechanism constitutes an entity that is produced by human behaviour but also produces human behaviour, by administering, upholding, and challenging how humans act. Thereby, by ordering physical space the lock also orders the social space as an active being (for understandings of order see 3.7). How a lock acts as a boundary is thus not static, but a continuous process of actions, functions, meanings, relations, norms, and ethics – which will be elaborated upon in the subsequent sections.

Regarding a locking mechanism as a material agent, mediator, and personified boundary opens up for analysing the Iron Age locks and keys from a perspective that bridges technical function and social function in an interesting way, by activating the agency of artefacts (cf. the perspective of 'things doing humans' in 3.2). It entails that studying how locking mechanisms develop in terms of technical function and how they are used in various contexts, enables an exploration of how access, ownership, possession, and morality was administered and transformed by people *and* locks through dynamic social processes.

Latour's perspective started from trying to understand the reasons why the Berlin key had such particular, physical traits, which involved understanding the lock mechanism and how it was used and administered within the Berlin community. His article emphasises how the physical attributes of a tool can be deeply embedded in social customs and attitudes, and therefore, how studying physical attributes is the necessary approach to reach an understanding of such aspects. Individuality is not a concept that Latour himself uses, but is one that I find useful for describing why the physical form of locks and keys is of fundamental importance for understanding locking – in specific situations and over time.

3.5.1 Restriction and individuality in locks and keys

One premise for making locks and keys work in upholding security and regulating access is restriction, which I understand in two ways: as limited availability, meaning that a key should be kept on few hands if the purpose of locking is to be upheld; and as limited applicability, meaning that a lock should allow only the correct key to enter and operate the lock. In order to ensure restriction, locks and keys need to have a certain level of individuality, which is achieved through technical complexity and uniqueness.

These two aspects are co-dependent to a certain extent; the less complex a lock is, the less possibility for uniqueness there is, leading to a less secure mechanism – and vice versa. A lock of high technical complexity is generally more unique and thus harder to bypass (i.e. to pick or open by similar key). However, high technical complexity need not necessarily involve costly materials and exceedingly advanced production sequences. In principle, a seemingly simple, wooden door lock can be more secure than for example a decorated metal chest lock. The reason and deciding factor for this is variation – or more specifically, how much variation is possible to achieve within the specific lock type.

A lock consists of a defined set of parts, which all perform their designated tasks in opening and closing. How the parts are designed determine exactly how they work together. The range of how many different ways these features can be designed and arranged increases uniqueness and technical complexity. One does not need to dive deep into the material evidence to observe that the varied construction of keys and locks is centred on individuality; for instance, the key bit is the part manipulating the lock mechanism and hardly any key bit is identical to another. The differences may be small, but large enough to keep them from operating other locks than their own. Applying effort into achieving such variation would be pointless if their task was not to provide security – whether that security was ‘good’ or ‘sufficient’ is another question, however.

The significance of variation in prehistoric locking mechanisms was identified already in the late 1800s by army officer, ethnologist, and archaeologist Augustus Henry Lane-Fox Pitt-Rivers (1883:8) who viewed variety as an element of security. His perspective was clearly inspired by the evolutionary thinking of his time, as he considered variation a ‘necessary element of progress’, and that the art of making locks and keys resembled nature. Despite his Darwinist view on technological change, he did present arguments that are fruitful to this discussion, namely that variety in form may be connected to variability in uses. In his view, variety ‘encourages’ change and ‘promotes’ improvement (Pitt-Rivers 1883:8). Alternatively, one could say it may have been the other way around – that changes were responses to other developments or inherent parts of them. Improvement in this context may relate to locking devices being considered ‘successful’ or ‘effective’ enough from a practical and symbolic perspective, where changes reflect diverse ways of achieving such effects. Pitt-Rivers introduced the perspective that change in locking mechanisms may be sparked by the need or desire for variation and individuality. Making more unique and more complex devices may have sprung from a necessity and desire to make locks ‘better’, more secure, more successful at performing their task of protecting.

What were locks and keys and the humans that used them protecting? Security as a way of managing risk and ensuring stability needs to be understood in relation to what entities were important to safeguard, regulate, and uphold, and what meanings the action of locking could have signified. Here, value is a useful concept in terms of understanding motivations behind locking.

3.6 Value

Value is considered an integral part of locking as it relates to concepts of ownership and security as well as the practice’s significance. My perspective starts from locking being an action ‘worth’ doing in connection to things and physical spaces of ‘value’. The concept of value is multifaceted and contested, and has for this reason been challenging to define for understandings of the past as well as the present (Samuels 2009:71). For this work, I explore perspectives on value that may aid an understanding of why people locked specific things and spaces and how this changed over time.

Within sociological definitions, value has been regarded in two ways, as something attached or ascribed to preferred objects (or things in the wider sense, see 3.1), and as enduring beliefs or conceptions that construe something as preferable or desirable (Thome 2015:47). The term denotes judgements of the desirable or affective properties things have or are assumed to have and notions of desirability, such as moral considerations of right and good. Concerning the former, the evaluation of things’ inherent or attributed properties are central to how they are selected, conceptualised, transferred meaning to, made symbolic and representative (Thome 2015, with reference to Kluckhohn 1951 and Simmel 1990 [1978]). Thus, value can be defined as that which makes humans want and attribute meaning to things, whether these be intrinsic or instrumental. Ascribed values are intertwined in conceptual values, in that how things are considered desirable is contingent upon social values or standards for judgements, which are individually, group-related, culturally, and situationally dependent (Thome 2015:48). This is also acknowledged in social anthropology, where economic values versus non-economic and moral values have been seen as overlapping and in a dialectic relationship (e.g. Miller 2008:1123; Samuels 2008:80).

In archaeological literature, it is often the ‘high’ value that is in focus, expressed by terms such as ‘prestige’, ‘elite’, ‘quality’, and ‘unique’ (Burström 2015; Klevnäs 2015b).

However, placing the emphasis on notions of exclusivity and upper-strata is not sufficient in understanding why people of the past used locks and keys, as there may have been other intentions behind using a lock as boundary. Determinations of value have shown to involve a range of interlocking factors or properties, such as material composition, level of craftspersonship, aesthetics, rarity, age, biography, use and agency, power, concepts of identity, memory, and emotional attachment (e.g. Burström 2015; Gell 1992; Gosden 2005; Gosden and Marshall 1999; Kristoffersen 2018; Robb 2015; Vedeler 2018; Weiner 1992). Valuing things and spaces is inherently cultural as well as subjective, situational, and relational. Therefore, in this work, I apply the term value as denoting desirable property or significance rather than something *a priori* considered elite or prestigious. Things are considered 'worth' locking because they are valued and meaningful. This allows for a more flexible and relational approach to people's attachment to material entities and the ways these attachments related to social organisation.

Considering value as the properties making things significant to humans aligns with Hodder's view of how humans identify with and take things into possession (3.3). Regarded in this way, value is central for the objective and significance of locking, in that the value of possessions is part of what the lock as boundary attempts to maintain (cf. right of use and control in 3.3, threats and risk of loss in 3.4 and material agency in 3.5). Locking also involves a selection of things and spaces to secure; as will be demonstrated in this study, there were technologically and temporally dependent limitations for what could be locked in the Iron Age, both in terms of lockable units (e.g. containers and buildings) and lockable contents. Following the definition of ownership and possession above, there would have been socially dependent attitudes towards what was necessary and desirable to lock, actualising the diverse ascribed and normative values of individual and society. Thus, my perspective is that things and spaces were selected for restriction and protection based on judgements of values, in relation to perceptions of risk, fear of loss or interference, and undesirable and unacceptable conduct (cf. discipline and transgression in 3.7.1).

Approaching why things and spaces were possessed, kept, and restricted from considerations of value is an interesting way into discussing how people of the past identified with their material world within the wider context of immaterial norms and societal structures. It involves an engagement with how past people established particular relationships to artefacts, materials, and spaces; relationships that they invested efforts into securing, i.e. what they valued individually and as a society, and how ethical and normative beliefs regulated their behaviour. Variation and change over time is here a central point, such as what access individuals and groups had to locking devices, changes and diversity in the mechanisms, and what they were used to lock, for whom, and in which situations.

In this relation, the value of the action of locking and unlocking is also actualised. Whether or not the lock was efficient or successful in terms of physical protection, the performative aspect of the practice may have been an important part of its social significance in manifesting particular human-thing relationships, rights of control, and social positions contingent upon those rights and relationships. Locking may also have added to the value of things and spaces, in the sense that restricted or lack of access could have increased their desirability and significance. This is in line with how social anthropologist Alfred Gell's (1992) theory of enchantment is applied by Marianne Vedeler (2018) for the power of charismatic objects, and with anthropologist Annette Weiner's (1992) perspective that keeping objects out of circulation may constitute their value (following Samuels 2008:81).

Situating value within a perspective of security, ownership, and boundaries connects what locking does *for* humans with what it does *to* humans, in that the value of things and the value of locking practice is tied to ethical and normative concepts such as good and bad, right and wrong. In being physical and immaterial boundaries, locks and keys confront human's actions and attitudes. This bridges into how locking may be understood as ordering life and society, and how they gradually become a more prominent part of how the everyday is 'done'.

3.7 Ordering life: actions, things, norms, and ethics

'If I take my key with two bits that authorises me to re-enter my house and obliges me to bolt the door at night and forbids me to bolt it during the day, am I not dealing with social relations, with morality, with law? Of course, but in steel.' (Latour 2000a:19)

Returning again to Latour and the Berlin key, the quote above emphasises that locking is entrenched in how people act with each other and their surroundings – or rather, how they are *supposed* to or *allowed* to act. As physical boundaries they participate in regulating human behaviour and mediate aspects of acceptable social conduct, morals and ethics, and what is normatively legal and illegal. Because locking is a way of keeping in place (i.e. fixing, holding, containing), it is also involved in the creation and maintenance of order, in systematising and tidying human-thing and human-human relations. From such a perspective, locks and keys are physical remains of social organisation that may provide insight into how past people ordered their lives and societies.

There are three meanings of the term ‘order’ that are relevant in the context of locking and social organisation. The first meaning denotes how human and material agents ‘do’ things, order as necessary and meaningful sequences of actions. This is here connected to the different ways locking was performed in the Iron Age, specifically how various lock mechanisms worked in association with what they were placed on (operational chain perspective, 3.8.1). The second meaning is order as arrangements of people and things, such as in a household, where all may have their places and spaces for being and acting, which is related to spatial organisation as well as the creation of boundaries (e.g. Kooyman 2006). This aspect is central to the questions of how locking may have played a part in ordering daily life and how changes in locks, keys, and their use were related to changes in how order was performed, achieved, or strived for. The third meaning of order is descriptive of states or situations in which rules are obeyed and people act as expected within a society structure, i.e. ‘social order’. In philosophy and sociology, social order is understood in terms of social system or social contract, pertaining to societal organisation, behaviours, and shared norms and values (e.g. Durkheim 1982; Habermas 1984, 1987; Hobbes 2009 [1651]). This concept is used to approach locking as governed by norms and ideals, as well as creating and renegotiating them.

These three facets of order address ways of doing at three different scales; how a person would hold and move a key to lock and unlock, for what purposes a person would use the key to lock and unlock, and what significance a person’s use of a key to lock and unlock would have in a wider social context. As such, these perspectives centre on how the world is understood and performed by its inhabitants – from small and everyday tasks to institutions and cosmologies – in creating and maintaining an existence that has a logical system of structure and governance.

One of the ‘objectives’ of order and of locking may be seen as achieving predictability and stability, and preventing or counteracting disorder. Following the concept of security, disorder and lacking overview involves a higher level of risk, resulting in a theoretically higher need for security. Disorder may be related to the unpredictability of the material world and of human action and their consequences, such as accidental or intentional threat, disturbance, and loss (3.4). This includes dealing with the instability of things, as discussed concerning entanglement (3.1), where locks and keys themselves are things that may fail and demand maintenance. Like security, order may be regarded as a desirable ideal, value, or state that locking has a role in achieving.

When it comes to social order, the concept has been defined by philosophers Thomas Hobbes and Karl Marx and sociologist Émile Durkheim. Here, I approach it from the direction of practice theory, where social order is considered to result from practices (Schatzki 1996:13), which is an inspiration from philosophers Ludwig Wittgenstein and Martin Heidegger (Shove et al. 2012:4). Reckwitz (2002:251) argues that routinized bodily performances (which includes mental and emotional activities) are the site of the social and of 'social order', as it provides the world of humans its 'visible orderliness'. This phenomenological perspective rests on the idea that humans experience, interpret, and act in the world through their bodies, which means that ordering the world is intrinsic to residing in, understanding, and transforming it. This is in line with Heidegger's (1973) view of social order as the framework for 'being in the world' (the concept of *Dasein*), providing a structure for regulating human cohabitation with their material and immaterial surroundings.

Analytically, this means that studying practices, i.e. how things are done, is a study of social order and the agency within it. From this perspective, locking is approached as practice that enables, structures, produces, and reproduces social order, both physically and conceptually. Put differently, locking is a way of 'doing' social order. In terms of human-thing relationships, this is 'done' with humans and things. Latour (2000b:113) has stated that artefacts have the capacity to 'construct, literally and not metaphorically, social order', which according to Shove et al (2012:9) was considered a step too far for some, such as Schatzki (2002:71). However, by linking the interdependency of humans and things inherent in entanglement with the (re)production of social order in practice theory, it becomes clear that humans cannot construct social order alone, nor can things: it can only be done by both. Therefore, I support Latour by stating that artefacts literally construct social order, but always in a relationship with humans. As will be demonstrated in this study, locks and keys as material agents play a part in mediating and regulating human actions in social groups, which includes the production and reproduction of social order. How locking 'does' this is in close relation to social mechanisms such as moral and normative rules and ideas, trust, and discipline, which are presented further below.

3.7.1 Locking as 'doing' order: norms, trust, and discipline

Norms are central to social order as they determine acceptable behaviour. They are formal and informal rules for what members of society should and should not do. Following sociologist Helmut Thome (2015:49), values can be considered inspirational guides for desired behaviours, ideals to strive for, while norms are restrictive and enforced by the threat of sanctions. They are different from values in the respect that they ‘coordinate action and maintain social order’ even when the actors involved have differing or conflicting values (Thome 2015:49). In other words, socially defined rules and ideals encourage people to act a certain way, even (or especially) when it is against their own will or desire.

Arguably, locking does the same – while simultaneously being reliant upon the social order to succeed. Following Latour’s (2000a:19) statement above, locking is dealing with morality and law, how people self-regulate and regulate others by various means. In essence, locks and keys are material agents ‘working’ in changing landscapes of modes of conduct, mediating the desirable and the undesirable, the valued and the penalised. This means that considering locking practices provides a way of outlining norms and values of the individual and society. Additionally, it allows for addressing change, the creation and transformation of norms and values alongside developing practices and technologies.

This study starts from the first appearances of locks and keys in Norwegian archaeological contexts, taken as signs of their introduction into these societies. A central point to this examination is exploring the way locks and keys became embedded into Iron Age people’s lives and minds; how locking itself became the norm and how it changed and diversified during the first millennium AD. As mentioned in 2.3.1, Scandinavian medieval laws contain legal formulations concerning locks and keys, such as rights and responsibilities for those who locked as well as punishments for those that transgressed against locked property. These demonstrate that locking was thoroughly embedded into social order in the Middle Ages, but how this came to be during the foregoing thousand years has not been explored. Here, by considering the locks and keys themselves as products and producers of norms and social order, the mechanisms and the material traces of their use can illuminate this long-term development. In the following I explore how locking ‘works’ by involving judgements of trust and mistrust.

Trust is a normative and behavioural concept central to order. What trust is has been extensively debated in a range of fields, from psychology and sociology (Lewis and Weigert 1985; Robbins 2016), to computer science (Bamberger 2014). I adhere to sociological understandings that consider trust as a multidimensional social reality that deals with the relations between people (Lewis and Weigert 1985; Luhmann 1979).

Trust can be broadly defined as a person’s confidence in expectations or a person’s belief in or willingness to rely on the actions of another. It involves transferring control over future results to another and accepting risk of failure or harm in anticipation of reaching a desired outcome. It also involves personal experiences of people's behaviour and internalised values connected to how people should behave (Luhmann 1979:39; Robbins 2016:973, with references). For sociologist Blaine G. Robbins (2016:972) trust matters to interpersonal relationships, group dynamics, civic engagement, and society at large. Rather than an abstract concept existing outside the lived reality, he argues that trust is an 'emergent property of social life embedded in social relations and personally experienced by everyday people'. He considers trust as part of what makes social order possible and absence of trust (i.e. distrust) as what makes conflict probable.

Trust connects to security (3.4). It is one of the fundamental elements of trust because trust alleviates the stress of taking risks, reduces social complexity and simplifies life, enables construction of routines and provides predictability (e.g. Giddens 1984:50; Luhmann 1979:71; Kassebaum 2004 in Bamberger 2014:16). Following sociologist Niklas Luhmann (1979:71–72), to trust or to distrust is a choice between opposing concepts and functional social strategies. Trusting involves relying on another, while distrust is refusing to do so, resulting in burdening oneself with the complexity and demands of a situation and turning to negative expectations. Both strategies simplify decision-making, but in different ways.

One way of regarding the use of locks and keys is as manifestations of mistrust in one's surroundings. In principle, if all people had complete trust in one another, locking would not be necessary. Alternatively, one may regard locks and keys as a way of making the risk inherent in trusting more manageable. In a simplified view, a situation without locks would require relying on judgements of trust and social norms to maintain a boundary between 'mine' and 'yours', which involves putting effort into deducing whom or what to trust and distrust. A locking mechanism makes this process easier: rather than having to continuously judge the trustworthiness of one's surroundings, the trust is transferred to the lock. The lock 'simplifies life' (to borrow Luhmann's phrase) by regulating access in a way that demands less energy, allowing the distrust in the surroundings to remain unspecified. An envisioned rationale may be one of 'just in case', an expectation or belief that most people are trustworthy, but in the event that some are not, the lock is there as a precaution and warning.

Trusting the lock involves having confidence in the lock's physical ability to maintain a boundary and in people's respect for that boundary. The former may rely on the lock's material composition, in the perceived 'quality' or strength of the mechanism, that the lock will not fail (e.g. be easily picked) or break. Thus, the trust may be lowered or disappear if it is circumvented or if it is worn down, rusts, or breaks, in which case it may be desirable to fix it, improve it, or replace it with a more 'trustworthy' one. Trust in others to respect the lock is entrenched in expectations that others will act according to the social order, i.e. values and norms. An interesting aspect here is to consider to what degree these two are related, how the physical make-up of a lock is connected to how it affects human behaviour and is managed by society (e.g. the ‘arm’s race’ perspective advocated in earlier research, see 2.3.1). This perspective is closely related to the notions of discipline and how transgressions are defined and handled by agents within the social structure, which is discussed further below.

Continuing on Luhmann’s connection between trust and social complexity, it is easier to choose trust in environments that are familiar (Luhmann 1979:72). I understand such familiarity to mean that the social relations between humans and things are relatively well-established, known, stable, and predictable. It is not uncommon today to hear from people living in small communities that they do not lock their doors or cars because they ‘all know each other’, implying that familiarity is central to their trust in each other. This modern example displays a certain level of social transparency and co-dependence. The security and ownership rights of community members are entrenched in communal cohesion and adherence to social rules regulating appropriate behaviour. In a much-generalised view, such transparency and trust is perhaps lowered or less easy to achieve in more diverse or incohesive communities, like towns and cities, or in times of social instability and rapid transformation, resulting in a more prominent desire and expectation to lock. Here, transferring trust from people to locks may be a more easily chosen strategy in social environments that are difficult to have overview over, as judging the trustworthiness of all is too demanding.

From this perspective, locking may be approached as a strategy to manage efforts of trusting and mistrusting in the everyday. Practicing locking requires adding the action of locking and unlocking into the everyday, but reduces the time and energy required to estimate certain risks. For instance, the nature as well as the number of things and spaces in possession would require further estimations of risk, which could motivate persons to acquire the assistance of locks. Thus, studying the physical make-up of locks and keys and what they secured allows for considering how people dealt with challenges such as social complexity and achieving order in everyday life. It also gives insight into people becoming ‘entangled’ in the practice of locking, in dealing with things, in the performance and management of physical and immaterial boundaries. The introduction and development of locks and keys in the Iron Age can be viewed as making life easier, but the perceived aid that locking provided may have been accompanied with new complexities that changed everyday life and social order in ways unforeseen.

Considering locking as ways of trusting actualises what locks and keys do for the people locking. However, this does not fully account for why locking works in how it affects people. What is it about locks that make them trustworthy, and why do people allow locks to govern their actions? This is central to the next concept, namely discipline.

In Latour's discussion of the Berlin key, implementing this particular form of lock in the tenement buildings was seen as a necessary step in achieving desired discipline in the inhabitants (3.5). Customs, messages, and warnings were not enough to control their behaviour, so a lock was implemented that affected people's actions by limiting their range of alternatives. There were individuals that circumvented the lock's programme, but the majority adhered to its intended operation. A similar perspective is found in Latour's analysis of European hotel keys, where large and cumbersome weights were attached to room keys to make guests leave them at the reception instead of taking them out of the hotel (Latour 1990:104). Here, spoken and written orders to leave the keys were not sufficient to enforce discipline, resulting in a high number of keys being lost. The solution to the problem was making the key itself heavy and 'annoying' in order to make people self-regulate their actions. Some guests would still take keys with them, or would try to take the weight off, but the majority obeyed and the number of keys lost were reduced to a level the hotel manager found acceptable (Latour 1990:104–105).

There are two relevant points to such an understanding of discipline. The first is – a perhaps obvious point from a modern perspective – that locks and keys are necessary because norms and warnings are not sufficient in keeping people from transgressing against things and spaces. To transgress is here to go beyond the limits set by a commandment, law, or convention, to cross a boundary of acceptable conduct, to violate or infringe (Jenks 2003; Langman 2019). In this view, discipline does not necessarily equate to preventing criminal or morally deviant behaviour. It may simply denote efforts taken to deter certain human actions and encourage others, reducing friction and potential conflict. Locks are messages made material, communicated as well as enforced by the lock itself through its physical properties.

The second point is that discipline is achieved by making the undesired behaviour more cumbersome than the desired one, influencing humans to choose the latter. Materially, a lock is a hindrance that requires effort to circumvent, either by picking or breaking. Both approaches variably demand knowledge and skill, equipment, time, and opportunity, and results in a certain amount of noise. So for those not intending to transgress against property, a lock prevents accidents by being a physical obstacle. For potential transgressors, the demands lock-breaking involves may be a strong deterring factor, especially because they increase the chances of being caught (if this is a worry). This plays into locks being cumbersome on a social level; the discipline that locks and keys enforce only works if there are repercussions to breaching the boundary and – importantly – those repercussions are considered greater than the benefits. Examples of such negative consequences may be feelings of shame and guilt, criticism and exclusion by others, and punishments of social, economic and/or corporeal form. This means that the discipline of locking is contingent upon individual agency as well as the social order and structure in which they exist. Furthermore, this opens for an understanding of locking as preventive not only for the ones doing the locking but also for the people outside it, in protecting fellow members of society from becoming offenders, from committing transgressions they may regret. As a modern-day proverb of unknown origin states, 'locks keep honest men honest'.

In line with the described perspective on trust, locks and keys can be seen as a strategy for simplifying life by making it easier for people to be good and act predictably, orderly, and honestly – even when they are tempted not to. Like in Latour's (1990:105) hotel key case, where the weight of the keys made people leave the keys at the reception, locks can reduce the possibility and, in extension, the willingness to transgress, affecting the idea of transgression and how it is judged. For example, that theft of locked goods was considered a graver offence than theft of unlocked goods is observed in several medieval laws (2.3.1), illustrating a connection between intention, ethics, and the lock as boundary. Thus, while the development of locking mechanisms may be primarily seen as individual and collective investments into steering human action, there are also aspects of moral and normative attitudes being shaped through practice (i.e. changing social order).

Following this, the existence of locks and keys in the Iron Age indicates that some form of legal structure that governed their use and significance was in place, however rudimentary. This is an area that allows for discussing how developments in locking may have related to developments in social structures more concretely. By regarding changes in locks and keys in terms of security against a backdrop of social changes involving ownership concepts and ethical and normative regulations of society, it may be possible to observe if and to which degree these influenced one another. As such, it is of central interest to this study to view the development of Iron Age locking mechanisms in light of wider social contexts in order to more fully understand the social mechanisms that were involved.

So far in this chapter, I have outlined how locks and keys are approached theoretically in this study. In this last section, I present methodological concepts for approaching what Iron Age locks and keys could 'do'.

3.8 Ordering material locks and keys: types and movements

Observing what locks and keys do involves engaging with the design of locking mechanisms as well as applying a partly technological and phenomenological perspective to the ordering and understanding of the material. Ordering an archaeological material entails separating it into smaller units of study, commonly considered types, to enable studies of similarity, difference, and change. How creating and ordering types can provide insight into what things do requires a theoretical engagement with the concepts of typology and classification, which I apply in two distinct ways in this study.

3.8.1 Typology ≠ classification: a factor of chronology

Typology is one of the most fundamental concepts and methodologies in the archaeological discipline, yet definitions of the term, what doing typology entails, and the contribution of typological approaches to understanding the past have been diverse and extensively debated (e.g. Clarke 1968; Fowler 2017; Gräslund 1987, 1996; Malmer 1962, 1963; Sørensen 2015). Part of this debate is actualised here in readdressing the difference between typology and classification and what these two concepts offer in a study of past practices like locking.

The 150 year long history of typology is too complex to be summed up easily or fairly, but the general picture is that typology, in varying degrees, has signified both dating methods and classification methods, as well as denoting the results of these methods. The two terms have been conflated over time, either used interchangeably as synonyms (cf. Klejn 1982:1) or by considering typology as a particular form of classification (Adams and Adams 1991:47; Engevik jr. 2008:27). According to Bo Gräslund (1987:5), the term typology has been used to stand for 'practically every conceivable analysis of similarities and classification', which represents a variation in meaning so significant it makes the term 'unusable as an analytical instrument'. He has voiced a need to establish a terminology with clearer demarcations of meaning because 'it is seldom clear what archaeologists mean precisely by [typology], and there is no unambiguous definition which one can claim to be generally accepted' (Gräslund (1987:5). Within the renewed and much welcomed theoretical engagement with typology in recent years (e.g. Beck 2018; Fowler 2017; Sørensen 2015), Marie Louise Stig Sørensen has addressed the conceptual conflation, but without specifying exactly the distinguishing factors between the two concepts. While I make no claim to arrive at unambiguous and generally applicable understandings like Gräslund called for, I attempt in the following to disentangle the two in a way that is fruitful for my material analysis.

In my investigation of Iron Age locks and keys, I aim to determine 1) how locking mechanisms are similar and different from an operational and utilitarian perspective and 2) how these similarities and differences appear in time, as a means to get closer to developing 'ways of locking'. Here, I use classification to achieve the former and typology to achieve the latter. The basis for this approach is that, in my view, typology and classification are not synonyms; they are and do different things in terms of studying an archaeological assemblage. I will expand on this in the following. The decisive difference between them is the absence or presence of time, or chronological nuance, more specifically.

In Scandinavia, typology has since its introduction been considered a temporal gradation of types according to similarity and difference, based on the concept that similarity in form represents correspondence in time (Engevik jr. 2008:27; Gräslund 1987:5; Malmer 1963:21; Montelius 1885). The keyword here is *temporal*, because this is the element that to some extent has gone missing from the concept of typology. When creating both typologies and classifications, one starts from a specific kind of material made and/or used in a specific part of the world during a specific interval of time (Adams and Adams 1991:76). Thus, chronology is an inherent part of both concepts. However, classification centres on ordering an archaeological material into categories, types, and sub-types on the basis of selected features relevant to the research question, which can be performed largely *without* the element of time. The typology, on the other hand, comes into existence when the temporal relation between the types – i.e. the durations – are studied and established collectively. This view is proximate to the initial principle and aim of typology, which arguably was neither dating nor classification, but to identify and study change over time through artefact forms (Klejn 1982:4, 41; Müller 1884:167; Sørensen 2015). As argued by archaeologist Leo Klejn (1982:41), Montelius' typology concept was essentially a study of development and 'in no way a classification'. That is not to say typology was and is an unproblematic approach to material culture and the past, the point is the aspect of time and what typology can do.

Within this understanding, the terms classification and typology have two respective meanings each: the action of defining and ordering types and the resulting order of defined types, and the process and the result of establishing a nuanced chronological relation between types. This leads to a defined demarcation of what typologies and classifications constitute and how they contribute to answering archaeological questions. Where classification centres on understanding and defining select relationships between the observable properties of artefacts within a material category, typology constitutes studying the varying temporal dimensions of those relationships. Creating a typology is therefore not the same as creating a classification; the type classification is a prerequisite for the typology, its very foundation, but not its synonym.

From the perspective of assemblage theory Chris Fowler (2017:95) has recently stated:

> ‘At heart, typologies aim to capture a sense of how one artefact related to, and differed from, other similar objects that preceded it and followed it. Typologies are vital in identifying sequences of prehistoric activity over time, and in making sense of change and continuity. […] if used appropriately, typologies are not constraints to the appreciation of distinctiveness, difference and relationality in the past, but can rather form an important tool in detecting those relations and making sense of different past ways of becoming’.

His statement recognises the temporal dimension to typologies as well as the indirect point that typologies can be used ‘inappropriately’, which is also an issue addressed more directly by Anna Severine Beck (2018). I propose that an appropriate way of applying a typological approach involves considering it as a dynamic and interpretive process (following Beck 2018:144) – encompassing understandings of things, actions, times, and contexts – the products of which include a classification of types and a typology. This means acknowledging that they and the types they are comprised of are analytical results as well as analytical tools for specific investigations and interpretations of relations between things and humans (cf. the perspective of Mads Malmer in Sørensen 2015:87). This entails that archaeologists can arrive at multiple classifications and typologies of the same artefact category depending on what aspect of their development is relevant for the questions asked. It also encompasses an understanding of change as dynamic and contextual rather than linear, where types may be diversified into sub-types and new types may develop alongside existing ones, where their emergence and developments are conditioned by specific and changing circumstances in the past (Fowler 2017:97).

Chronological nuance here involves determining the duration of a lock and key type with as much specificity as possible (challenges with this is discussed in 4.4). This point is central to the aims of making classifications versus typologies – at least, for this study. As I will explain in more detail below, the way locks and keys are classified in Chapter 6 has less to do with the date of the finds (apart from being from the Iron Age), and all to do with how they physically secured other things – as ‘ways of locking’. Thus, the subsequent temporal analysis of the types in Chapter 7 provides a typology that forms a basis for identifying and studying ‘ways of locking’ comparatively and contextually. This involves addressing how these were created, performed, and transformed over time and space, and the potential reasons for their coming into being. The use of typology is thus to explore what lies behind the observed patterns, to understand the significance of the emergence of types and the ways they were effective (Fowler 2017:99).

3.8.2 Types as functional design, intention, and movement

The ‘effects’ of locking mechanisms are at the centre of my investigation and what this entails methodologically is constructing a classification that engages with the specific agencies of locks in concrete terms and makes their ‘effectiveness’ discernible and comparable. In essence, when asking what locking devices do and using types to find answers, the definition and order of types need to capture similarities and differences in their doings. As pointed out by John Robb (2015:167), it does not suffice to say that things are active, it is necessary to say exactly *how* they are active. For my study, this means starting from the physical properties of locks and keys that are involved in their technical function as security devices. To aid me in this, I apply Robb’s concept of ‘object design’ as a basis for considering intentionality, effect, and agency in the anatomies of locking devices. As locking is considered a practice involving actions by persons and devices in combination (in 3.2 and 3.5), I also present how bodily movement and sequential gestures are applied in my definition and differentiation of types and how my classifications are constructed. These represent a renewed way of organising locks and keys that is oriented towards comparison and understandings of difference as well as similarities in locking practices.

My investigation incorporates what Robb calls the ‘design question’, which is *what do artefacts do, and how do they accomplish their effects?* The question was first brought up by Gell (1992, 1998) and Latour (1990, 2000a), formulated from the insufficiency of symbolic and linguistic approaches aimed at finding the ‘meaning’ of things (Robb 2015:167). However, Robb – finding Gell and Latour to be better at posing the design question than answering it – argues that such philosophical and ‘deep theory’ approaches to material agency are not sufficient for archaeologists to make sense of a particular object, to understand why it has the form, material characteristic, social distribution, and history it does. I agree to a certain extent, as the Berlin key case study offers very useful concepts for considering the mechanics of a specific lock type, its agency, and the norms and rules that govern it at a specific time and place, but provides no framework for studying this over time, nor how a collection of diverse locks should be approached. In response to the perceived shortcomings of anthropological deep theory, Robb proposes ‘object design’ as a middle range theoretical concept and model. This is used here as it enables the design question to be answered with more specificity, addressing head-on how things are active in interactions between people and things.

I draw on three aspects of object design that are fruitful in this respect. The first is the element of intentionality in design features; that things incorporate knowledge of the responses or effects they are intended to provoke. They 'channel how people respond to them' because their design contains cues that are expected to achieve a certain reaction (Robb 2015:169). The second is the factor of social tasks in artefact design. Many things are specialised and intended to accomplish specific tasks, and by considering the different tasks material culture does and their requirements one can observe that these result in artefacts with particular design features (Robb 2015:170, 178). The social functionality is built into the design features of things themselves, and the features guide the user's anticipated responses and allows the thing to accomplish its task. The third aspect is 'standard setting' as a strategy for material efficacy, meaning that one of the ways design features can be effective is by asserting basic norms of behaviour and order, by creating reactions of unconscious acceptance and conformity (Robb 2015:171, Tab. 12.1). Building on Heather Lechtman's (1977; Lechtman and Merrill 1984) concept of 'technological style', this perspective involves that things – particularly everyday ones – can set standards for the right way to do things through their specific designs, contributing to the sense of appropriate order in particular settings. In turn, this means that considerations of design can bring insight into elements of 'low-key normality or shared habitus and a basis for a sense of community' (Robb 2015:171).

From these understandings, the physical properties of locks and keys are intentional, task solving, and standard setting. The properties related to their technical function – how they are opened and closed in relation to what they secure – contain intentions or expectations about how they perform their tasks. For instance, the requirements for the task of locking a container warrants a set of design features, and variation in container forms involve a correlating range of particular features. This means that ordering locks and keys into types by how their characteristics help them perform locking in similar and different ways provides means to address the intention of their designs and uses. Also, regarding design as having an effect of asserting and upholding standards of behaviour activates how locking is normative and ordering in different ways by the different features in locks and keys (cf. 3.7). From this, material form becomes a link to the outlined 'deep theory' concepts presented earlier, such as security and risk management, regulating behaviour, norms and values, and ordering life.

My approach to achieve what I have termed a 'techni-functional' ordering that encompasses these aspects is by using bodily movement and gestures as a main organisational principle in the classification, in combination with the presented concepts of restriction and individuality in security (see 3.5). The starting point is that locks are operated with keys through sequences of movements. The movements are performed by the person, by the lock and key, and by the lockable unit (e.g. casket or door) in combination. The person's bodily movements causes motion, while the mechanism and the lockable unit itself moves with the person and simultaneously determines how the person's movements must be performed and in what order. The main lock and key types are arrived at by defining the direction of the movement that are *primary* to opening a lock. Different primary movements are considered the governing locking principles of the main types (explained in more detail in Chapter 6). The further division into sub-types are defined by variations of design features and locking sequences within the main principle, which incorporates the locks' mounting on lockable things (which are presented in Chapter 5). The next level of division into variants is defined by features representing individuality and complexity, representing how restriction is achieved at detailed levels of design.

A sequence of movements is arrived at by considering the form and arrangement of lock parts and the key in relation to the construction of what the mechanism was locking. The possibility and success of this depends on the material preservation of finds (to be presented in 4.1). What this entails for defined types, sub-types, and variants is that these are gatherings of variably complete artefacts that share certain operational design features and certain practical tasks. Importantly, though, these are not presumed to be conceptually distinct or static (following the critical perspective on archaeological uses of types by Beck 2018). While a lock and key's form, eventual decoration, and application likely constituted a framework for how they were regarded, responded to, and attributed meaning, their interpretation is context-dependent (cf. Robb 2015:177).

The classification principle presented here is partly phenomenological as well as technological in character. It involves viewing the objects and their design from the human body and from its interaction with the locking mechanisms by motion, body position, and sensory abilities (e.g. Tilley 2005). It encompasses a use-related operational chain perspective where humans and things act through orders of gestures; the gestures are experiential, embodied knowledge and know-how about how particular locks can and are intended to work and act (Dobres 2000, 2010; Lemonnier 1976; Leroi-Gourhan 1993 [1964]; Pelegrin 1990). It is a system for outlining particular 'hows' of locking devices' agency and 'ways of doing' that have purposes, motivations, and expected (and unexpected) effects. Hence, how each lock and key find is investigated, understood, and ordered in relation to others is conceptually tied into locking as practice and human-thing relationships that produce and transform behaviours and ideas.

In this chapter I have outlined how locking devices are approached: as material agents in a social practice and human-thing entanglement, as physical and immaterial boundaries, and as elements in a dialectic between everyday actions and social order and *habitus*. The practice of locking is considered centred on values, norms, trust, and discipline, on dealing with human relations and the material world, with predictability and risk, with order and disorder. Locking mechanisms are not considered passive results and reflectors of the societies in question, but active and effective parts of them. Combined with the methodological concepts of object design and types, the framework allows me to consider what locks and keys did within the Norwegian area from the Roman Period to the Viking Age at different scales, from the situational and individual to the long-term and cultural. In essence, it provides a starting point for considering technological change as social change come about through practice.

4. Materials: locks and keys in Iron Age Norway

This chapter gives an overview of the archaeological evidence, its geography, and chronology. Firstly, I will present the Norwegian locks and keys and source-critical aspects related to material composition, preservation, and identification (4.1). Then follows the geographical division of the research area and notes on spatial distribution (4.2), before the contextual categories are presented and briefly discussed (4.3). Lastly, I outline some of the temporal challenges inherent in this material and the chronological framework (4.4). A catalogue of the finds treated in the study is found in Appendix I, and lists of finds excluded are to be found in Appendix II.

4.1 Archaeological evidence and source-critical considerations

The body of finds analysed consists of 832 artefacts, made up by 234 locks and 598 keys. The number of individual items is somewhat higher, approximately 1080, as locks often consist of several parts. 767 finds derive from 503 contexts with additional 65 single finds. The finds are mainly dated within the time span *c*. 0–1050 AD, with 138 finds from the Early Iron Age (*c*. 0–550 AD), 673 from the Late Iron Age (550–1050 AD), and 21 finds with a general Iron Age date. Select Iron Age and Late Iron Age finds have dates which stretch into the following medieval period.

All of the devices are of metal, consisting of iron, copper alloy, or a combination of the two. All archaeological remains are results of taphonomic processes, and analyses and interpretations of the past are contingent upon what is observable. In this respect, it is necessary to take into consideration what may not be observable empirically and how that affects the composition of an analytical body of evidence, the results, and understandings of the phenomenon in question. One such aspect is the material make-up of locking devices with regards to how they are identified and defined; another concerns how a low preservation of organic materials in general may influence the basis for analysis and understanding. In the following section, it will be explained how material composition and preservation are central to how locks and keys are investigated.

4.1.1 Identification and delimitation

An initial investigation of museum catalogues as well as research history (Chapter 2) shows that locks are less often identified in archaeological contexts than keys. This may be due to lower frequency of deposition or lower degrees of preservation, but potentially also lacking knowledge from the persons doing the cataloguing. Locks are often highly fragmented due to their composite construction. These devices consist of multiple parts and depending on contextual conditions, excavation techniques, conservation, and collection storage, locks will have been broken down into smaller parts that are challenging to identify and interpret without specific knowledge regarding their original assembly. For this reason, there are likely to be more locks in the collections than I have been able to determine, as several have been classified as unspecified iron fragments or iron fittings. This was confirmed by investigating unspecified metal parts and fittings that, based on context description and related finds, were considered as likely remains of locks. This was also proved true for keys, the variable shapes of which is known to be challenging to recognise, particularly when poorly preserved (Berg 2013:52).

To a certain extent, however, keys are easier to identify than locks as they mainly consist of one individual artefact. Corrosion is the most common challenge for identification of iron keys in Norway, often rendering them unidentifiable and fragmented. Copper alloy keys are generally more well-preserved, have more remaining surface that may display decoration and use-wear, and are less prone to accidental breakage before and after deposition. Fragmented keys are also problematic to determine, especially when the bit is missing, in which case the handle may be less diagnostic. A missing bit is also a hindrance for understanding its type and function.

In the process of selecting finds to include in the study, delimitations were necessary. I have chosen to include primarily keys and 'active' lock parts. The latter are the pieces that make up the mechanism itself, which include springs, bolts, internal cover plates, blocking features, padlock cases, and shackles (see Table 6.1 for terminology). Where active lock parts are identified, the external lock plates and keyhole fittings are also included. Lock fittings themselves reveal little about the function of the lock, but they are included to the extent that they confirm that a lock was originally present.

In cases where the catalogue suggested there was a key, a lock, or iron fragments belonging to a casket/chest, it was not always possible to identify the remains as such. These instances were challenging, as processes of deterioration after the initial cataloguing may have caused the artefacts to be unrecognisable, making it impossible to determine whether the initial classification was correct. With the exception of certain indeterminable finds that are considered potential cases of locks and keys, I have chosen to exclude artefacts that could not be identified or determined, because even if they were identifiable at some point, they currently cannot be analysed and brought into a discussion on technological development and locking practise. In my experience, the catalogue descriptions have been unreliable; several finds were not what they were claimed to be and in other instances, locks and keys had been misinterpreted as other artefacts. Therefore, in the cases where lock parts were not identified in the collections, I have largely chosen the cautious approach of excluding them. However, when in relation to a confirmed key or lock part, I have noted the likely presence of others. For example, when a hasp could not be located among a key and casket fittings, it is included as an indeterminate/possibly lost find.

In some cases, there are strong indications that there was a container in a context, but without any preserved lock parts, it was impossible to determine whether it was lockable or not. Naturally, this causes a discrepancy between the number of locks and the actual number of containers. This must be kept in mind when considering the results and the subsequent discussion.

I have chosen to be conservative in my inclusion of artefacts and accepted that some are left out due to lacking preservation or loss, rather than working with many indeterminate finds that may complicate and skew the results. The number of certain artefacts is substantial and my view is therefore that the analysis will provide significant results even when some are excluded.

As in all collections, a few finds could not be located and may have been lost or misplaced. Some were under conservation or had not yet been brought to the museum, were on loan to other museums, or were for different reasons not available for study during the data collection period. In these cases, they are included in the study if there is sufficient documentation about them and their find context. Finds from metal detecting are also included, as they provide insight into the broader quantity and distribution of locks and keys. For this study, I have chosen to include the metal detector finds that have been given a museum ID, and excluded finds with an acquisition number awaiting proper classification and cataloguing.

Finds that lack any information regarding their discovery and context are excluded from the analysis, even when typological traits indicate that they derive from the Iron Age. In cases where the county or municipality where they were found is stated, they are included, but will not been given particular emphasis beyond general quantitative and geographical considerations. In addition to missing identification, find information, and misclassification, finds that have an indeterminate date and are considered probably medieval are not included. Approximately 150 finds in total were eliminated during this process (Appendix II).

The collection of data and study of the archaeological material have taken place over the course of roughly three years. The data collection was finalised in the spring of 2019, and the latest finds included were acquired in 2017–2018. The material presented is not exhaustive and complete, but represents the majority of the locks and keys from the Iron Age within the Norwegian area.

4.1.2 Material biases and absence of evidence

The other issue of preservation and identification is the general lack of organic materials in Norwegian archaeological contexts. On the one hand, it affects which types of locking mechanisms are preserved, and on the other, what related archaeological evidence they are associated with.

The exclusive occurrence of metal locks and keys in the evidence is conspicuous and needs to be addressed in relation to the tangible lack of non-metal devices. Locks and keys of wood and possibly also bone or antler could have been in existence in the Norwegian Iron Age, but may not have been documented due to poor preservation. Wooden keys and lock fragments have been found in 11th-century settlement layers at Lund (Blomqvist and Mårtensson 1963:124–125, fig. 104), from Late Iron Age layers of Hedeby (Eriksen 2019:29, Fig. 2.5; Schultze 2010), and medieval layers of Trondheim and Bergen in Central and Western Norway (Cadamarteri 2011:21–22, Fig. 5; Reinsnos 2013:33, 62, Fig. 4.10). Additionally, a whale bone key from a Norse settlement at Stenabreck, Orkney, may have been of 9th–12th century date (Traill 1885; cf. National Museums Scotland online collections database). These devices are for locking doors, either by turning or lifting mechanisms (Type C, Type D). The door lock from Hedeby is a wooden device that was operated by an iron key. This is a unique find that may indicate a more widely applied way of constructing locks, which may also contribute to explaining the dominance of keys over locks in the empirical material.

These finds indicate that organic materials were applied in door locks at the end of the Iron Age and the early Middle Ages, but it is not clear whether such mechanisms existed earlier. The lacking evidence may signify that they were not, but may also be the result of poor preservation. The existing finds derive from urban settlement sites with deposits that have preserved organic materials, something that is rare in Norwegian evidence. Both urban and agrarian settlements have been primarily found in areas where constructional and agricultural activities, particularly ploughing, have removed and disturbed the remains (Pilø

2005, 2007a). Cultural layers are rarely intact, and post-holes, wall ditches, and occasional fire places are the most commonly occurring traces (Pilø 2005:82–83).

So if Iron Age locking mechanisms were truly as metal-based as the empirical record indicates, or if there is an absence of evidence due to preservation and intentional destruction, this has a certain influence on the interpretations of the locking phenomenon. As will be shown in Chapter 8, the material primarily consists of padlocks and casket and chest locks. There is therefore little knowledge of how doors were locked, besides the mentioned examples above. This pattern may result from the predominance of burial evidence (Table 4.2 below), in which door locks would not occur. It may also indicate that metal devices were more commonly used for portable objects while wood could have been more common on doors. For example, wooden tumbler-type door locks were among the very first that were invented, in Mesopotamia (cf. Potts 1990; Radner 2010), but it is the latest lock type to occur in the Scandinavian Iron Age (exemplified by a find from Lund, cited above). This inverted picture is puzzling, and while it may be related to urbanisation and social complexity (as suggested in Chapter 2), it is a possibility that wooden devices were already in existence in Scandinavia when the first metal devices occurred. In such case, the metal locks and keys may not have represented the introduction of locking, but a development of an existing concept and practice. However, a lack of evidence prevents a further exploration of this topic. The analytical starting-point is thus that, based on current knowledge, the occurrence of metal locking devices in the 1st century AD represents the likely introduction of key-operated security measures in Scandinavian Iron Age societies. While still uncertain, wooden and bone devices seem to be a technological development that is introduced in the last stages of the period, primarily on doors, and is further applied and implemented from the Middle Ages onwards.

The micro-level analysis of what locked containers and spaces contained is also affected by deterioration and destruction of organic materials compared to more durable substances. This has an impact on what may be deduced about locking practices and what locks were used to protect, particularly in the case of boxes, caskets, and chests. One aspect is that such containers were most commonly of wood, and their presence and placement is only indicated by surviving lock remains and metal fittings. Depending on the *in situ* situation, it is highly variable if associated artefactual remains can be regarded as having been placed inside a container or not. Another aspect is that the contents of a container may be partly or completely disintegrated. For example, there have been several occurrences of caskets appearing empty. In such cases, it is proximate to conclude that it likely contained organic materials (e.g. Thorberg 1973:46). It is more challenging, however, if a casket has some preserved contents of durable materials, in which case the absence of disintegrated materials is less likely to be considered.

The material evidence of locks and keys and their use is therefore significantly determined by contextual conditions and taphonomic processes, in addition to the variability in archaeological methodology and documentation. This also, to some extent, affects the geographical occurrence of locks and keys, as described below.

4.2 Geography

The locks and keys analysed derive from the current-day Norwegian area, which is traditionally separated into five geographical regions: Northern, Central, Western, Eastern, and Southern Norway (Figure 4.1). This division will be used in the following chapters.

Northern Norway consists of the counties of Nordland, Troms, and Finnmark, the latter of which had no finds of Iron Age date. Central Norway consists of Trøndelag County, which until 2016 was made up of two separate counties, Sør- and Nord-Trøndelag. The boundary between Nordland and Trøndelag is commonly considered the divide for South and North Norway, which are terms that will occasionally be used. The Western region consists of Møre og Romsdal, Sogn og Fjordane, Hordaland, and Rogaland counties, and Eastern Norway includes Oppland, Hedmark, Buskerud, Telemark, Oslo, Akershus, Vestfold, and Østfold. As the urban settlement evidence from the medieval towns has been exempt from the study (1.2), the County of Oslo is left with merely one find (C20563, a copper-alloy key of Late Iron Age date), and is therefore not included. A government-led merger of select counties was implemented from 2020, and this study was largely executed prior to this merger. Therefore, the investigation and the catalogue have not taken these latest administrative reorganisations into account, and the information registered in the regional museums' databases and archives at the time of data collection is applied.

The finds have museum IDs that are comprised of an initial letter followed by a number and a sub-letter or sub-number (e.g. A12345b or A12345/1). The initial letter is indicative of the respective museum collection: B = University Museum, Bergen; C = Museum of Cultural History, Oslo; S = Museum of Archaeology, Stavanger; T = NTNU University Museum, Trondheim; Ts = The Arctic University Museum of Norway, Tromsø. Thus, the museum IDs indicate the geographical regions the finds derive from, but only to a certain extent. Importantly, the management areas of the regional museums do not correspond entirely to the geographical regions of Norway applied in this study (Figure 4.1). As both are rooted in modern government administration, there is a certain overlap between them, but there are also marked differences. The Museum of Archaeology in Stavanger only manages the County of Rogaland, the Museum of Cultural History in Oslo manages Eastern Norway, but also the Agder counties in Southern Norway, and the County of Møre og Romsdal is divided between the University Museum in Bergen (which also manages Hordaland and Sogn og Fjordane) and NTNU University Museum in Trondheim (which manages Central Norway). The Arctic University Museum of Norway in Tromsø manages Nordland, Troms, and Finnmark. Additionally, finds have been collected and exchanged in various ways throughout the histories of the museums, resulting in collections that do not exclusively reflect their current management areas. This latter point is particularly necessary to keep in mind when considering the catalogue (Appendix I), which is organised by museum ID and not by geographical region.

The number and distribution of the locks and keys are presented in Table 4.1. It illustrates the amount of finds documented within the five geographical regions and the counties they encompass, as well as their general dates within the Iron Age.

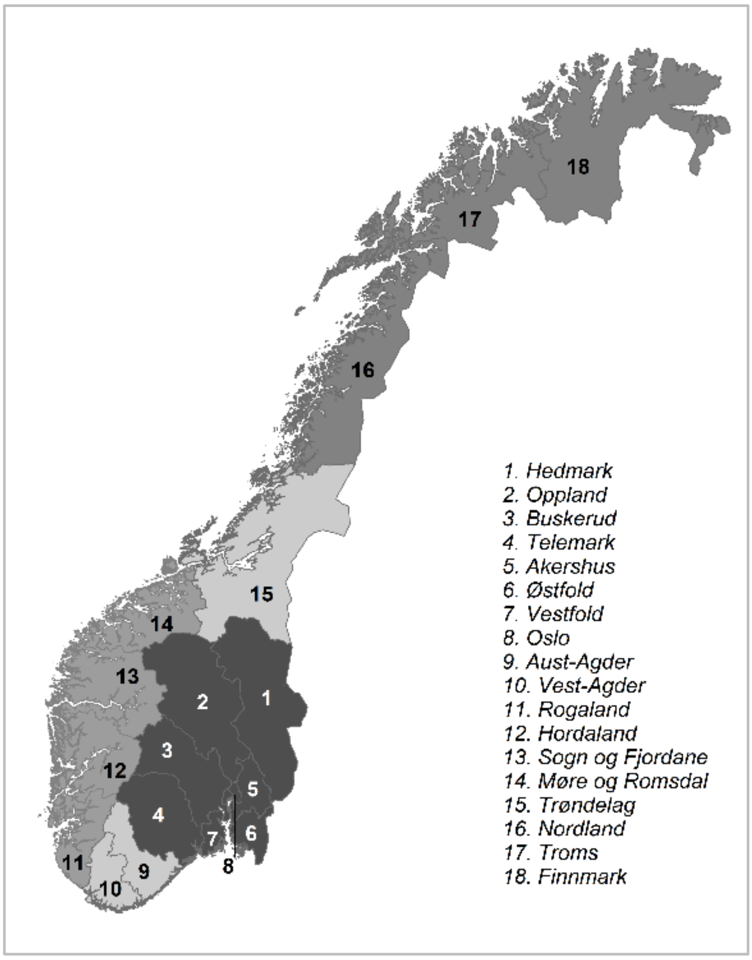


Figure 4.1. The five geographical regions of Norway applied in the study, with the respective counties numbered. Eastern Norway: 1.-8; Southern Norway: 9-10; Western Norway: 11-14; Central Norway: 15; Northern Norway: 16-18 (Map: Jan Kristian Hellan, additions by author).

	Early Iron Age		*Late Iron Age*		*Iron Age*		*Total*		
	Keys	Locks	Keys	Locks	Keys	Locks	Keys	Locks	All
Eastern N.	34	18	230	74	9	2	273	94	367
Akershus	1		21	7			22	7	29
Buskerud	2	2	25	7	1		28	9	37
Hedmark	10	4	40	13	5	1	54	18	72
Oppland	12	11	57	6	1		71	17	88
Telemark	6		22	7	2		30	7	37
Vestfold	2		57	30		1	59	31	90
Østfold	1	1	8	4			9	5	14
Southern N.	10	2	6	3	1	0	17	5	22
Aust-Agder	1		4	2	1		6	2	8
Vest-Agder	9	2	2	1			11	3	14
Western N.	56	8	156	95	2	1	214	104	318
Hordaland	15	3	35	13			48	16	64
Møre og Ro.	5		20	10			25	10	35
Rogaland	21	1	28	18		1	51	20	71
Sogn og Fj.	15	4	73	54	2		90	58	148
Central N.	6	1	58	20	2	0	66	21	87
Trøndelag	6	1	58	20	2		66	21	87
Northern N.	3	0	22	9	3	1	28	10	38
Nordland	2		17	9	3	1	22	10	32
Troms	1		5				6	0	6
Total	109	29	472	201	17	4	598	234	832

Table 4.1. General geographic, temporal, and quantitative distribution of locks and keys within the regions and counties of Norway. The LIA and IA finds include select finds with dates into the MA.

Table 4.1 and Table 4.2 show that there are significant variations in the spatial distribution as well as the contextual. It is important to note that the occurrences are affected by what material remains past activities have left behind, as well as the activity of archaeologists. Therefore, lacunas in the distribution maps shown in the following chapters may not necessarily signify absence of locking in these areas, but may also reflect areas that have been investigated to a lesser extent.

	Early Iron Age					*Late Iron Age*					*Iron Age*				*Period total*					
	B	S	D	SF	U	B	S	D	SF	U	B	S	D	SF	B	S	D	SF	U	All
Eastern N.	27	3	0	2	0	168	5	6	35	2	2	3	0	2	197	11	6	39	2	255
Akershus				1		15	1		4						15	1	0	5		21
Buskerud	2			1		20		2	4					1	22	0	2	6		30
Hedmark	6	2				28			6			2			34	4	0	6		44
Oppland	14					27		3	17	2		1		1	41	1	3	18	2	65
Telemark	2	1				17	1		1		1				20	2	0	1		23
Vestfold	2					53	2	1	3		1				56	2	1	3		62
Østfold	1					8	1								9	1	0	0		10
Southern N.	6	0	0	1	0	5	0	0	0	0	0	1	0	0	11	1	0	1	0	13
Aust-Agder				1		2						1			2	1	0	1		4
Vest-Agder	6					3									9	0	0	0		9
Western N.	46	1	0	0	0	149	5	0	10	0	0	2	0	1	195	8	0	11	0	214
Hordaland	9					27			3						36	0	0	3		39
Møre og Rom.	4					19			3						23	0	0	3		26
Rogaland	22					31	1		3					1	53	1	0	4	0	58
Sogn og Fjord.	11	1				72	4		1			2			83	7	0	1		91
Central N.	4	1	0	0	0	36	1	1	9	0	1	0	0	1	41	2	1	10	0	54
Trøndelag	4	1				36	1	1	9		1			1	41	2	1	10	0	54
Northern N.	3	0	0	0	0	20	1	0	4	0	1	3	0	0	24	4	0	4	0	32
Nordland	2					17	1		2		1	3			20	4	0	2		26
Troms	1					3			2						4	0	0	2		6
Total	86	5	0	3	0	378	12	7	58	2	4	9	0	4	468	26	7	65	2	568

Table 4.2. General geographic, temporal, and quantitative distribution of contexts containing locks and keys from the Iron Age in Norway according to region and county. B = burials, S = settlements, D = depositions, SF = single finds, U = Unknown/undefined.

4.3 Context

With the exception of urban and central-place evidence, the archaeological material is primarily of a rural nature, deriving from burials and settlements, along with potential depositions and single finds. As illustrated by Table 4.2, the majority of the finds stem from burials, with considerably fewer finds deriving from settlements and depositions.

4.3.1 Burials

The burial contexts containing keys and locks are in the form of inhumations and cremations. Locks and keys mainly occur as grave goods (see 8.3 for other uses); the burials are therefore commonly furnished ones, and represent individuals that were commemorated by their deposition, and not necessarily all that used and were associated with locking.

How the burial evidence is approached in this study warrants some clarification here. Burials are remains of ritualised situations and actions taking place according to culturally defined beliefs and customs, characterised by idealisation of the dead and by elements of variation within general conceptual standards (e.g. Barndon and Olsen 2018; Bell 2009; Kristoffersen and Østigård 2006; Parker Pearson 1999; Price 2008; Williams 2010). Hence, burials may be considered first and foremost as sources to how locks and keys were part of situations dealing with death, religious belief, identity and social status, commemoration, and the afterlife. However, the mortuary and ritualised role of locking is not the main object of this study; it is an avenue to address locking within the realm of the living.

My starting point for this is that burials contain information about society (e.g. Härke 1997, 2014; Hanisch 2002; Kristoffersen and Østigård 2006; Røstad 2016; Ystgaard 2014). While being ritual and idealised, the persons and things that burials are made up of derive from the communities that constructed them (e.g. Østigård and Goldhahn 2006). Archaeologists cannot assume that they mirror social realities, but neither can it be assumed that they are entirely 'other' (e.g. Härke 1997). As recently addressed by Marianne Moen (2019:58–59, with references), burials are not ritual actions divorced from social reality, however, they are entrenched in social context, containing information about ideologies and norms. These norms may include what to lock, for instance. As I see it, the funerary organisation could echo that of lived life, referencing familiar placements and applications of things in the construction of the grave. Here, locks and keys and the things they secured in burials may not be drastically different from the everyday, meaning that the burials represent a starting point for discussing the application and significance of locking. At present, they make up the main material available to do so.

Thus, I primarily approach the burials as sources to the mechanisms themselves, to the social situatedness of locking in society, and to the social processes that propelled their developments. The connection to the deceased and those that interred them is central because these are considered as representatives for or the actual carriers and carriers-out of locking, the ones that locking had their effects on, and the wider social landscape in which locks and keys existed, worked, and ordered life (as formulated in Chapter 3).

In relation to this, there is a source-critical issue concerning the spatial and the contextual distribution, where the occurrences of lock-and-key graves may not reflect the extent of their use in society, but rather various customs relating to burials and the deposition of artefacts. So while a high number burials with locks and keys in one area/region may indicate a generally prominent presence of the technology, a low number may not necessarily reflect a corresponding lacking presence in living society.

The contextual information is affected by how the finds were discovered and excavated. A significant part of the burial finds were investigated before the 1900s, when archaeological methodology was of a different standard due to different attitudes towards empirical evidence and less advanced excavation technologies. Figure 4.2 below illustrates this point, showing that the majority of finds were gathered prior to and around 1900, with a third of the finds being post 1940s. The degree of rigorous investigation and documentation varied, thus knowledge of the contextual conditions, burial construction, placement of finds, and so on, is often lacking in the earliest investigations. Aspects relating to the placement and use of locks and keys in burial contexts is therefore not always possible to ascertain, and only burials with sufficient documentation are brought into the discussion of such aspects.

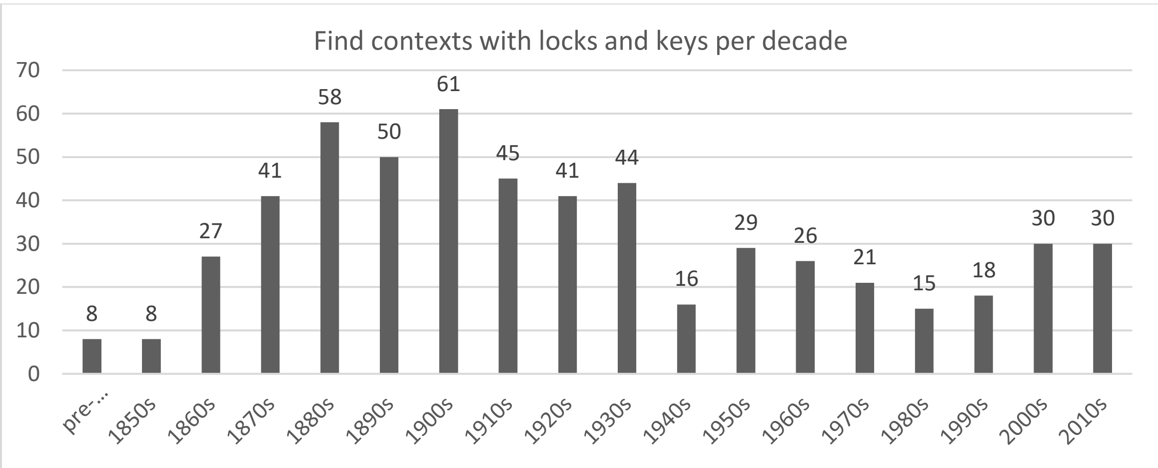


Figure 4.2. Graph illustrating the number of find contexts and single finds discovered within each decade from before 1850 to the 2010s.

The quantitative discrepancy between burials and other forms of archaeological contexts is a combined result of modern and past actions, as well as taphonomic processes. One factor is the activities of archaeologists, who for a significant part of the discipline's history excavated primarily burials (cf. Solberg 2003:22). This also resulted in a further discrepancy between monumental burials and those with seemingly no external markers (i.e. *flatmarksgraver*, e.g. Østigård 2006:10), here called unmarked graves. Before the advent of methodologies allowing for investigations of settlements and other forms of material structures and remains, burial evidence was the most common source for knowledge about the past until the 1950s, and is therefore strongly represented in museum collections.

The number of burials in the material record is also a result of non-archaeological activities, such as agriculture, material extraction, construction, and infrastructure. There is also the practice of *haugbrott*, looting burials, particularly mounds (Brendalsmo and Røthe 1992; Brøgger 1945; Gjerpe 2007; Klevnäs 2015a). It has likely affected the occurrences of locks and keys in burials in a negative way, but as documentation has been variable and often poor, the impact of looting is unknown.

For aspects of status and gender, the approach is an analysis of the funerary evidence, mainly the nature of the artefactual composition and the burial construction. These elements vary depending on period and somewhat on geographical area. Considerations of status are based on the form, quality, amount, and possible provenance of the grave goods along with the type and form of the burial, its internal and external markers. While landscape is also a significant part of status, this aspect will not be brought into the analysis, as the focus primarily rests on the use of locking mechanisms in the burial ritual.

Definition and determination of past genders is a challenging and contested issue in archaeology (e.g. Bolin 2004; Gilchrist 1999; Moen 2019; Sellevold et al. 1984; Stylegar 2010). As has been argued recently, it is largely entrenched in a historical and modern binary view of male and female, which negates fluidity and variability in past gender concepts and has fuelled stereotypic views of the roles, activities, and significances of men and women (Moen 2019). The relationship between locking and gender is not a central aspect in this study, but it is relevant for situating locking socially in terms of individuals, groups, and social strata, as well as for considering situations and activities that locking may have been involved in. Therefore, in order to allow for flexibility regarding gender definition and importance in such aspects, the determination and the subsequent analysis is intended as indicative, where the gendered features are regarded as material expressions of gender (Moen 2019:114–116, with references), rather than affirmation of a specific, static gender and biological sex of individuals.

Methodologically, gender may be determined by osteological sexing of skeletal remains, interpretation of grave goods and burial features, or recent methods of aDNA, all of which are imbued with their own challenges (Moen 2019:116). In the analytical material, there are few instances of osteological and aDNA analyses, and information regarding burial construction is often limited or lacking, so the determination is mainly conducted on artefactual evidence. The criteria are outlined in Table 4.3 below, which describes the artefact categories that are most likely ‘male’ and ‘female’, based on recent research. The composition of the burial assemblage is evaluated for each context, and absence of particular gendered artefacts, such as weapons for men and jewellery for women, generally results in an uncertain gender determination. In cases where traits of both genders are present, whether there are two or more individuals present or if there are signs of ambiguous gender will be considered. Where no clear gender indication is observable, these are considered ‘indeterminate’.

	Female gender markers	*Male gender markers*
Roman Period (Solberg 2003)	Dress fittings/jewellery: fibulas; silver plate brooches; dress and hair pins; gold filigree pendants; beads on string; smaller arm rings; small finger rings Textile-working tools	Weapons: sword; lance; spear; shield; iron arrows Dress fittings/jewellery: belts with stones and strike-a-lights; belt buckles; fibulas; arm- and neck rings; large finger rings; medallions? Equestrian equipment: spurs
Migration Period (Kristoffersen 2000; Solberg 2003)	Dress fittings/jewellery: silver plate, relief, equal-armed, shield-shaped and cruciform brooches (>1); dress pins; belt rings? Textile-working tools	Weapons: sword; lance; spear; shield; iron arrows Dress fittings/jewellery: belts with stones and strike-a-lights; belt buckles; fibulas; cruciform brooches (1) Metal-working tools Certain strike-a-lights Tweezers (mainly men) Coins and scales?
Merovingian Period (Røstad 2016; Solberg 2003)	Dress fittings/jewellery: conical, equal-armed, button-on-bow, and oval brooches; S-shaped, rectangular, bird-shaped fibulas; beads Textile-working tools (mainly female)	Weapons: swords; spears; arrows; shields Armour: helmet; chain-mail Dress fittings/jewellery: belt and shield-thorn buckles; strap mounts and scabbard fittings Wood/bone-working tools Metal-working tools Farming tools (mainly male)
Viking Age (Glørstad 2010; Moen 2019; Solberg 2003)	Dress fittings/jewellery: Oval, trefoil, equal-armed, round and Insular/Frankish mount brooches; bracelets; pendants; beads on string (10+ mainly female) Textile-working tools and materials (mainly female)	Weapons: swords; spears; arrows; shields Armour: helmet; chain-mail Dress fittings/jewellery: Penannular brooches and ring-pins (mainly men); strap mounts Black-smithing tools Farming tools (scythes) Fishing tools (mainly male) Wood-working tools

Table 4.3. Periodical overview for gender determination of burials based on artefacts.

4.3.2 Settlements

The settlements that have produced locking devices are varied. There are farm sites of different sizes, primarily consisting of longhouses of various types, with activities related to agriculture and craft-working; high-level settlements in the form of halls with administrative and cultic activities; buildings in mountainous landscapes, related to possible shieling activity and exploitation of outfield resources; central places and urban sites in the form of organised settlements with activities related to specialised craft production, regional and international trade, and central secular and cultic functions. The latter is particularly interesting, as several of these have material remains of locksmithing, providing valuable information about lock and key production (e.g. Brinch Madsen 1984; Croix et al. 2019; Gustafsson 2005; Holback 1999; Pedersen 2010, 2016; Tomtlund 1978). Additionally, although they are not outright settlement contexts, market place sites are included into this category, as people would stay at the markets for various lengths of time as they participated in trade, politics, judicial assemblies, and socio-cultic activities (Loftsgarden 2017). In this relation, assembly sites is another relevant settlement category. The remains themselves vary within and between the types of settlements, but keys and locks have been primarily found as single finds in top-soil layers by the use of metal detectors, or various contextual features inside and outside buildings.

Investigations of Iron Age settlements in Norway began by pioneer excavations from the early 1900s onwards, but settlement archaeology did not become an established field until the 1970s and '80s, when mechanical soil-stripping methodology and open-area investigations for surveying and excavation were developed and implemented (Diinhoff 2013; Løken et al. 1996; Rolfsen 1976) – somewhat later than in Denmark (Becker 1965).

Archaeological excavations have predominantly happened as part of government-led, heritage management initiatives, while research-led initiatives have been less frequent. Thus, the areas investigated by archaeologists have mainly been determined by modern-day needs and developments rather than particular research questions. A significant part of the larger archaeological projects in recent years have been related to improvements of infrastructure (Gundersen 2016; Reitan 2014; Ystgaard et al. 2018). As the topography of Norway to a significant degree affects where and how people can move in the landscape, the trajectories of planned infrastructure coincides with areas of past activity, which has led to a significant discovery of archaeological remains. So while the patterns of distribution are significantly influenced by current-day activity, there is a certain correlation between past and present areas of activity, as the topography and geology of Norway to some extent has determined where people could live, farm, and conduct particular activities. As such, outfield activities and settlements are less represented in the archaeological material, which have been excavated in the last few decades only, due to developments related to recreational activities and regulation of hydropower resources (Bjørgo et al. 1992; Gustafson 1982).

Developments in construction, industry, infrastructure, and agriculture, have damaged and removed evidence of habitation in a similar way to burial evidence. This is particularly the case for farm settlements in low-lying, arable areas inland and by the coast. Comparatively, outfield settlements have to a lesser extent been subjected to disturbances like those in agricultural areas, and have better preserved constructional features, cultural layers, and associated finds *in situ* (Bjørgo et al. 1992; Martens 1960). They have therefore a higher potential for producing evidence regarding use and deposition of locks and keys, and related artefacts and activity traces, similar to well-preserved evidence of certain central-place and urban sites. The current situation is thus that ‘specialised’ sites have more preserved and *in situ* finds than farms, which was the most common form of habitation.

The main point regarding representativity is that while there has been a massive increase in discovery and investigation of settlements, there is limited evidence of how locks and keys were used at such sites. One factor is that artefacts are often destroyed or displaced by later disturbance, which means that they are not collected through modern methods. This is a problem which is only remedied by the application of metal detecting in later years, a method which in itself is imbued with challenges (see below). Other factors relate to past practices; there is the possibility that keys and locks were not subjected to intentional deposition at settlement sites; past people may have cleaned their houses before leaving and/or destroying their homes (Amundsen and Fredriksen 2014:91); and settlements may have been scavenged upon after abandonment or destruction. Thus, the existence of locking devices in living society are mainly illustrated by burials and by the settlements themselves, which leaves a lacunae of how people acted and interacted with them in everyday life.

The greatest information value of the settlement finds is for considering what forms of locking technology was present at specific sites at different times. By comparing this information with that from other contexts, as well as from wider Scandinavia, it contributes to the larger picture of locking practices known and performed in daily life, and how they developed.

4.3.3 Depositions

As presented in Table 4.2, there are seven finds (in addition to a single find and a potential burial find) that have been interpreted as probable depositions. Their location are in outlying as well as cultivated areas. There are instances where the deposition is in a rockslide or marked by a large stone, or by a stone slab placed over the artefacts. Others seemingly were buried in the soil without visible markings. Locks and keys in such tool hoards are interesting for discussing whether the locks and keys were there to secure the related artefacts or if they themselves were part of the deposition, either as votive offerings or as valuables secured for the future – or both (Lund 2006).

The source-critical issues for depositions is somewhat similar to those of burials and settlements, in that they are subjected to disturbance and destruction, as well as discovery, by the same factors. One challenge is that a deposition may have been misinterpreted – depending on its content, preservation, and location – as a burial, settlement, or single find. The current depositions are generally found in outfields, seemingly uncultivated areas, whereas identifiable depositions related to agriculture, settlements, and water bodies are lacking. As known from elsewhere in Scandinavia, depositions involving locks and keys are primarily water depositions, such as Early Iron Age weapon sacrifices (Ilkjær 1993a) and Viking Age tool chests (Lund 2006). There have also been documented high numbers of keys and padlocks in certain houses, such as at Helgö in Uppland, Sweden (Tomtlund 1972:15–17), which may have indicated a non-utilitarian form of deposition. Thus, it is possible that keys and locks from settlement contexts may have been votive or secular depositions. The same may be the case for finds outside burial contexts at cemeteries, which may have been interpreted as belonging to a disturbed grave. The low number of depositions in the Norwegian material may thus be somewhat affected by preservation, disturbances, and traditional interpretive concepts.

4.3.4 Single finds

Single found locks and keys make up a heterogeneous group of finds that have been discovered by different means. It mainly consists of finds that have been found privately through digging or construction work and metal detecting, as well as finds discovered by professional archaeological excavations, surveys, and the application of metal detecting in such investigations. It does not include finds that may be related to a wider context, such as a settlement, but rather they represent past activity in the form of accidental losses or possibly destroyed or disturbed contexts that cannot be securely determined. The information related to single finds varies depending on how and where they were found, and their inclusion is based on considerations of date and possible relation to archaeological finds in the vicinity. The number of locks and keys found outside archaeological contexts are 65 in total (Table 4.2).

Find circumstance / Potential context	**Iron key**	**Copper alloy key**	**Lock**	***Total***
Private metal detecting	1	13		14
Private activity	5	18		23
Professional metal detecting		1		1
Professional investigation	8	1		9
Unknown discovery	4	12	2	18
Single finds total	*18*	*45*	*2*	*65*
Unknown context	10	38	1	49
Potential grave / burial site	3	5	1	9
Potential settlement	5	1		6
Potential deposition		1		1

Table 4.4. Quantitative overview of single finds by category and material, sorted by find circumstances and their potential contexts.

Table 4.4 above outlines the composition of the single finds and how they were discovered. The most pronounced feature is the near domination of keys. Only two locks (padlocks) are discovered out of context, which both have tentative Viking Age or medieval dates. This illustrates the previous statement that keys are easier to recognise, and perhaps also the tendency that keys were easily lost in the past as well as the present. The majority of copper-alloy keys is also notable. These dominate the finds made by private persons or by unknown circumstances (which are likely also private persons). Copper alloy artefacts are usually more visible and identifiable when found by non-professionals, being less susceptible to corrosion and fragmentation than their iron counterparts. Importantly, private detectorists normally sort iron out, as it gives an overweight of modern-day finds (e.g. Axelsen 2021). This is reflected by the 13 copper alloy keys to the one iron key discovered by this activity.

Most of the finds are not possible to connect to any wider context, but nine may be from graves or are otherwise found in proximity to burials, six are found in relation to possible settlements, and one may be a deposition in a lake.

4.4 Chronological issues

Burial customs and the artefacts burials contain make up the foundation for most of the chronological frameworks for the Iron Age (1.2). Thus, burials are relatively well dated compared to many other forms of contexts. The significant number of burials, their dates and placements in the landscape, makes such evidence well-suited for establishing understandings of the temporal and cultural development of locking technology and practice. However, the material evidence is imbued with two main temporal challenges that concern dating methods and periodization.

The issue of dating is connected to chronological resolution, how precise it is possible to date a find, and whether the date is sufficiently defined to gain insight into the phenomenon in question. Because archaeological chronologies are based primarily on relative temporal estimates of particular artefact categories, and absolute dating methods require certain materials to be preserved, the precision with which different contexts may be dated varies based on what they contain empirically and which dating methods were available and applied. Using graves as an example, some may only be datable to a time frame of several centuries, while others may be placed within decades or even a specific year. A significant part of the burial evidence in museum collections was excavated before the advent of certain absolute dating methods, such as radiocarbon dating and dendrochronology, and remains suitable for such dating methods were commonly not collected. There are also source-critical issues related to radiocarbon dating (Loftsgarden et al. 2013), one of which is the occurrence of longer and shorter plateaus in the ^{14}C calibration curves that result in dates spanning centuries (Gjerpe 2016:204; Ystgaard et al. 2018:57–58, with references).

The variations in chronological resolution poses analytical challenges regarding how individual finds with different temporal spans may be compartmentalised into units of study for comparison and interpretation. The established *mode d'emploi* is to select and emphasise the precise (short) date rather than the imprecise (long) date. Traditionally, the relative chronologies for the Iron Age are based on artefacts that were related to the mid-upper strata of society, such as weapons and jewellery (Table 1.1). The consequence is that the 'lower masses' which were buried without such items, as mentioned above, are left without a similarly defined existence in time (Stylegar 2010:75). For the burials containing locks and keys, the temporal determination of introduction and change is therefore primarily based on upper-strata graves, which may cloud how these artefacts occurred in connection to people from other socio-economic levels of society. Furthermore, the prominent idea that new introductions and innovations were elite-governed and a top-down development may be enforced by mere lack of contrasting evidence. Also, potential later expressions of a phenomenon at other levels in the social hierarchy may be less visible, as when elites cease to use or deposit certain artefacts it may be taken to (falsely) mark the end of a development or phenomenon. This latter point is particularly relevant for the question of how certain lock and key types continued despite significant social transformations, like the ones following the 'dust veil event' in the mid-6th century when significant amounts of elite material categories seem to disappear from the material record (Arrhenius 2013; Axboe 1999; Fredriksen et al. 2014; Gräslund and Price 2012). Variations in chronological resolution (and thus, social and technological resolution) is an inherent challenge in most archaeological endeavours, and is one that is hard to overcome. This is related to the second issue which concerns how finds are placed temporally into periods and phases.

Periodization is a much-debated issue (Røstad 2016; Solberg 2003), and while there is general agreement that temporal units are fundamental to analysing, interpreting, and understanding the past, chronological systems and understandings of time have advantages and challenges (Arnold 2012; Lucas 2005, 2015). One challenge relevant to this study is the abovementioned bias of elite artefacts in the definition of chronologies. Periodic definitions are set on the basis of certain observed changes in the archaeological material, often coinciding with historically documented events – such as the 'dust veil'. However, there are social and material changes that do not correspond to established temporal boundaries, and because of the issue of chronological resolution mentioned above, it is problematic to identify when and where those changes occurred when finds cannot be placed more specifically in time. For the locks and keys, understanding their introduction and change is heavily influenced by how their contexts are dated according to set chronological divides, and not by their potentially dynamic developments in time and space. The result is that the chronological divides are confirmed rather than challenged, and phenomena that were not strictly contemporary are accumulated within temporal boundaries, thus appearing to happen around the same time (cf. Lucas 2015:4–5).

This issue plays into a third challenge regarding periodization, which is how finds that fall on the border between periods and phases should be treated. So-called 'transitional' finds fall onto or across temporal boundaries, which affects both how they may be analysed and understood. Among the locks and keys, there are several finds that are difficult to put into analytically manageable units – for example, the 6th century (between the periods Early and Late Iron Age), around *c*. 800 AD (between the Merovingian and Viking Periods), and the

10th century AD (across the Early and Late Viking Age). While this challenge is not a severe one, it is necessary to be aware of the selections made when sectioning the past into units and placing past actions into those units. This is also why a mass-material is useful in a study like this, as the amount of finds and dates help create a general picture of the development, where the few transitional finds have less of an effect on it, and may be addressed separately.

PART TWO: A Technology of Security

5. Physical boundaries: what was locked?

Before going into the classification and subsequent analyses of the locks and keys, this chapter provides a backdrop for understanding of the classifications and analyses to follow. In principle, a locking device is part of the whole 'thing' that was locked, meaning that the lock and key cannot and should not be regarded in separation from what it secured. It also means that the locking devices can be seen as proxies for the whole, providing information in cases where this is not preserved or present.

In regarding a lock as a boundary upon another boundary (e.g. doors in 3.5), the interrelatedness of the two is central to understanding locking practices and their purposes and significances. Therefore, it is necessary to address how locks were implemented into other physical entities and how these constituted unified boundaries and agents in different forms. This requires presenting an ordered overview of these 'lockable things', demonstrating the differing physical features of the boundaries that locks and keys were part of and designed to 'work' with.

The presentation is divided into three main categories of boundaries: containers, i.e. boxes, caskets, and chests (5.1); architectural barriers in the form of doors (5.2); and fetters and shackles making up wearable fastenings (5.3). Actualising how physical parameters are intertwined with how humans use and relate to things, the differentiation is based on what these items are, what they do, and how humans 'do' them. This entails presenting their form, size, and construction in connection to how they are opened and closed. It makes up a basis for understanding how the mechanisms were constructed and operated and how they worked and developed socially.

5.1 Containers: boxes, caskets, and chests

Beginning with the containers, a few points need to be addressed concerning how they are observed, defined, and ordered. Beside locks, the surviving remains of containers are mainly hinges, handles, fittings, rivets, and cramps, along with the occasional wooden fragment. The containers themselves are rarely preserved in Scandinavian contexts. Insight into how these artefacts looked and how they were constructed, along with what they contained, is severely limited by this fact. However, it is possible to gleam something about the different variations within these artefacts from the metal remains and from the few well-preserved survivors.

Generally, it is challenging to apply terminology to various containers. What separates a box from a casket or casket from a chest? Is it the size, the shape, or what it is used for? Previous works have to a small degree defined the terminology used or been stringent in how terms are applied. The general starting point has been considerations of size, but without setting specific measurements (e.g. Müller 1911; Nerman 1935; Petersen 1951:449). As there is no terminological consensus, the following is how I have approached a differentiation of various container forms. Dimensions is a central feature, but functional and constructional traits are drawn into the definitions.

Judging by the key and lock types present in the material, containers are the most numerous lockable objects in the archaeological material from Norway. Caskets seem to occur more often than chests and smaller boxes (in line with Petersen 1951:448). A likely reason for this is because caskets occur in burials, which is the predominant context type in the material (Table 4.2). Chests are per definition relatively large, and may for this reason have been restricted to sizeable burials such as ship and chamber graves. Arguably, boxes and caskets take up less space and are easier to fit into smaller interments such as boats, cists, and wooden coffins. Such spatial limitations were probably less prominent in cremation burials, where all of the container types could, in principle, be placed on a funeral pyre. Boxes may be less represented because they were more rarely locked and embellished with metal fittings that could indicate their presence.

Mine is not the first attempt at ordering containers. Greta Arwidsson and Håkan Thorberg (1989) have presented a classification of chests and caskets from the Birka burials, which were divided into four groups (A–D), largely based on an earlier study by Thorberg (1973). This has been useful in considering the Viking Age finds, but as this study encompasses a larger material corpus from different contexts, a wider area, and a longer time frame, the overview presented here is more diverse.

Treating the locking mechanisms separately in the next chapter, this overview is mainly based on the construction of the containers and the movements required to use them. Thus, it begins with boxes, which has the smallest and least elaborate construction, before moving on to caskets, and ending with chests. This order illustrates certain elements of increasing complexity in operation that is comparable to that of locking mechanisms, but also of development from small to large, and partly a chronological movement from the Early to the Late Iron Age. What these concurrences may involve and signify in terms of locking practices will be a central point in the later analyses, which will discuss whether there are possible correlations between container forms and lock types, and what different containers were used to secure based on their contents.

5.1.1 Rectangular boxes and caskets with sliding lids

The first container group encompasses rectangular wooden boxes and caskets with a flat, sliding lid. The lid is set into channels in the sides of the case and secured in place by a lock situated underneath the lid (see 6.3.1). When opened, the lid would be slid out from the channels and could be completely removed from the case. Currently, there are no complete examples of such containers with locks preserved, so they are determined by a combination of partly preserved finds.

Wooden boxes without locks have been central in this respect, documenting the existence of such a construction and operative principle. Well-preserved examples in Scandinavia are from the Roman Period. In Norway, these include two boxes from burials at Dyster in Akershus, Eastern Norway (Figure 5.1), and Evebø in Sogn og Fjordane, Western Norway (Figure 5.2), and in Denmark there are three boxes from bog finds: at Vimose, Fyn (Engelhardt 1869, Pl. 17, no. 10), Nydam in southern Jutland, and Garbølle mose by Stenmagle in Zealand (Figure 5.3 and Figure 5.4). The Dyster and Vimose boxes were early discoveries that helped form a functional understanding of how similar containers with locks from the Early Iron Age were opened and closed (Almgren and Nerman 1923; Ilkjær 1993a; Müller 1911, see 6.3.1). These and the Garbølle box, in turn, aided my interpretation of the Oseberg whale bone/antler box lid from the Viking Age (C55000/261, Grieg 1928, no. 201–202, no. 60a, see Figure 6.28). This lid has incised decoration consisting of a ship and a bearded face on the rectangular part, and geometric patterns on the triangular pediment above. As pointed out by Brøgger (1917:29), it looks like a door with a gable. Comparatively, the lockless boxes from Dyster and Evebø have carved geometric patterns on the sides and lid, which give an impression of what locked boxes may have looked like. Further parallels may also be found in the lockless boxes from Dublin, which resemble in size and are elaborately carved in Insular and Ringerike styles and geometric patterns (Lang 1988, DW6, DW7, DW17, DW28, and DW101).

Figure 5.1. Wooden box with sliding lid from Dyster, Ås, Akershus (C9240, Photo: Eirik Irgens Johnsen © KHM, UiO).

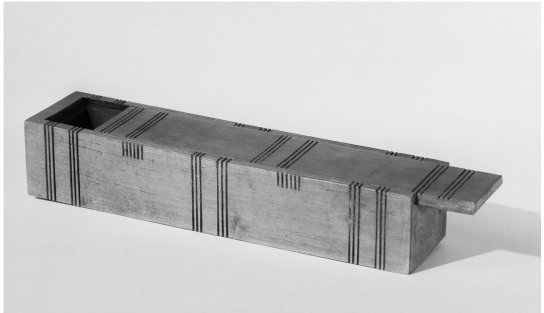


Figure 5.2. Wooden box with sliding lid from Evebø, Gloppen, Sogn og Fjordane (B4590h, Photo: Leiv Espevoll © UM, UiB).

Figure 5.3. Wooden box with sliding lid from the Nydam I bog find in Jutland, containing pieces of metal (Photo: © NatMus).

Figure 5.4. Wooden box with sliding lid from Garbølle mose, Zealand. The Runic inscription reads 'hagiradaR tawide' ['Hagråd made'] (Moltke 1985:88, Photo: © NatMus).

This group includes both boxes and caskets, treated together because they are constructed and operated in the same manner. The difference between box and casket here is challenging. One parameter may be size, but a more specific differentiation may be that boxes generally do not have handles while caskets do. The presupposition is that boxes were likely small and light, easily held and carried with one or two hands, while caskets (and chests) would have been larger and heavier, thus, more manageable to lift, hold, and carry using handles. Here, handles of metal are concrete artefacts that tend to survive archaeologically and provide information about dimension and use. No handles have been documented with locks interpreted as securing boxes, while handles have been found in relation to locks of a larger construction indicating casket-size (e.g. Nerman 1935; see A1 and A3 versus A2 in 6.3.1). It seems to be mainly one handle in such cases, indicating that it may have been attached to the lid. Importantly, though, handles are not always present or identified. It is therefore not a fixed distinction that lack of handles on containers with sliding lids indicate boxes instead of caskets. Rather, the locking mechanism may prove a stronger indication that the container is of a certain dimension if there is little other evidence to go on. Thus, the presence or absence of handles alongside other signs of size, physical construction, and applied lock types, provide several points from which to determine a differentiation – not only between boxes and caskets, but also chests and other forms of containers.

Figure 5.5. Box remains with lock parts and contents from Juellinge Grave 1 (red), with rough estimate of size (yellow) (Photo: © NatMus, edited by author).

In terms of size, there is an unclear range of dimensions within this group of containers with sliding lids. While there is a limited but well-preserved basis for the smallest boxes, this is lacking for larger boxes and caskets. The lockless Dyster box illustrates the smallest range, being 15.6 cm long, 2.2 cm wide, and 2 cm tall. Of those locked, a box from Juellinge in Zealand, treated by Sophus Müller (1911) is one of the few contexts (if not the only) where the size may be estimated from the *in situ* placement of the artefacts (Figure 5.5). The remains had been compressed and moved postdepositionally, which may be why Müller did not suggest any measurements of the box (despite having made a functioning replica). However, from his description of its contents and a bronze fitting with wooden remains indicating the width and grain direction of the wood, a rough suggestion is *c*. 20–22 cm long, *c*. 6 cm wide, and possibly 6–7 cm. tall. As such, it is close in size to the Late Roman Period box from Garbølle, which is 17 cm long, 5 cm wide, and 5 cm tall. In comparison, the Oseberg box lid is *c*. 20 cm long and 8 cm wide. The case it belonged to would have been slightly larger to accommodate the lid, likely by 1 cm in each direction, while its height may only be guessed at, probably around 10 cm. Thus, it would have been comparable in size to the Early Iron Age boxes. As for decoration, there are several cases where copper alloy is used in both keyhole fittings and handles, which would have had a metallic shine to them – as would the iron ones, if polished and cared for. Fittings and handles may have geometric and animal-style patterns, which are mirrored in the motifs on keys. Some of the caskets may also have had carvings resembling those of the small boxes with sliding lids, illustrated above. Paint is also a possibility, although currently not documented.

In summation, boxes with sliding lids were narrow and rectangular, between *c*. 15–22 cm long and *c*. 6–10 cm wide, with locks mounted on the underside of the lid. Caskets with sliding lids were likely larger and with at least one handle, possibly placed on the lid or a handle on each side. It is assumed that the majority of these containers were made of wood, while the Oseberg box demonstrates that there were also examples made in bone or antler.

5.1.2 Bucket-shaped caskets with bolted lids

It is unclear whether the containers in this next group should be defined as boxes or caskets, or neither, as they resemble buckets with lids more than anything else. Currently, the only known examples are from the Oseberg burial, which contained at least two of these artefacts (C55000/76 and C55000/95, Figure 5.6).[1] While initially called buckets (Brøgger 1917:108-109), these were later termed *'tiner'* (Grieg 1928:192-198), likely because they are similar in form to traditional containers called *'tine', laup'*, or *'bomme'* in Norwegian, commonly used for storing and transporting food. However, the Oseberg containers differ from such items in how they are used and constructed, as will be demonstrated below. Because the term 'tine' is strongly associated with the historical objects and their use as food containers, I have chosen not to continue applying this term for the Oseberg artefacts and others like them. Rather, they are tentatively called bucket-shaped caskets, which is descriptive of their form and not imbued with notions of use or cultural significance stemming from later artefacts.

Figure 5.6. Two bucket-shaped caskets form Oseberg (C55000/76 and /95; Photos: Eirik Irgens Johnsen and Mårten Teigen © KHM, UiO).

[1] The alleged bottom of a 'tine' (C55000/272), may or may not have belonged to a bucket-shaped casket. It does not correspond to the ones treated here, being smaller in size and oval shape (18.9 cm x 17,4 cm). However, the smaller casket No. 95 is somewhat oval, and smaller versions are possible from a constructional and functional perspective.

The bucket-shaped caskets in Oseberg did include some food stuffs, but predominantly held artefacts related to textile working (further details are presented in 8.2.4). As for construction, historical ‘tiner’ and ‘bommer’ are sewn from one thin wooden board or *‘spon’* by a technique known as *‘sveiping’* (Swedish equivalents are called *‘svepask’*, and Danish ones *‘spånteine’*). Actually, there are remains of potentially four smaller containers in Oseberg that were indeed sewn in such a way (C55000/164, /215, /270, and /273), illustrating constructional and size-related differences to the containers presented here, which were built mainly in the same way as buckets.

As illustrated by Figure 5.6, these caskets are made from vertical wooden staves fastened around a circular base, held together by wooden hoops (preserved in fragments, following Grieg 1928:192, 195). Based on marks visible in the wood, No. 95 had three hoops and No. 76 had six. Their sides are slightly slanted, somewhat wider at the base. The circular lid rests on top of the sides, placed between two extended staves set opposite to each other. The extensions are of different size and shape, the smaller has a circular hole and the larger has a rectangular hole. Both the bottom and the lid are made from whole pieces of wood. The lids are arched – hollowed out rather than bent – with an eyelet fastening in the middle, likely for a carrying ring or loop.

They are relatively similar in size according to measurements taken after their conservation and reassembly (Grieg 1928:192, 195). Casket No. 76 is the largest, *c*. 33 cm wide at the base and 31 cm at the top; the staves are about 19.5 cm tall and 1 cm thick, except for the extended staves, which are *c*. 25 cm. The width of the lid is not stated, but considering it is in line with the case, it must be about 30–31 cm in diameter. No. 95 is somewhat smaller; its bottom is not completely round, measuring 24 x 27 cm. The staves are 18.5–19 cm tall, the extended staves 21.5 cm. The lid is more fragmented and without stated measurements. The circumference of the top is not provided either, but a rough estimate may be around 23–25 cm wide, which would be mirrored in the lid’s width.

The bucket-shaped caskets from Oseberg are secured by fastening and locking the lid to the extended staves on the case. When unlocked and opened, the lid would be lifted and removed from the case. Contrary to the former group of containers with sliding lids, it could be put back on without being locked. However, it would then be loose and impossible to be carried from the suspension ring or loop, and the casket would have to be lifted by the case. Only the larger one has preserved metal lock remains on the lid, but the other was also locked in the same manner. This is determined by two observations, illustrated by Figure 5.7: the lid has a rectangular, cut-out section underneath for a wooden lock bolt, and the shape of the holes in the extended staves are made to accommodate a circular iron bolt on the lid and the rectangular lock bolt. Although the lid of the smaller casket is in poorer shape than the larger one, when regarded together, it is clear that they are constructed from the same template. Whether they were made by the same craftsperson(s) is more uncertain, however, as they differ in terms of decoration.

Both caskets have traces of decoration, the larger to a greater extent than the other. The smaller casket has three plain horizontal bands going around the case, at the top, the middle, and the base, indicating the placement of the wooden hoops. In the two sections between the bands, there are criss-crossing lines creating a diamond pattern (Figure 5.7, right). This matches the pattern of rivets on one of the two large chests from the same burial (C55000/154, Figure 5.26 below). There is seemingly no decoration on the bottom, neither inside nor underneath, and there are no visible traces on the poorly preserved lid. As for the larger casket, its six hoops covered much of the surface, but four lines run around the base; the bottom has two sets of concentric circles on the inside and the outside (Grieg 1928:192). Here, each circle has three lines, and on the inside there are twelve or more outwards-running lines on the outer ring (Figure 5.8, left). Similar circles may found on several other containers from the burial (C55000/19, /22, /131, /259; Brøgger and Shetelig 1928:Pl. XII). There are also double lines outlining the extension holding the lock mechanism, drawing a five-sided house-shape. Mirroring the decoration on the case, the lid has three sets of concentric circles, four lines in the outer circle and three in the inner circles. Additionally, two sets of three-lined semi-circles are repeated four times across the lid, in such a way that it creates a near-complete looped square symbol – known as a *valknute* in Norwegian terminology, or Saint John’s Arms in English (Figure 5.8, right). The closest parallel, to my knowledge, is a motif covering the lockable door on a medieval storage building, i.e. *stabbur*, at Nordre Gryte in Fyresdal, Telemark, Eastern Norway (Berg 1998:102). Concentric rings are also seen on a door on a similar building at Klevar in Sauherad, also in Telemark (Berg 1991:41).

At present, these two caskets are unique, as are their locking mechanisms. The uncommonly high preservation of the Oseberg burial shows how these containers were constructed, but in less well-preserved finds, it is possible that such containers may have deteriorated beyond recognition or have been classified as buckets, metal remains not having been recognised as lock parts. This, however, remains a speculation, at least until an eventual revision of bucket finds produce indications of similar containers.

Figure 5.7. The lid and the case of the smaller bucket-shaped casket from Oseberg (C55000/95, Photos: Isabel Cunen Rynning © KHM, UiO).

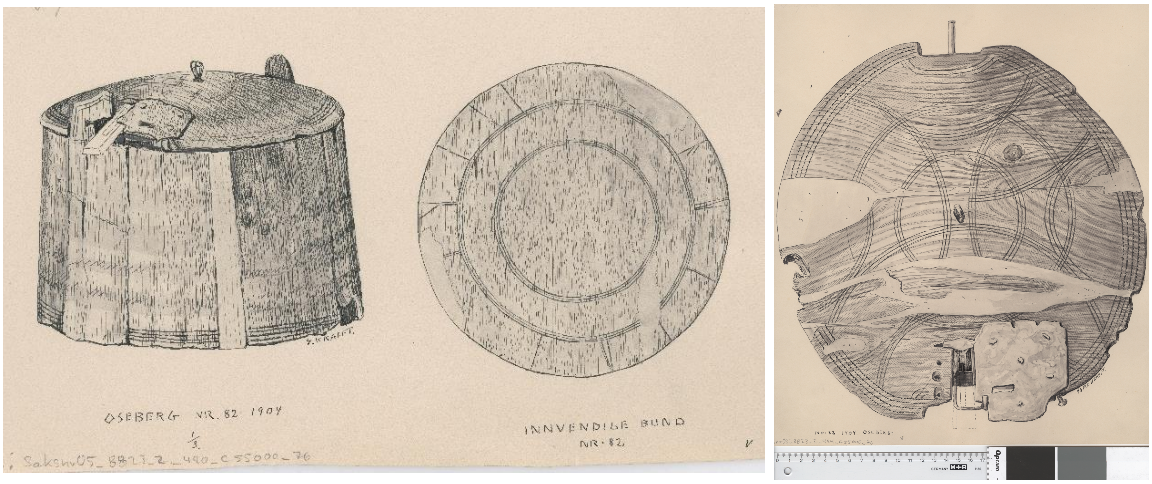


Figure 5.8. Drawings of larger bucket-shaped casket, showing the placement of the lock as well as the decorations on the outside, inside, and on the lid (Illustrations: S. Krafft, © KHM, UiO).

5.1.3 Square caskets with bolted lids

The next group of containers are made up by square caskets that have lids fastened in a similar way to the bucket-shaped caskets. Three finds make up the basis for this group. The first is the Bamberg Casket, named so because it resided in a church in Bamberg, Bavaria, Germany, from the 17th century onwards, now on display at the Bavarian National Museum in Munich (Muhl 1990; Roesdahl 2010). The second is a recent find from 2004, in a likely female Viking Age burial at Haldum in eastern Jutland, Denmark (Jeppesen and Schwartz 2007). The last is from Næsby on Fyn in Denmark, discovered in 2009 (Juhl 2012). In the following, the emphasis will be placed on the former two. A comparison by Jens Jeppesen and Marianne Schwartz has shown that the two have quite different preservations and biographies that in combination form a near-complete picture of how such caskets were constructed and operated.

The Bamberg casket is entirely square, *c*. 25 by 25 cm, with a raised, pyramid-shaped lid, about 14 cm tall in total (Jeppesen and Schwartz 2007:129). It is made from oak, encased in gilded copper-alloy fittings and likely walrus ivory panels elaborately decorated in Mammen Style (Figure 5.9). Based on the decoration it is suggested that the casket derives from Denmark, produced in the second half of the 10th century (Jeppesen and Schwartz 2007). The Bamberg casket no longer has its original lock, which based on the old keyhole in the lid was a push mechanism (see 6.3.3). The casket was at some point fitted with hinges and a different lock, which included cutting a new keyhole in the front (Jeppesen and Schwartz 2007:129) – the form indicates a turning mechanism. The later lock is now removed, while the hinges remain, and the inside of the casket lid is covered in paper, hiding further constructional details (Jeppesen and Schwartz 2007:129–130; Muhl 1990:252–254). Thus, exactly how the Bamberg casket had been locked and operated in its original, 10th century form was unclear before the discovery of the Haldum casket.

Figure 5.9. The Bamberg casket in current condition (Photo: Bavarian National Museum, Munich).

Figure 5.10. Reconstruction of the Haldum casket (Jeppesen and Schwartz 2007:135, Fig. 18).

Contrary to the Bamberg casket, the Haldum casket had no preserved remains of its case, only the lock parts and iron fittings, and their placement. However, the metal remains had imprints of the wood in the corrosion, which provided additional information about its construction and its material. It was made up by vertical wooden boards of oak, much like the Bamberg casket, but without the ivory panels and decorated fittings (see reconstruction, Figure 5.10). The analysis by Jeppesen and Schwartz demonstrated the function of the lock mechanism, also concluding that the Bamberg casket had been originally fitted with an identical lock.

When the locking principle became clear, the uncommon bolts and fittings, and the lack of hinges and hasps became understandable (Jeppesen and Schwartz 2007:127). Resembling the bucket-shaped caskets, the locking mechanism was placed at one side, but here there were three slidable bolts in the sides, securing the lid to the casket case (Figure 5.11). The lid would therefore have been completely removed when opened (Jeppesen and Schwartz 2007:134). Neither casket have any remains of handles, indicating that it would have been lifted and moved without the use of such aids. However, the Næsby casket does have a ring in the centre, potentially a handle for lifting the lid and the casket (Figure 5.12).

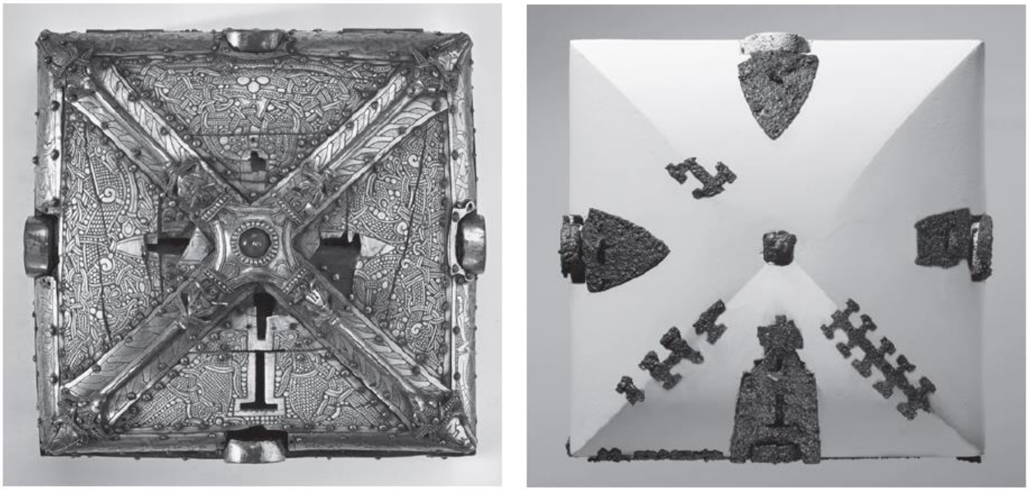


Figure 5.11. The lids of the square caskets from Bamberg and Haldum displaying the similarities and differences in their respective constructions (from Jeppesen and Schwartz 2007, Fig. 11, Photos: Bavarian National Museum and Moesgaard Museum).

In terms of decoration, the three caskets present two rather different expressions (Figures 5.9–5.11). Bamberg has detailed animal, human, and plant motifs in gilded copper alloy and ivory covering most of the surface, with a rock crystal at the centre of the central cruciform fitting on the lid. The majority of the decoration is Mammen Style, but the plant vines along its base is also characteristic of Ringerike Style. As for the cruciform fitting, this is more anomalous, and is not immediately recognisable as Scandinavian (Rebeca Franco Valle, personal communication, 2019). Haldum has geometrically formed iron fittings following all corners and angles, but otherwise no stylistic motifs. Næsby is more heavily corroded, but has a similar and less elaborate arrangement. As such, the two seem more sparse in comparison to the Bamberg casket, but as pointed out by Jeppesen and Schwartz (2007:135), Haldum was covered in over three metres of fittings, and may have been carved and painted in addition. This is an aspect that should be kept in mind for all of the containers, and possibly also for the doors (see below). The richness expressed in metal and ivory may have had its counterparts in the form of painting and wood-work, of which now little remains.

Square caskets are currently only documented by these three finds. Additionally, two cruciform fittings from Halleby Å near Tissø, Zealand, have been argued to indicate that containers of similar construction were produced there, as both were found with a tool chest holding metal-working equipment, and one showed signs of being unfinished (Jeppesen and Schwartz 2007:135–136, Figs. 15 and 17). Considering the lack of such cruciform fittings on both the Haldum and the Næsby casket, this interpretation is considered as tentative. For the identification of square caskets, knowledge derived from their construction and the locks that secured them is the most certain basis, and may lead to the discovery of others among existing or future finds.

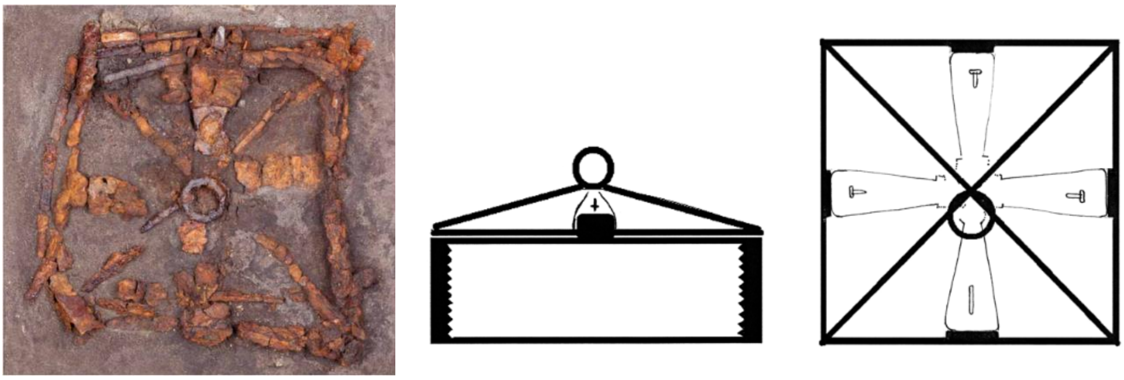


Figure 5.12. Left: The casket from Næsby, preserved and encased in the soil from the burial. Right: schematic drawing of the Næsby casket (Photo: O. Jespersen, Illustration: H.B. Juhl, from Juhl 2012).

5.1.4 Oval caskets with hinged lids

The next group of containers are also caskets, but differs from the former in having a lid attached by hinges. This is a common trait for all of the subsequent groups in this presentation. Such an arrangement meant the lid could not be removed (and potentially misplaced or lost), but would be raised and turned over the back of the casket case, as in most modern equivalents. This particular group is characterised by having a construction based on an oval template, rather than circular or rectangular. The main basis of this group is two finds: the so-called Cammin casket and a recent find from Norway, at Langeid in Bygland, Aust-Agder, Southern Norway. Three additional finds may also belong here, as I will present in the following. Contrary to the Bamberg and Haldum caskets that complement each other, these finds reflect different ways of constructing and operating oval caskets.

Figure 5.13. Plaster cast of the Cammin casket (from Stern and Dale 2016:46).

The first is demonstrated by the Cammin casket (Figure 5.13). The name comes from Kamień-Pomorsky in current-day Pomerania, Poland, where it was kept in the St. John's cathedral at least from the early 17th century, before it was lost at the end of World War II (Roesdahl 2010:150–151). It has also been called the Shrine of St. Cordula, as it allegedly held the reliquary of this saint, belonging to the legend of St. Ursula. After the war, the casket was never retrieved, believed to have been destroyed or looted; now it is only known through descriptions, pictures, and casts (Mathisen 2017; Roesdahl 2010; Vandenbrouck-Przybylski 2011). Currently, there are about 24 known casts at various museums and institutions in Europe, and on private hands (Poppe 2018:37, Fig. 9). The following is based on this documentation and on work by Adolph Goldschmidt (1918), who studied the original in the early 20th century, Haakon Shetelig (1918), and later studies by Arnold Muhl (1990) and Else Roesdahl (2010). The construction of the casket beyond its decoration and materials has been given little attention. As the following will illustrate, there are aspects to its make-up and function that are equally interesting as its history.

The Cammin casket was made from a wooden frame with gilded, copper-alloy fittings and twenty-two (possibly elk) antler panels decorated in primarily Mammen Style. It was very similar to the Bamberg casket in decoration, both believed to have been produced in Southern Scandinavia or by Scandinavian artists around the late 10th century or 1000 AD (Goldschmidt 1918:59; Roesdahl 2010:149, with references). The form of the Cammin casket was quite singular, described as 'house-shaped' (Roesdahl 2010:151), seemingly reflecting the construction of Late Iron Age longhouses. Its form is also reminiscent of hogbacks, house-shaped monuments in stone (Lang 1984:95; Williams 2016:508). Rather than completely oval, it has rounded sides at the front and back, with straight ends that resemble gables. As such, the case is somewhat broader and squatter in shape than actual houses. Unlike most caskets it stands on six short legs – of two different kinds – which are likely later additions at separate stages (see below). The bottom of the casket had been renewed, according to Goldschmidt (1918:59). The lid is arched and roof-like, fitted with twelve protruding animal heads placed around the outer rim and ten set along the central arch. The original was 63 cm long, 33 cm wide, and 26 cm tall (Goldschmidt 1918:59)

In addition to its unique form, the construction and operation for opening and closing the Cammin casket is equally uncommon. Judging from descriptions and casts, it did not have a lid that could be lifted in its entirety; the central panel on the front of the lid was made into a square latch with metal fittings framing it. The latch was attached by broad hinges at the top, and fastened by two animal-head hasps placed into the lock plate on the front below. What specific locking mechanism it held is uncertain. To my knowledge, there is no documentation about the internal mechanism, as all descriptions are of the outside. The only indication is from the lock plate and hasps. These are best documented by Goldschmidt, who published a series of photographs of the original (Figure 5.14). Here, the presence of two hasps and an upside-down L-shaped keyhole suggests that it was operated by a turn lock (see 6.3.2). However, there are signs that these were not functional at the time of documentation, that there was not an operational mechanism on the inside, and may not have been for a long time.

Goldschmidt (1918:59) had noted that the lock plate had been secondarily altered. As illustrated in Figure 5.14, the lock plate is placed off-centre and partly over the front antler panel. The panel is visible through the bottom part of the keyhole, and there is something else, likely metal, visible above it. The majority of the keyhole was therefore blocked, and it would not have been possible to insert a turn key through it. Furthermore, the placement of the haps is not in line with a functioning mechanism, as they overlap with the antler panel inside. If there was once a lock bolt that secured them, it was not operational in this state. Additionally, the lock plate displays signs of having been cut on the right side to fit between the vertical bands, and the keyhole shows signs of wear or alteration. These observations question whether it may have been taken from a different container and adapted for the Cammin casket, or if the casket was rebuilt at some point, causing the lock plate to be moved from its original position. Added together, the casket seems to have been impossible to lock and the hasps may only have served to keep the latch closed.

Figure 5.14. The lock plate and animal-head hasps of the Cammin casket (from Goldschmidt 1918).

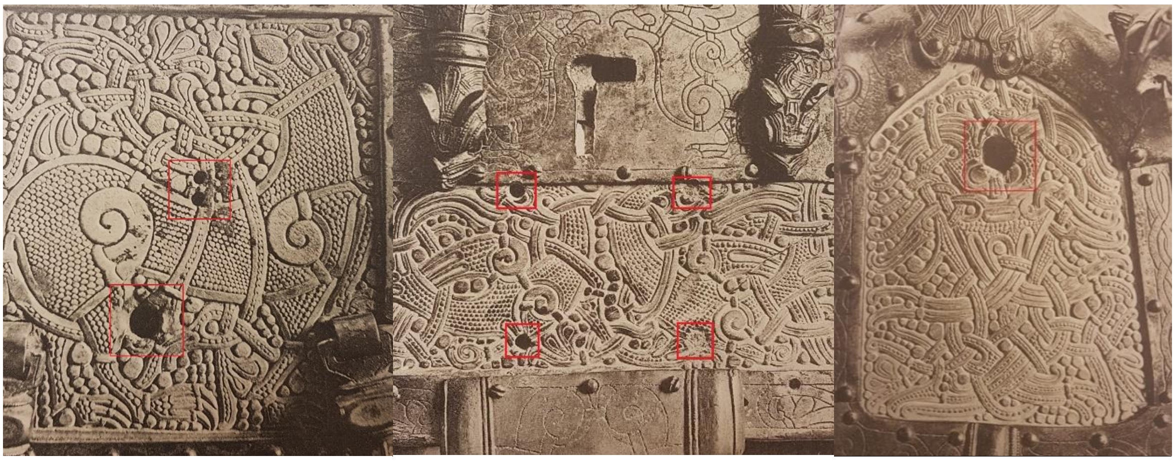


Figure 5.15. Photos of the now lost Cammin casket, showing circular perforations (red squares) on the latch, the front, and the right side panel (from Goldschmidt 1918, edited by author).

The photos by Goldschmidt show circular holes of different sizes at different places on the casket: in the latch plate, one larger and two smaller; four small holes in the front panel below the lock plate, and a larger one in the right side panel (Figure 5.15). When they were made and for what purpose is not known. None of the casts have these holes represented, as far as I am aware. Nor have they replicated the flat-headed screws on the lock plate and foot, visible in Figure 5.14, which must have been from relatively recent repairs.

The small latch does set certain limitations for what kind of contents could be kept in the casket, and how things were put in and taken out. Roughly, it was *c*. 18 cm x 18 cm, which would also restrict visibility and light into the casket. This construction is contrary to all other remains of containers from the Viking Age (and earlier), but has parallels to Christian reliquaries and portable altars (e.g. Altar of Countess Gertrude, 11th century, Lower Saxony, R. Franco Valle, personal communication, 2019).

There are also no Scandinavian parallels to the hinges attaching the latch, nor to how the hasps are fastened. Thus, if they are later alterations, the hasp fastenings are likely so as well. Additionally, the hasps do not match, which in highly uncommon. Hasps in Scandinavian finds are normally identical, made as a set, while these are similar, but not the same. The hasp cramps are fastened into the decorated panel, rather than riveted to the metal fittings, interfering with the decoration motif. A similar case may be seen in the Anglo-Saxon Gandersheim Casket, where also broad cramps are set into the front panels, for unknown reasons from a functional perspective. This way of mounting the hasps make them stand slightly angled, meaning that their hoops would not enter the lock plate in a straight manner. However, as pointed out above, locking functions may not have been a consideration behind their placement.

Stylistically, the Cammin casket has been considered typical of the Mammen Style (Fuglesang 1991:90, no. 15). However, while the antler panels and some of the fittings have Mammen Style, there are also fittings with Ringerike Style (Rebeca Franco Valle, personal communication, 2019). These styles are relatively similar and overlap in time in the early 11th century (Fuglesang 1980). The motifs on the panels show a clear plan in placement and design (Goldschmidt 1918:59; Muhl 1990, Abb. 20 in Roesdahl 2010, Fig. 2), while those on the fittings are variable and different. From a constructional standpoint, and considering the evidence of alterations, it may be that the fittings were not all designed for this particular container. The Cammin casket in the form it had before it was lost was likely assembled sometime during the 11th century (Franco Valle, personal communication, 2019).

Regarded together, the unusual features of the Cammin casket suggests that there have been several alterations to its form at different times, some of which may have happened at the end of the Viking Age, others later. One possible interpretation is that the house-shaped casket with the central latch was a transformation of a pagan casket to a Christian reliquary. Several other reliquaries are house-shaped, such as the Anglo-Saxon containers found at Melhus and Setnes, and ‘Ranvaik’s casket’ which was also found in Norway. The house shape is thought to be related to a notion of the container acting as a house for the dead (Anker 1989:1–13). As such, this interpretation is in line with theories that the Cammin casket held the remains of St. Cordula or was otherwise used as a reliquary (Mathisen 2017; Poppe 2018:29–30). Roesdahl (2010:159) has argued that the Cammin and Bamberg caskets were produced for secular purposes because they were lockable, which neither of the mentioned reliquaries were. I support this interpretation, but tentatively suggest that at least Cammin may have been transformed for non-secular purposes, in which relation its lock may have lost its practical function. It is uncertain where such a transformation may have happened, and by whom, but it may have taken place sometime between 1000 and 1100 AD, during which period Scandinavia became fully Christianised.

Regardless of its biography, as a container from the Viking Age or around the period transition, it stands out in more ways than one. The casket has a range of features not observed before among Scandinavian containers, and, while the knowledge about these artefacts is steadily increasing, finds that may shed light on these questions are still few. What it does attest to, is how oval caskets of antler, copper alloy, and wood may have been constructed and operated, which leads on to the second find documenting such containers, here in wood and iron.

In 2011, a fragmented casket was excavated from a double male and female grave at Langeid in Bygland, Aust-Agder (C58880/27, Wenn 2016). The burial, Grave 6, was dated to the late Viking Age, a German pfennig providing a *terminus post quem* of 983–996 AD (Wenn 2016:39). The casket was discovered as an oval circle of band-shaped iron fittings along with a mounted lock, a ring handle, and four cross-shaped fittings that were likely hinges. From their placement, the casket measured *c*. 36 x 22 cm and was made of pine (Wenn 2016:32, with references). In terms of construction, there are a few indications of how the oval shape was achieved. On the remains of the lock mechanism, the length of the rivets indicate that the wood was about 1 cm thick, and mineralised wood shows the grain going vertically. Thus, it is likely that it was constructed with vertical staves in a similar way as the bucket-shaped caskets from Oseberg. The lid may have been either flat or domed.

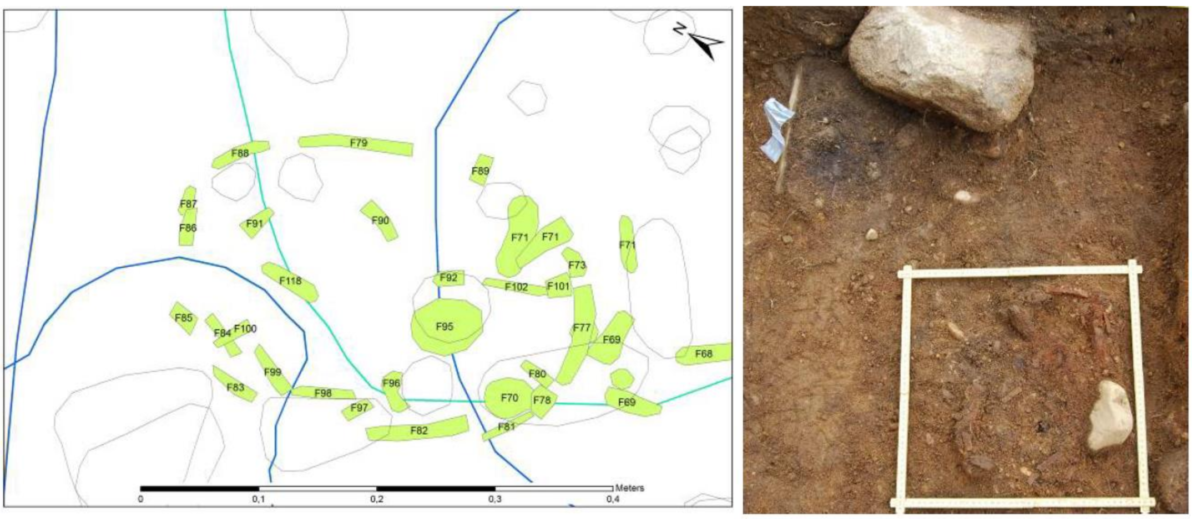


Figure 5.16. Plan illustration and in situ photo of the casket from Grave 6 at Langeid (C58880/27, from Wenn 201,6, Fig. 18).

There are some source-critical aspects to the Langeid casket. The fittings lay somewhat stretched out, along with larger stones, indicating that the casket may have been compressed and pushed apart postdepositionally, so its form may have been less oval and smaller. Additionally, the burial did show signs of having been disturbed or broken into in the southern part (Wenn 2016:35). The northern part with the casket was considered belonging to a less disturbed area (Wenn, personal communication, 15.01.2019), but there are indications that it may have been looted as well. The lock and the hinges were particularly displaced from where they were supposed to be if the casket was intact, which may have been a result of intentional actions.

The other three potentially oval caskets in the material are from two Early Viking Age and one Late Iron Age burial, all gendered female. The first is from Tune Store in Sarpsborg, Østfold, Eastern Norway, the contents of which included a key (C37689d), a casket handle and fittings. The handle and fittings were found by a 30–40 cm unclear ring in the soil situated in the centre of the burial, interpreted as an imprint of a casket. Whether the ring was circular or oval is not known, but the handle and fittings indicate that it was not a casket of the bucket-shaped kind, but likely one with a hinged lid. Lacking lock parts makes it uncertain whether the casket was lockable, although the key could possibly have belonged to it. The second burial is Søberg from Bø in Nordland, Northern Norway. It also contained a key (Ts11649/8), which is unfortunately lost. Like in the former, there were traces of an oval casket and a handle, but little further information, and no preserved lock remains (Klokkervold 2015:63, with references). The last burial is from Fjermestad in Time, Rogaland, Western Norway, which held a key and a potential lock fragment that may have corresponded (S9062d, g). These items were found in a rounded pit inside the burial chamber, 65 x 48 x 21 cm in size, suggested to have held a casket. These dimensions provide a rough outline for an oval casket, but it could also be that a rectangular casket was placed in an oval pit.

These three examples and the Langeid casket provide unique insight into the existence and possible construction of wooden oval/rounded caskets. Still, there are unknown aspects here that future finds may hopefully remedy. The Langeid casket also sheds some light on how the Cammin casket may have been originally constructed, with a fully hinged lid – that is, if my hypothesis of it having been transformed is correct. Whether it was or not, the Cammin casket is the most well-documented case of oval containers, but is also so particular that is unlikely to be representative for the group as a whole. Here, the casket from Langeid, although fragmented, is potentially in line with more ordinary containers.

5.1.5 Rectangular caskets and chests with hinged lids and flat base

The next group encompasses rectangular caskets with lids that were lifted, fastened with hinges at the back and hasps at the front. Containers of this kind are separated from those of the next group by one main feature: they rest on their base rather than standing on legs. This is mainly a constructional differentiation in how the parts of the cases were formed and assembled. Here, all parts are rectangular, held together by cramps, rivets, and fittings, as illustrated below by a reconstructed casket from Birka (Figure 5.17).

Figure 5.17. Reconstruction of rectangular casket with turn-and-slide lock, one of two hasps, handle, and banded fittings from Birka grave Bj 639 (Photo: © SHM).

In principle, not having legs is mainly considered a characteristic of caskets, which were small enough to be placed on top of tables, benches, and so on. However, flat-bottomed chests could also have been placed the ground, as demonstrated by chests from medieval and later periods (Anker 1989). Legs on containers may have served to keep them raised up from eventual moisture in earthen floors. If so, chests with flat bottoms may have been more feasible in buildings with non-earthen (e.g. wooden) floors, on which they would be less susceptible to rot and mould. There is limited evidence of such chests from the Iron Age, currently represented by three finds from the Viking Age. The first is a large chest from Grave K/XV at Kaupang in Larvik, Vestfold, Eastern Norway (C57059). Little remained of the wood apart from impressions in the earth and its outline was unclear, but its dimensions were estimated to 120–145 cm long, 65–75 cm wide, and at least 20 cm deep (Blindheim and Heyerdahl-Larsen 1995:44–45). The second find is from Grave 7 at Forlev in Zealand, Denmark, also dated to the Viking Age. The chest was 140 cm long and 50 cm wide with angular hinges and fittings, interpreted to have had a flat base (Brøndsted 1932:19–192, Fig. 102). The third is a chest from a Grave 1160 at Lejre in Zealand. This was *c*. 147 cm long, 37 cm wide, and *c*. 28 cm tall, but the length had been altered and would originally have been shorter (Andersen 1993:58). Based on the hinges and fittings, which were preserved *in situ*, the chest had a flat lid and most likely a flat base (Andersen 1993:58, Figs. 76–78). The chest had a lock with a long lock plate, which according to the plan drawing was situated off centre in the grave. This would have been centrally placed on the original chest, as illustrated in the reconstructive drawing below (Figure 5.18). The drawing has incorporated the extension into the length, so I suggest from the burial plan that the chest had been *c*. 110–120 cm before it was altered. The use and contents of these chests will be further discussed in Chapter 8.

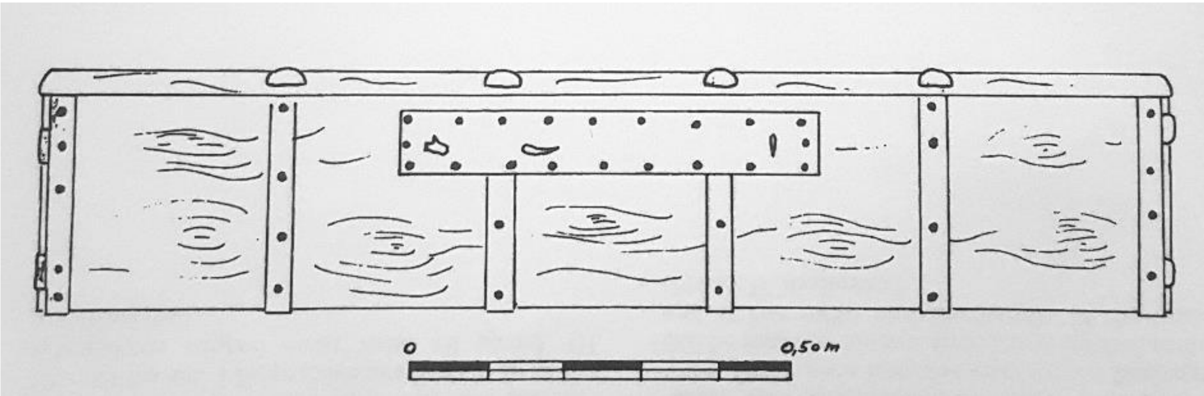


Figure 5.18. Reconstructive drawing of the flat-based chest from Grave 1160 at Lejre (from Andersen 1993, Fig. 79).

Judging from the occurrences of hinges, hasps, and angled fittings rectangular caskets with hinged lids seem to be the most common form of container. Whether they had flat bases or legs is generally difficult to determine, as the wooden remains are often absent. It is possible that caskets of this group also had square constructions like Bamberg and its siblings (C53654 in Gjerpe 2005:60), but the general impression based on well-documented finds is that they had elongated fronts and backs and shorter sides. The lids may have been flat or arched, which can be determined from hinges and fittings, but most easily from the hasps, the angles of which may be straight or wide. While the Forlev chest and Birka casket had flat lids, the Kaupang chest had two wide hasps and, therefore, an arched lid (Blindheim and Heyerdahl-Larsen 1995:45, Pl. 41 g). A similar difference is observable in the remains of two caskets from Grave 4 and Grave 20 at Fyrkat, northern Jutland, Denmark (Roesdahl 1977). Here, both had similar locks, but had flat and arched lids respectively.

There may also have been variations in how the caskets and chests were joined. The Birka reconstruction above shows flat planks held together by broad and elaborate fittings, fastened by nails, but this may represent a rarely well-fitted casket. The metal remains of containers beyond locks, hasps, and hinges in the Norwegian contexts are generally sparse – mainly nails and small fittings for rims and corners. Thus, the fittings were largely enforcements, but the wood was held together by different forms of joining techniques. One technique may be seen in container remains from 7th century burials at Buckland in Dover, southern England (Evison 1987:102), where cases were joined together by box joints and strengthened by small iron fittings (Figure 5.19). It is not unlikely that this technique was applied in the Norwegian area as well. Another way of joining is illustrated in the group with legs below. Thus, the joining techniques within and between groups likely varied, which would also affect what physical remains the different containers would leave behind and how they may be identified.

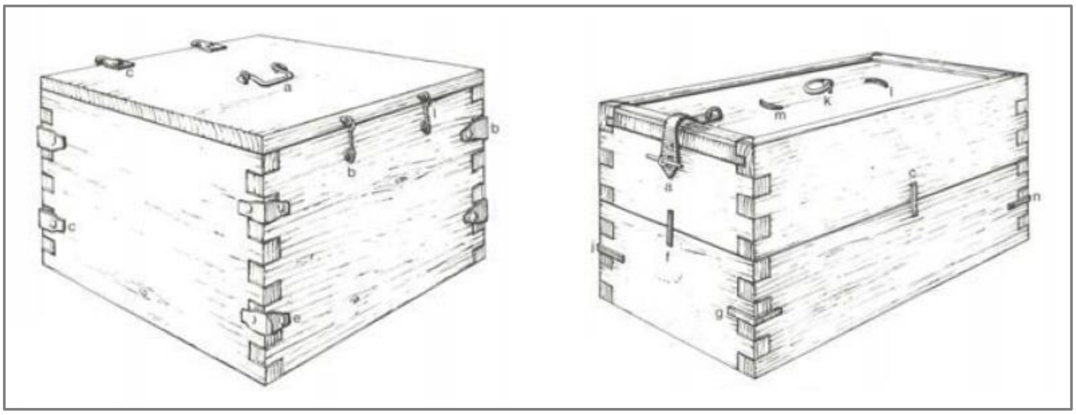


Figure 5.19. Reconstruction of caskets from Graves 43 and 143 at Buckland cemetery in England, respectively dated to the second and fourth quarter of the 7th century AD (from Evison 1987:102, 175–176, Text fig. 18a, b).

When it comes to size, there is a relatively wide range of variation in rectangular caskets and chests. The caskets are generally 20–40 cm in length and 20–30 cm in width. One example is the Late Migration Period casket from Sande in Farsund, Vest-Agder, Southern Norway (C55731), which I suggest was *c*. 40 cm long and *c*. 30 cm wide based on its outline in the burial (Lund and Engebretsen 2009:29). Somewhat smaller was a Viking Age casket from Sandal in Jølster, Sogn og Fjordane, Western Norway, around 25–30 cm long (B11413, Bakka 1962:26–30). This corresponds to the 7th century caskets at Buckland (Evison 1987:100), and the casket from Grave 4 at Fyrkat, which was between 25–35 cm long (Roesdahl 1977:95–96, Figs. 104 and 124). Some of the caskets were relatively narrow, as demonstrated by a richly embellished casket from Grave 321 at Lejre and the previously mentioned from Bj 639 at Birka. The former was *c*. 37 cm long and 18.5 cm wide (Andersen 1993:17–18, Fig. 22), and the latter 46 cm long, 20 cm wide and 17 cm tall (Arbman 1943:216).

Larger than these is a container from a Viking Age burial at Skedsmo Prestegård in Akershus, Eastern Norway (C15801–02, see details in 8.2.4). According to Anders Lorange (1869:45), the container was 'a foot tall and one cubit ('*alen*') long'. A foot has been defined around *c*. 30–31 cm for a long time, while the length of a cubit has varied. At Lorange's time it was around 62.7 cm (Winge 2004), which fits with a weaving batten of 52 cm being found inside or on top of the casket. It is close in size to the smaller chest from Oseberg, presented in the next group. Thus, one could argue whether the Skedsmo container should be considered a chest or a large casket. It is far smaller than the chests from Kaupang and Forlev, which represent the largest of the flat-based, rectangular containers (and of all lockable containers, to my knowledge). There is a considerable gap between these in terms of size, as I know of no other examples from this group with lengths between 65 and 120 cm. As stated earlier, it is uncertain where the line should go between the two terms, and the uncertainty tends to centre on containers of lengths between 50 and 60 cm. For example, a container of the next group from Hedeby measuring about 50 cm long, is considered a chest (Kalmring 2010b:283). There is therefore a fluidity in these artefacts that resists strict terminologies. However, in order to establish an outline of what is referred to when discussing rectangular chests and caskets, a tentative differentiation may be set around 50 cm, with those from 25–50 cm making up caskets, and those from 50 cm and up being called chests. The Skedsmo container is therefore here considered a chest.

Concerning decoration, the fittings, hasps, and lock plates are the parts of these caskets and chests that most often have identifiable embellishment. Animal-head hasps is a decorative feature on certain caskets and chests of this kind, as well as the next group. There is rarely observable decoration on lock plates, but one exception is the casket from Grave 4 at Fyrkat, which was covered in Jelling/Mammen style decoration (Roesdahl 1977:136, see Figure 6.81). Like in the smaller containers, the wood may also have been decorated and worked alongside metal embellishments. For instance, the Birka casket's now corroded metal fittings would have had a shining copper or brass colour, and it also had traces of red, black, yellow-white, and possibly blue paint in geometric style (Arbman 1940, Abb. 176 a-d). Thus, painting as well as carving may have been common and combined with the metalwork.

5.1.6 Rectangular chests and caskets with hinged lids and legs

The sixth and last group of containers encompass mainly chests, as well as examples small enough to warrant a discussion whether the term casket is applicable. The characteristic trait that separate these from the former group is that they stand on legs, the bottom board being raised up from the floor and fastened into rectangular cuts in the side boards. In most of these chests, the side boards are extended into legs, exemplified by the chests from Oseberg and Mästermyr in Gotland, Sweden (Figure 5.22). The chest from the harbour at Hedeby (Figure 5.20), shows a construction where the front and back are extended as well, so that the chest rests on all its four sides (Kalmring 2010b:283). From a constructional standpoint, this mounting is stable, requires limited use of metal fastenings, and may have been resistant to breaking.

The chests are generally characterised by having a trapezoid shape with inward-slanting sides, broadened at the base. The degree of the slanting varies, the sides of the Mästermyr chest are near straight while the Hedeby and Oseberg chests have more marked angles. The lids are commonly arched with variations in height; however, as shown in one of the Oseberg chests (C55000/175, Figure 5.24), flat lids do occur. The lids are fastened by hinges or cramps at the back and locked at the front. Handles are rare in these chests, and the few that have them only have one, placed on the lid – likely for lifting and lowering the lid, potentially also for carrying the chest.

The smallest member of this group represents the terminological challenge in differentiating between caskets and chests. It consists of the back and lid of a rectangular container from Oseberg (C55000/268, Grieg 1928:198–299, no. 103, Figure 5.23). Its partial preservation is not the challenge, but its construction and dimensions. It is built just like the larger chests of the group, but is only *c*. 30 cm long. The constructional feature indicating a chest form is the notches on the lower corners on the back panel. With parallels to larger chests, these suggest that the side panels extended into legs, onto which the back and front panel would have rested. It is not a completely diagnostic trait, as the smaller Oseberg chest does not have such notches (Figure 5.24). However, it seems a most common feature in this group. Thus, this container could be termed a chest-formed casket or a small chest, depending on whether form or size is the most significant feature. The distinction is not necessarily important, but with the aim of creating a clear and consistent terminology, criteria need to be consciously addressed. While I would be inclined to put anatomy before size and call it a small chest, such a stance would diverge from and undermine the size differentiation outlined in the former group. Therefore, this artefact is placed among the caskets.

Figure 5.20. Small oak chest from Hedeby harbour (Kalmring 2010a, Abb. 314).

Figure 5.21. Reconstruction of small chest from Chamber grave 5 in Hedeby (Maixner 2010:105, 209, Abb. 127).

Figure 5.22. The Mästermyr chest from Gotland (SHM 21592:132, Photo: © SHM; Illustration: from Arwidsson and Berg 1983).

Figure 5.23. Back and lid of casket from Oseberg (C55000/268, Photo: © KHM, UiO).

The back of the casket is made from one piece of wood, measuring 30.5 cm at the top and 31.3 at the base, 10.9 cm at the widest. The lid is stated to be 35 cm long (which should be corrected to *c*. 30 cm, as it is the same length as the back) and 12.4 cm wide, 0.5 cm thick, made from three planks held together by seven copper-alloy fittings on top and seven supporting iron fittings underneath (Grieg 1928:198–200). The copper-alloy fittings are of two different forms, four resembling equal-armed brooches and three of near diamond shape with cut-off tips. The lid and the back are attached by two metal hinges, made up by two tongued pieces looped together, fastened by three rivets placed in a triangle. As noted by Grieg (1928:198–199), there are marks on the centre of the lid from where a hasp was once placed, and this hasp may be C55000/268 (no. 37, Fig. 131), which was found close by.

The casket has decoration on both the fittings and on the wood. The fittings resembling equal-armed brooches have no visible surface decoration, while there are punched dotted triangles along the edges and in a line across the diamond-shaped fittings. On the wood, there are two pairs of carved lines running parallel around the rim of the back panel, drawing a rectangle. Along the bottom and sides, the lines are broken by circular-headed rivets. Although fragmented, similar lines can be glimpsed on the lid as well, indicating that it too had lines framing it. Similar carvings are documented on the chest from Hedeby harbour.

This find is an example of the smaller chests, being 52 cm long, 23 cm wide, and 27 cm tall, made from six panels of oak (Kalmring 2010a:432, with references, 2010b:282). It is trapezoid in shape from all four directions. Contrary to the casket from Oseberg, the arched lid is made from a hollowed tree-trunk. This is attached by two long hinges at the back and was once secured by two hasps and a lock at the front (Kalmring 2010b:282–283). A possibly similar chest was found in Chamber grave 5 at Hedeby (Figure 5.21).

The Hedeby chests are close parallels to the Oseberg chests, particularly the smallest one (C55000/175, Grieg 1928:121–124, no. 178). This has a trapezoid shape when seen from the front, with slanting side boards, but a straight front and back (Figure 5.24). All its pieces are made from whole boards of oak (Grieg 1928:121). The top measures 62 cm in length and the bottom is 66.5 cm, standing *c*. 30 cm tall. The side boards are rectangular with cuts in the sides for the front and back panel, 24 cm wide at the base and *c*. 21 cm at the top. Somewhat fragmented, the lid is now 55.5 cm long and 22 cm wide, but would originally have fitted the outline of the case. It rests on its extended side boards, but its bottom is only 5.5 cm from the ground, its legs being shorter than on the two larger Oseberg chests. The lid was secured by two looped hinges at the back a lock at the front. The bottom was fastened into notches in the side boards, and the front and back panels were attached to the side boards with nails.

There is little evidence of decoration on the chest, only nine vertical, faintly-carved lines to the left of the lock, which may or may not have had a decorative purpose. A single straight line runs down the back, seemingly outlining the centre of the panel, possibly a remnant from its production.

Figure 5.24. The smallest chest from Oseberg (C55000/175, Photo: © KHM, UiO).

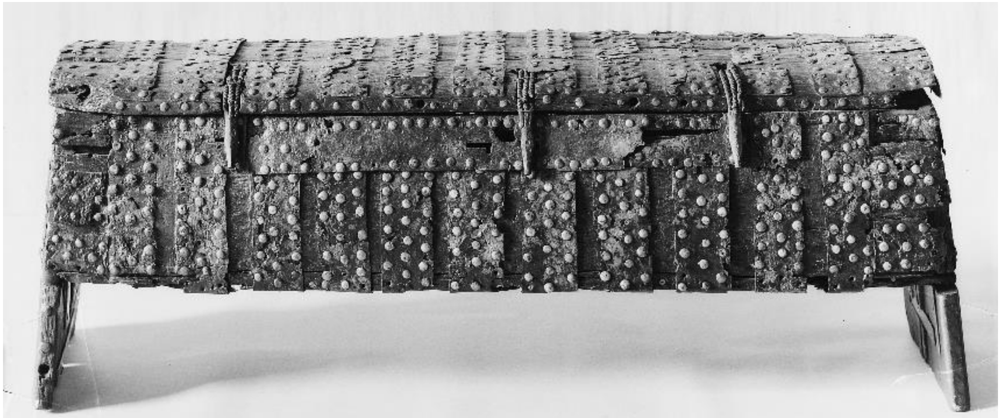


Figure 5.25. The most well-preserved chest from Oseberg (C55000/133, Photo: © KHM, UiO).

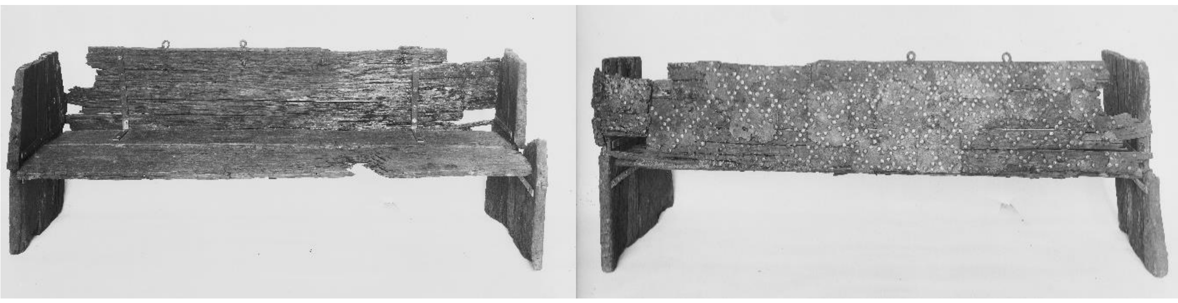


Figure 5.26. The inside and outside of the burgled chest from Oseberg (C55000/154, Photo: © KHM, UiO).

As for the two larger chests, these are very similar to each other in form and construction, but only one is preserved in its entirety; the other was broken when the mound was looted and is now missing its front and lid, as well at its lock (C55000/133 and /154, Grieg 1928:118–121, nos. 149 and 156). Both are made of oak, seemingly from whole boards, except from the bottom of the broken chest, which was made from two boards. The bottoms are also here set into rectangular holes in the sides, resting on widened legs that carry their weight. They stand higher from the ground than the smaller one: 16 cm and 20.5 cm, respectively.

The most well-preserved chest (Figure 5.25) is 108 cm long at the top and 113 cm at the base, 38 cm tall. The front and back panels are 21 cm wide. The back is straight, while the front is slanted inwards towards the top. The sides are 29 cm at the top and 32 cm at the base. The lid is slightly arched, fastened by nine cramp hinges at the back and three hasps at the front, secured into a lock covered by a long, rectangular lock plate. The chest is nearly covered in banded iron fittings fastened by nails with tinned copper-alloy heads: eleven on the front and back, fifteen on the lid, and three on each side.

The broken chest is slightly shorter and taller than the former (Figure 5.26). It measures 104 cm in length and 41 cm in height. The sides are 28 cm wide at the top and 36.5 cm at the base. The bottom is 30.7 cm wide, and the back 21 cm. It had a lid attached with four cramp hinges, and possibly had the same form and locking mechanism as the former. The back was covered in vertical iron plates mounted by similar decorative nails, but arranged in a diamond pattern (as the carved pattern on the bucket-shaped casket discussed earlier). On the sides, there are remains of horizontal banded fittings like those on the other chest. How the lid and front were decorated is unknown, but it likely had iron fittings with nails in a diamond pattern, or in straight lines as its sibling.

The closest parallel to the large Oseberg chests is from Grave 22b at Fyrkat, but this chest was both longer and wider. Measuring about 130–135 cm in length, *c*. 50 cm in width, and 25–30 cm in height (Roesdahl 1977:117-119, Fig. 181 and 184), it is more in line with the Lejre chest presented earlier and could also have been of the flat-based kind. Further details about these chests and their contents are presented in Chapter 8.

In summation, there is a wide range of containers that were locked during the Iron Age. Understanding their construction, dimensions, and operation is important when considering how they were locked and what they were used for. Their chronology is also a relevant point to these aspects, and a temporal development in lockable things will be a correlating result of the technological analysis in Chapter 7.

5.2 Doors

Moving on to lockable spaces, there is limited evidence for locked doors from the Iron Age. The little knowledge there is about their construction will be briefly presented here.

Houses and doors in Norway have been recently studied by Marianne Hem Eriksen (2019), who has listed seven doors from Scandinavia or Scandinavian settlements, one from the Early Iron Age and the rest from the Late Iron Age. These include an oak door from Nørre Fjand on Jutland (200 BC to 200 AD); one of pine from Gotland (6th century); one of oak, pine, and fir from Kaupang, two from Hedeby, and two from Dublin, Ireland (Eriksen 2019:26–27, with references). Of these, one of the doors from Hedeby is the only one with documented lock remains (described in 6.3.2, Figure 6.56). Following Eriksen, the majority are made from wooden planks fastened together by transverse cross-beams, often with carved tenons on which they turned. They are primarily from early urban sites, which may reflect seasonal doors differing from permanent, rural doors (Eriksen 2019:26). This possible distinction between temporary and permanent settlement will be revisited in Chapter 9.

In addition to the locked door from Hedeby, there are finds from Anglo-Scandinavian York, Northern England (MacGregor 1978; Ottaway 1992) and Novgorod in Russia (Kudravtsev 2012a, 2018). From Novgorod is a near complete door from the late 10th century, illustrated in Figure 5.27 below. Both the door and partly preserved lock construction have close parallels to Scandinavian finds, without implying any direct connection. Judging by the Novgorod and Hedeby doors, and preserved door locks from York, the doors seem to have turned inwards.

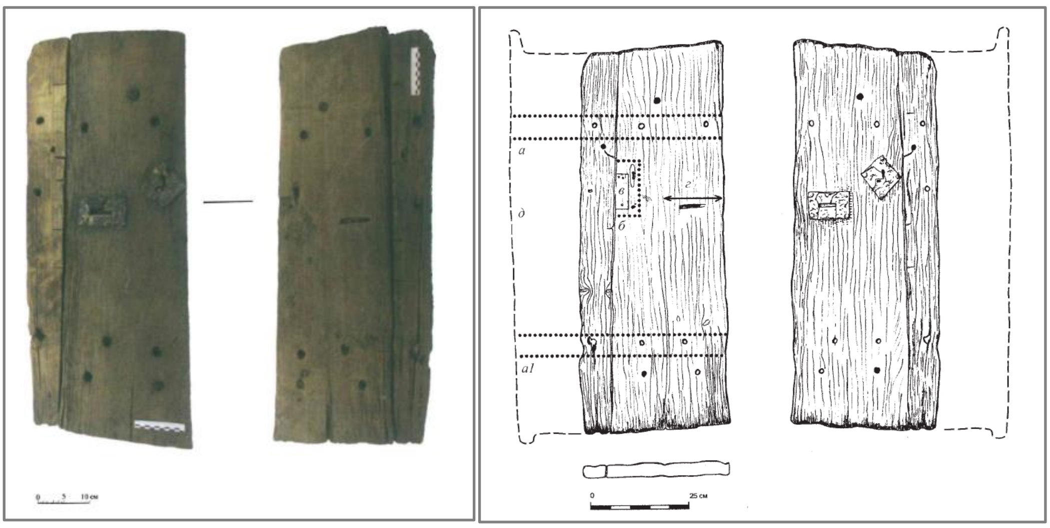


Figure 5.27. Lockable door from Novgorod (Kudravtsev 2012a:240, Fig. 1; 2018:259, Fig 3).

Preserved remains of locked architectural features like doors are currently only found at Viking Age and early medieval urban settlements. Encountering such finds outside urban sites is less likely due to preservation (4.3.2), and the door types found at these sites are not necessarily of the same form used in residential houses or other specialised buildings. Thus, determining whether doors were locked at rural settlements or other sites relies on understandings of lock and key types.

5.3 Fetters and chains

The last kind of artefacts that were locked are things that bind other things or people: fetters and chains. As will be presented in the lock classification (6.3.3), some fetters have locks incorporated into them, while chains and claves or other implements could have been fastened in combination with these or other padlocks. One example is the three fetters from Birka illustrated in Figure 5.28. Following Ny Björn Gustafsson (2009:90), these could have been used for animals, but most likely for humans. The smallest could have been leg hindrances for horses [SE *hästhällor*], but such documented uses are from much later times, and could alongside the larger ones rather represent fastening humans, around wrists, feet, and necks (Gustafsson 2009:92, with references). This is in line with a study of 6th to 15th century fetters in Central and Eastern Europe by Joachim Henning (1992) that connects their use to slavery and slave trade (Figure 5.29, left).

Similar fetters have been documented at Trelleborg, Zealand (Figure 5.29, right), Hedeby (Westphalen 2002, Taf. 70, 5–6), Iceland (Eldjárn and Friðriksson 2000:320), and possibly also in a burial from Kalvatn in Møre og Romsdal, Western Norway (B8384g, Petersen 1951:66, cf. Gustafsson 2009:92). Henning's study placed such mechanisms in Northern Germany in the 11th–13th century, which are temporally and geographically close to the Danish finds (Henning 1992, Abb. 8).

That all these objects were used on humans is not certain, but Gustafsson considers items with shackles wide enough to encompass an adult hand to be potential security devices designed for people. Presently, the number of such items are few, but much like the locks and keys, their identification and recognition may be affected by limited awareness (Gustafsson 2009:95).

Figure 5.28. Neck claves and fetters from the Black Earth at Birka (SHM 5208, Photos: © SHM).

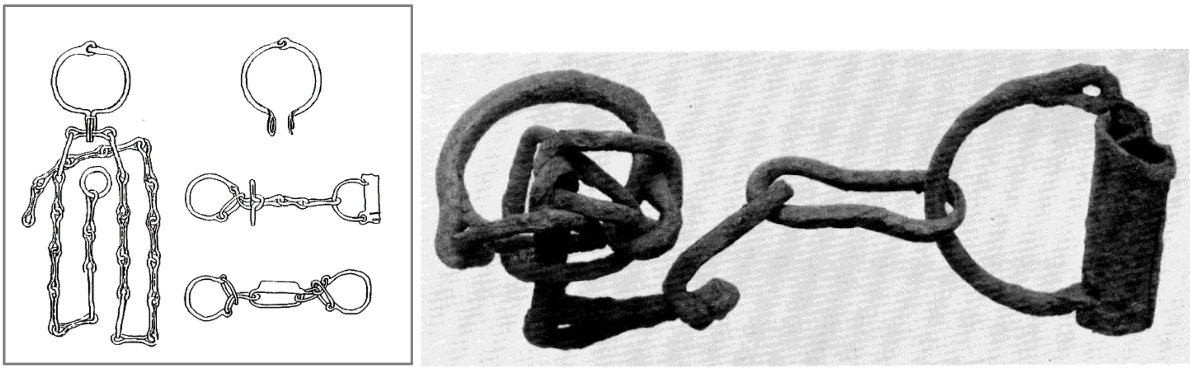


Figure 5.29. Neck claves, chains, and fetters with fetter locks from Eastern Europe (after Henning 1992), and fetters with fetter lock from Trelleborg (Nørlund 1948, Pl. XXXII).

5.4 Lockable things and their mechanisms

A central aspect to this presentation is that the classification of locking mechanisms in the next chapter is based on how construction and form is intrinsic to their operation and movement (following Latour's perspective on the Berlin key in 3.5). Therefore, how a container, door, or other means of barring was opened and closed was decisive for how the lock was constructed and arranged. As will be demonstrated in the classification, the opening and closing of lockable things is embedded in how a mechanism is locked and unlocked, and is therefore important in understanding how locking was practiced and what purpose it served.

This entails that a lock provides insight into what was locked and how, and that a lockable thing can provide insight into what lock it may have held. Thus, the presented overview and the following classifications are designed to work together in establishing an empirical foundation for identifying, describing, and understanding locking devices and locking practices.

6. Order through movement: key and lock classifications

This chapter presents the classifications of locks and keys from the Iron Age. They are intended to be applicable to Scandinavian materials and are therefore based on my own and others' studies of finds from Norway and published finds from Sweden and Denmark. Acknowledging that there may be forms and types that have not been recognised or sufficiently represented, the classification system is constructed so that additions and revisions may be made in future studies.

The types presented here have mostly been described and presented in previous works, but have to a little degree been regarded together and differentiated with clear type definitions related to function (Reinsnos 2013 is one notable exception for finds from the Viking and Middle Ages in Hordaland, Western Norway). Therefore, the known forms of locks and keys are gathered into one framework that defines their characteristics in relation to each other. This has involved combining previous efforts at reconstructing Iron Age locks and conducting revisions and additions from my own understanding of the finds. In accordance with how the term classification is defined in the conceptual framework (3.8.1), the following is an ordering that does not consider chronology to any significant degree, but is focussed on the relevant differences between keys and lock mechanisms. As such, it is not a final or universal organisation of locks and keys, but one designed to facilitate understandings of functional development and use within this study's research perspectives.

The chapter is introduced by specifying how technical function and bodily movement are used as organising principles for the material (6.1). The key types and their design features are presented first (6.2), forming a basis for how they work in the various lock types (6.3). Following this, the lockable things presented in the previous chapter are correlated with the lock and key types, constructing an overview of which locking mechanisms secured specific forms of containers, doors, and fetters (6.4). The result is an analytical systemisation and foundation for studying and interpreting what purposes locking served in the Iron Age and how these changed.

6.1 Function, movement, and arrangement

Understanding how locks and keys work, how they are constructed and why, involves understanding the relationship between the mechanism and the bodily movements of the person operating it. Achieving this entails analysing the design features of each lock find from a constructional and operational chain perspective (3.8). Specifically, it involves determining the way the lock parts were positioned and shaped according to each other and isolating the specific sequence of movements required to manipulate them from locked to open position and vice versa. Hence, exactly how the mechanisms are functionally different, i.e. how they solved their tasks in similar or different ways, can be observed. This approach clarifies what the nuances in lock and key morphology means in practical terms, and thereby allows for addressing what their material differences may have signified in terms of security, development, and achieving order.

On the most basic level, operating a lock involves applying pressure in specific directions to specific parts of the lock in a specific order by the use of a key and hand motion. Most locks require two hands, one hand operating the key while the other assists. Due to the importance of directional bodily movement in applying pressure, the gestures and their order is considered the defining characteristics for determining the locking principles governing different locks. This entails that the locks and keys are classified into main types based on the locking principle governing them, meaning the main gesture central to their operation. What movements keys facilitate and locks require is visible in their object features, consequently, types also have a certain degree of morphological similarity.

The locking principles, i.e. the primary movements in Iron Age locking mechanisms are *pulling*, *turning*, *pushing*, and *lifting*, resulting in the main types pull locks (Type A), turn locks (Type B), push locks (Type C), and lift locks (Type D). Within these, sliding is important as a secondary movement. However, as will be explained in more detail below, the primary movement is executed through using a key, while the sliding movement is executed by moving the lock bolt (see Table 6.1 for terminology). Correspondingly, the keys are divided into main types based on the primary movement they facilitate, resulting in pull keys (Type 1), turn keys (Type 2), push keys (Type 3), and lift keys (Type 4). The numerical names of the key types mirrors the alphabetical naming of the lock types, linking the main types together.

The main lock and key types are further divided into sub-types (often referred to as simply ‘type’) based on more detailed nuances regarding movement and arrangement. Where the main types are based on primary movements, for example pushing or pulling, the sub-types represent the different ways these movements are executed. Arrangement pertains to how the lock is mounted; how the different parts of the lock are placed and dimensioned according to each other; how the key enters the lock, and in which ways the key must move within it. Because locks and keys by nature are designed to be individual (see 3.5), the variations within each sub-type are in some cases significant enough to warrant further separation into variants. This is done with the aim to observe the developmental stages of each type in such a resolution that it is possible to establish patterns over time and space. Without the variants, significant details regarding the finer technological developments and functions would be left unrecognised.

Overview of terminology	
Key part	*Description*
Bit	The piece that manipulates the lock mechanism
Handle	The part that is held and wielded to apply pressure through the bit
Stem	The transition between the handle and bit, what the bit is attached to Can be hollow or in the shape of a pin in turn keys
Hook	Synonym to stem in certain pull keys
Tip	The protruding pieces on key bits, interacting with the spring(s)
Aperture (in bit)	Perforations in the bit that correspond to wards in the lock
Cut (in bit)	Notches in the edges of the bit that correspond to wards in the lock
Loop	Feature at the end of the handle on certain keys, for suspension
Lock part	*Description*
Lock cover	Rectangular fitting with apertures that covers the lock spring leaves
Cover plate	Separating feature with apertures inside some padlocks that covers the lock spring
Lock spring	Blocking feature in the form of one or several metal leaves
Lock bolt	Elongated metal bar in locks with secondary sliding motion, keeping hasps in place
Springed bolt	Lock bolt that combines bolt and spring
Cover bolt	Lock bolt that combines bolt and lock cover
Tongued bolt	Straight lock bolt with two tongued projections underneath
Bolt arm	Piece of lock bolt that protrudes through the hasp cramp loops
Blocking ledge	Transverse feature that prohibits the lock spring from moving
Aperture (in bolt or lock cover)	Perforation(s) that allow the tip(s) of the key bit to manipulate the lock spring
Ward	Feature inside lock or on lock bolt that corresponds to cuts and apertures in key bits
Lock plate	Often rectangular fitting on the outside of the lock or container/door that holds the lock mechanism in place, conceals it, and may encompass a keyhole
Keyhole fitting	Metal fitting riveted over the keyhole, when the keyhole is not set into a lock plate.
Hasp	Angular or arched iron fitting that secures the lid to the internal lock bolt
Cramp loop	U-shaped or circular loop on the hasp head(s) that holds the bolt arm(s)
Lock case	The enclosed part of a padlock that holds the lock spring, wards, and encompasses the key during operation
Shackle	The often U-shaped bolt in padlocks that holds the lock springs and is fastened to the lock case when locked
Tube	The elongated, narrow piece on padlock case that holds the shackle end

Table 6.1. Terminology used in the descriptions of keys and locks.

Keys and locks belong together and it is possible to infer much about the form and function of one from studying the other. However, there is no one-to-one relation between key sub-types and lock sub-types in this classification, for two reasons. The first is the observation that while some key sub-types belong to a specific lock sub-type, others could operate several different ones. The second is that locks are underrepresented in the archaeological material compared to keys. The observable variation in keys indicates that there are holes in the range of locks. Therefore, several key types currently stand without surviving evidence of the locks they belonged to, other than their own morphology. The locks have either not been deposited in archaeological contexts or they have yet to be discovered.

The following presentation of types will demonstrate that there is considerable variation in how the locks were arranged. The most general level of arrangement, which is a level above the four main types and their locking principles, is whether the lock was ‘mounted’ or ‘portable’. In line with the overview of locked things in the previous chapter, mounted locks were placed on a door or on a container, and were therefore fixed in place. Portable locks, also known as padlocks, were mobile and could be used on a range of containers and items. There are currently no surviving door locks from the Iron Age in Norway, but it is possible that some of the keys in the Norwegian material may have operated door locks. Tentatively reconstructed door locks are presented in the classification, outlined by such keys and evidence from outside the research area.

Based on current knowledge (5.2), mounted door locks were placed on the inside of the door (DD1 being one exception). The person operated it from the outside by inserting the key through the door to reach the inner mechanism. Mounted lock types on chests, caskets, and boxes were also placed internally, inside the front or under the lid (except A5). The key would reach the lock from above, from the side, or from underneath, or by being inserted directly into the centre of the mechanism. Padlocks were externally placed, were more variable in application, and held their mechanism contained inside them. Depending on the dimensions of the lock case and the inner arrangement of the mechanism, padlock keys were inserted either through a keyhole in the side or the base of the lock case. The movements necessary to open and close a specific lock therefore depended on the external and internal arrangement of lock elements in relation to what the lock was placed on. For example, opening a chest standing on the ground differed from unlocking a door. The bodily position of the person operating the lock thus comes into play, and potentially also their handedness – whether the person was right- or left-handed.

The elaboration and complexity of locks is another aspect important to their function and operation (as explained in 3.5). The more composite and intricate the locks were, the more various were the possibilities for their arrangement. The level of elaboration was naturally related to the purpose of the lock and considerations regarding security, and it also demanded more effort and precision in producing them, as well as describing them and explaining their function. The nuances in elaboration did have consequences for how the locks were opened and how protective they were. For this reason, the classification attempts to take into account the different levels of complexity in the lock sub-types by ranging their eventual variants according to increasing elaboration.

6.1.1 Movements and locking principles

As stated, the four main locking principles are based on the primary movements required to operate a lock: pulling, turning, pushing, and lifting. This separation is not one I have arrived at in isolation; several lock and key types have been given names such as 'turn key' or 'rotary key' [NO *vrilåsnøkkel*, SE *vridnyckel*], 'pulling lock' [NO/DK *draglås*], 'slide/push key', [SE *skjutnyckel*, NO *støtnøkkel*], 'slide/push lock' [SE *skjutlås*, NO/DK *skyvelås*]. Thus, movement and direction have been recognised and used when naming and describing locking mechanisms for a long time. However, it has not been done consequently or with sufficient regard to technical function for the context of this study. For example, 'slide lock' is a term that signifies a lock that involves sliding in its operation, but it does not say anything about what happens before the sliding motion is applied. In the Iron Age mechanisms, sliding is a secondary motion that is executed after the primary motion has been performed using the key; hence, the term 'slide lock' does not work in describing the characteristic feature of different mechanisms.

In order to establish a more unified way of referring to and understanding lock mechanisms a more comprehensive approach is attempted here. In this regard, it is necessary to explain what these four movements actually entail within this context. The starting point is the human body – how it is positioned according to the lock, how it holds and moves the key, and how it moves other parts of the mechanism when operating it.

The first locking principle is centred on pulling (lock type A, key type 1). It is the pulling motion on the key that applies pressure to the lock spring, allowing the lock to be opened. The term is here is used liberally, meaning directing pressure towards the body of the person doing the unlocking. Pulling denotes level, towards-facing or upwards-facing motion.

The second locking principle is centred on turning (lock type B, key type 2). The term turning denotes all rotary movement of the key, from turning only a quarter of a circle to full-circle. It is the sideways turning motion of the key that provides pressure to the spring, freeing the locking mechanism. Almgren (1955:33) considered only locks where the key turned a full circle to qualify as pure turn locks, but I see little reason to be this stringent. As long as the turning of the key is what frees the mechanism, I consider it a pure turn lock, different from those who require both turning and sliding – a distinction I will explain shortly.

The third locking principle is centred on pushing (lock type C, key type 3). The pushing motion applied in these locks is executed by moving the key away from the body, either in a forward, sideways or upwards motion. Although the term pushing alludes to applying a certain amount of force, the operation of push locks did not necessarily involve much power. Pushing is more descriptive of the direction of the key movement than the force exercised, which provides the pressure necessary to compress the spring.

Lastly, the fourth and last locking principle is centred on lifting (lock type D, key type 4). Lifting the key elevates wooden tumbler pins inside the lock. For this reason these are generally known as 'tumbler locks' (NO *fallpinnelås,* SE *fallregellås*) (Erixon 1946:59; Pitt Rivers 1883:6). Lifting the tumblers frees the bolt so that it may be moved sideways. All lift locks are therefore actually lift-and-slide locks. At present, there are no surviving lift locks in the Norwegian Iron Age material, but finds from elsewhere in Scandinavia, such the key from Lund mentioned 4.1, indicate that they may have been present here as well, at least after 1000 AD. The lack of empirical evidence for this lock type in Norway, as well as the late date of the finds from outside the area, did raise the question if it should be excluded from the classification. However, as this study aims to be applicable for Scandinavian materials, I have chosen to include it as well as others not presently discovered within Norway, also keeping the possibility open for future finds.

In all of the four main lock types there are sub-types that require sliding, as mentioned above. Sliding is defined by the sideways movement of a horizontal, movable lock bolt [NO *låsrigel* or *låsbolt*]. The locks that require sliding all have a bolt mechanism, and are all mounted. Sliding is different from pushing or pulling sideways as it acts on the bolt and not on freeing the blocking feature, most commonly a lock spring. It is the primary motion that provides pressure to the spring, while the sliding gesture follows when the lock spring mechanism is compressed and free to move, the bolt thus moving unrestricted. Exceptions to this rule, however, are certain kinds of locks that seem to have no blocking feature, where the motion of the key is moving the bolt itself (see AA4.1 and B5). In order to differentiate between pure and sliding locks, the letters within the type names are single or double, e.g. a pure pull lock is indicated by A, while a pull-and-slide lock is signified by AA. This is done to allow for other lock types of either pure or sliding mechanism to be added to the classification without having to rearrange the entire order and names of the types.

A summation of the types in this classification is illustrated in Table 6.2 below. It displays the four main lock types with their respective sub-types and variants, as well as their outer arrangement and placement, and the key types operating them.

Lock type	Lock sub-type	Variants	Form/use	Key sub-type
Type A				
Pure pull locks	A1	A1.1, A1.2	Mounted, box/casket	1A
	A2	A2.1, A2.2	Mounted, box/casket	1A, 1B, 1D?
	A3		Mounted, box	1C
	A4		Mounted, casket	1A
	A5		Mounted, casket	1E?
	A6	A6.1, A6.2	Mounted, casket/chest	1A, 1B
	A7		Portable, padlock	1E
Pull-and-slide locks	AA1	AA1.1-AA1.3	Mounted, casket/chest	1A, 1B
	AA2	AA2.1-AA2.3	Mounted, casket/chest	1A, 1B
	AA3		Mounted, casket/chest	1C.1
	AA4	AA4.1–AA4.3	Mounted, door?	1A, 1B, 1C
Type B				
Pure turn locks	B1		Mounted, casket/chest	2B.2
	B2		Portable, padlock	2A, 2B
	B3		Mounted, casket/chest	2C
	B4		Mounted, door	2C
	B5		Mounted, door	2D
Turn-and-slide locks	BB1	BB1.1-BB1.3	Mounted, casket/chest	2B
	BB2		Mounted, casket/chest	2A
	BB3		Mounted, casket/chest	2A
	BB4		Mounted, casket/chest	2C
Type C				
Pure push locks	C1	C1.1–C1.3	Portable, padlock	3A
	C2	C2.1, C2.2	Portable, padlock	3B
	C3	C3.1, C3.2	Portable, padlock	3C
	C4		Portable, padlock	3D
	C5		Portable, padlock/fetter lock	3C
	C6		Portable, padlock/fetter lock	3C
Push-and-slide locks	CC1		Mounted, casket/chest	3E
	CC2	CC2.1, CC2.2	Mounted, casket/chest	3F
Type D				
Lift-and-slide locks	DD1		Mounted, door	4A

Table 6.2. Classifications of Iron Age locks and keys from Scandinavia based on technical function.

6.1.2 A note on the order of types

The order of the types in this classification is determined by technical function rather than chronology, as mentioned above. However, temporal considerations are embedded into the ordering. Pulling mechanisms exist throughout the period (as has been established in earlier research, e.g. Berg 2013), but as they are the earliest to occur in archaeological contexts, pull locks and keys are placed first. Then follows the turning types, the pushing types, and lastly, the lifting types, based on when they seem to be introduced. This approach rests on the desire to make technological development visible in the order of the types, at least, on a general level.

However, in principle, the lift locks should have been the first lock type in this classification. Firstly, because they are chronologically earlier than the others if one considers the wider history of locking mechanisms. Secondly, because the principle of tumblers in other locks as well as tips in key bits, should likely be considered deriving from lifting mechanisms. How a spring blocks a bolt from being slid is closely related to how tumblers work, which both need to be moved by a key to free the bolt. In later mechanisms with metal tumblers, the addition of a spring applying downward pressure to the tumblers probably derived from lifting mechanisms, an alteration that may have dealt with weaknesses like tumblers getting stuck in their channels.

Thus, from the perspective of technological development, lift locks should likely be considered a starting point for the other three lock types – at least for the turning mechanisms, which was emphasised by Almgren (1955:32–36) in his discussion on Roman and Scandinavian locks. However, its influence on all lock types is not as easily established, for example in the push locks. Also, in the Scandinavian material, the lift locks and keys are very few and of late date, making ordering types more challenging. In this particular case, chronological relationship has been given precedence over technical function, leading the lift locks to be placed last. Future finds may alter this picture, but for the time being, it is sufficient to underline the interrelatedness of these mechanisms and to emphasise that the lift locks may have both inspired and existed alongside some or all of the other lock types presented here.

6.2 Key classification

The following key classification encompasses four main types with eighteen sub-types. I have separated the pull keys into five sub-types (1A–1E), the turn keys into four (2A–2D), the push keys into six (3A–3F), and the lift key type consists of one sub-type (4A). The separation into sub-types is based on variation in their forms, which relate to how they facilitate movement according to the arrangement of the various locks. Some sub-types are further divided into variants depending on their elaboration and uniqueness, which reflects varying levels of individuality and, in principle, security. Important to note, the signatures of the sub-types are often, but not always, in correspondence with those of locks, as mentioned above.

Keys may be decorated in different ways, often more so than locks. The copper-alloy keys most commonly have preserved traces of decoration, which is likely related to the material's malleable abilities and good preservation. Iron keys generally have less preserved surfaces so their decoration is harder to consider. Decoration may have contributed to locking devices' effects in regulating boundaries and acting as mediators, but I have not found it to have a directly practical relevance for their operational use. Motifs and styles have therefore not been part of this systematisation. The decorative development is a large and complex matter in itself, and its study has been left for future endeavours.

6.2.1 Type 1: Pull keys

Most pull keys are commonly known as 'hook keys' [NO *kroknøkler*] because of the characteristic hook-like bend of the stem (Figure 6.1). However, not all pull keys have hook-shaped stems. The determining trait for this key type is therefore not how they look (although many are quite similar in form), but the pulling motion their form facilitates. I therefore prefer and apply the term pull key [NO *dragnøkkel*] rather than hook key, in order to establish a functionally oriented terminology.

Pull keys are predominantly used in mounted pull locks, but one sub-type belongs to a padlock type. Mounted locks have so far only been observed on chests, caskets, and boxes, but certain pull keys may also have been applied in door locks (see 6.3.1). Pull keys are most commonly made from iron, but also copper alloy. Outside Norway, certain pull keys may consist of both metals, such as an iron bit and copper-alloy handle (e.g. Ulfhielm 1986:13–15, Fig. 13). There are also singular finds of iron pull keys with wooden handles (e.g. Arwidsson and Berg 1983:9, Pl. 4 and 19:3). I have not encountered wooden remains in the Norwegian material so whether this was common cannot be ascertained.

Figure 6.1. Pull key anatomy and terminology.

Sub-type 1A: Pull keys with arched hooks

Pull keys within sub-type 1A are generally long and slim, with straight to slightly curved handles and small suspension loops, although short-handled and large-looped keys do occur. The most common size range is 8–18 cm, with some instances of smaller or larger ones (max. 30 cm). Their most characteristic feature is the arched hook, which varies in shape and size. The bits consist of between one and four elongated metal tips with blunt ends, placed at the end of the hook. An important aspect of the arched hook is how it orientates the key bit approximately in line with the handle, and facilitates a certain ‘scooping’ pulling motion (further illustrated in Type A locks in 6.3.1 below).

The number of tips in the bit indicate their use in pull lock variants with different numbers of spring leaves. I have therefore separated them into four variants based on the number of tips: 1A.1, 1A.2, 1A.3, 1A.4 (Figure 6.2). The four-tipped variant is presently not identified in Norway, but is represented in finds from Gotland (e.g Arwidsson and Berg 1983; Nerman 1969, 1975; Ulfhielm 1986). Certain keys within this sub-type diverge in hook and bit form; some have a U-shaped bend in the hook, others have diverse bit orientations (Figure 6.3). These are considered variations on the main form that increase the individuality and uniqueness of the specific key, reflecting efforts at increasing security by reducing the possibility for lock picking or the use of similar keys. Such intentional diversity is observable in most key forms in varying extent, although it will not always be stated in detail.

1A keys are used in mounted pull locks, operating those within the sub-types A1, A2, A4, A6, AA1, and AA2, possibly also AA4.1 and AA4.2. They are thus used in both pure pull locks as well as pull-and-slide locks, and are not exclusive to one specific lock type. Along with sub-type 1B, it is one of the most versatile key types.

Figure 6.2. Three iron pull keys of variants 1A.1 to 1A.3 (B4165f), and two copper alloy keys of 1A.4 variant from Gotland (SHM 20550:138, Photo: © SHM).

Figure 6.3. Sub-type 1A keys with divergent bit orientation, bit arrangement, or hook form (Left to right: B6090l_f, B6516k, C4575a).

Figure 6.4. Iron 1B keys with between one and four tips in the bits (Top left to bottom right: T21080/17, C15904, B7066c, T20603).

Sub-type 1B: Pull keys with angled hooks

The keys in sub-type 1B are closely similar to those in 1A in terms of basic form and application in Type A locks. The main exception is that they have angled rather than arched hooks. They are placed in a separate sub-type because the hook shape facilitates a different orientation of the key bit, which affects how it is moved. The hook shape makes the bit stand to the side of rather than in line with the handle, and the tips point backwards towards the top of the key. Rather than the scooping motion of the 1A keys, they facilitate a motion similar to that of pulling on a rope. The most common form is a *c.* 90-degree bend, giving the key the shape of an L. The handles are usually straight with a small suspension loop and a square cross section. The length of the handle and the hook varies significantly, resulting in keys with very differing dimensions and sizes. The most common range is 8–15 cm in length (max. *c.* 25 cm). As in 1A, the 1B hook and bit features are varied to create uniqueness, and there are up to four tips in their bits, resulting in variants 1B.1, 1B2, 1B.3 and 1B.4 (Figure 6.4).

Sub-type 1C: Pull keys with T-shaped bits

Sub-type 1C consists of pull keys with T-shaped bits, occasionally described as the Dorestad type (e.g. Grieg 1933:80). The main form is characterised by having a two-pointed bit, with one tip on each side of the handle pointing backwards. This is considered the first variant, 1C.1. There is also one find from the Black Earth at Birka that has four tips, two on each side of the stem, which makes up the basis for a second variant, 1C.2 (Figure 6.6). The tips may be short or long, and they have straight or oval handles. Keys of the first variant are around 8–14 cm in length, and the latter up to 18 cm. To my knowledge, they only occur in iron within Scandinavia. I became aware of the key from Birka late in the study, so the following analysis of the Norwegian finds only concern 1C keys of the first variant.

1C keys are used in three different sub-types of mounted locks, A3, AA3, and the tentative variant AA4.3. The first is for boxes, the second for caskets and possibly chests, and the third is a potential door lock. Like 1B keys, they are pulled on in a horizontal manner with the bit vertical, so that the tips point back towards the person wielding it. The 1C keys should not be confused with girdle-hangers (Figure 6.6), which have not been encountered in Scandinavia as far as I know, but appear in Anglo-Saxon Britain and northern parts of Western Europe (Felder 2015:2–3; Steuer 1982).

Figure 6.5. Two iron 1C keys of respectively 1C.1 and 1C.2 variants (C18673; SHM 5208:410, Photo: © SHM).

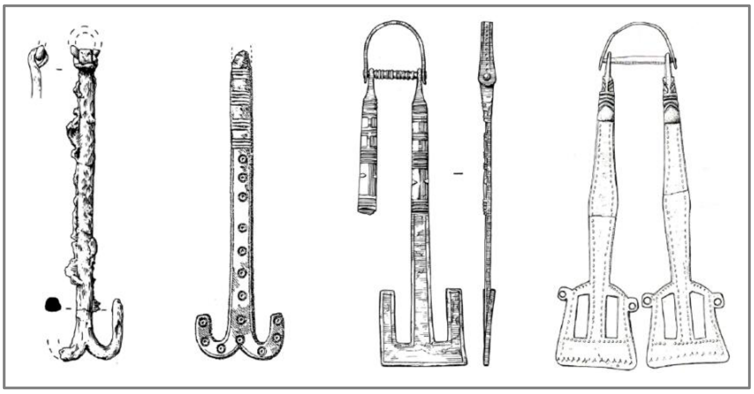


Figure 6.6. Anglo-Saxon 1C key from Norfolk (left) and three Anglo-Saxon girdle-hangers from Kent, Essex, and Leicestershire (Felder 2015, fig. 1).

Figure 6.7. Two iron 1D keys with U-shaped bit (C10683, C24480).

Figure 6.8. Two iron 1E keys from Åker, Hamar, Hedmark (C38683uI, uIII).

Sub-type 1D: Pull keys with U-shaped bits

Keys grouped in the 1D sub-type have a characteristic U-shaped bit that stands to the side of a straight handle (Figure 6.7). These likely belong to locks of A2 type, a pull lock that was mounted on boxes or smaller caskets (see 6.3.1). These only have one tip in the bit, and are about 10 cm in length. All known examples have the same basic form, so there are no variants within this sub-type. They only occur in iron in Norway, but one example of copper alloy was found at Illerup Ådal in Denmark (Ilkjær 1993a, Abb. 131).

Unlike other pull keys, the tip of the 1D key is oriented upwards during operation, which could warrant placing such mechanisms among the lifting ones of Type D. However, as opening an A2 lock would require being leant over the box, the pressure of the key would still mainly be directed towards the body, for which reason it is grouped among the pull keys. This is also how 1A keys are used in A1 and A2 locks, which is illustrated in 6.3.1.

Sub-type 1E: Pull keys with two-tipped, transverse bits

The next sub-type of pull key is 1E, which unlike the previous key types is for portable padlocks with pulling mechanism, type A7. They are *c.* 5–8 cm long with short, straight handles and a small suspension loop. The bit is made up by two short, 90-degree tips oriented to one side of the handle (Figure 6.8).

The short and blunt appearance of the 1E key differs from the other pull keys, but an elongated form was not practical for a small padlock format. The direction of the movement applied to 1E keys is less fixed as padlocks may be suspended in different directions and held at different angles when operating. However, the gestures and functional principle of A7 locks are consistent with other pulling mechanisms, so these distinctive keys are placed among the pull keys (and not among the push keys, as in Berg 2013:46).

6.2.2 Type 2: Turn keys

The most characteristic feature of turn keys [NO *vrinøkler*] is the bit, which are flattened metal pieces extending from the side of an elongated stem (Figure 6.9). This arrangement is central to their function, where the turning movement facilitates the bit to manipulate the lock mechanism. Operated horizontally, the often broad handles offer leverage for rotating the key using the hand and wrist. Turn keys seem to be most frequently used in mounted turn locks for caskets, chests, and potentially doors, but one sub-type also operates a portable padlock type. They commonly occur in either copper alloy or iron, and appear occasionally with copper-alloy handle and iron stem and bit.

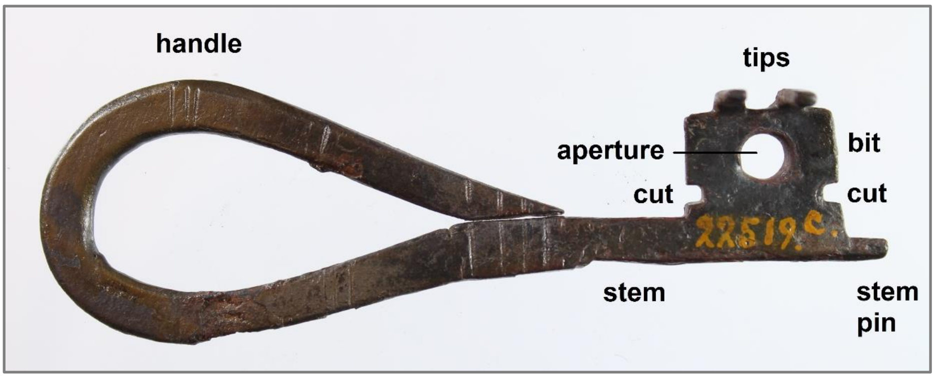


Figure 6.9. Turn key anatomy and terminology.

Sub-type 2A: Turn keys with flat bits and stem pins

Turn keys within sub-type 2A have flat bits without tips. The bits are either rectangular or with a triangularly tongued end, and they are placed on stems ending in a narrow pin. Their handles are most often circular or oval/pear-shaped, with a short stem between handle and bit. They are *c.* 6–11 cm in length, used in turn locks on caskets and chests (BB2, BB3, and potentially B2 and B3)

The sub-type is separated into four variants based on the form and elaboration of the bits (Figure 6.10). The first variant, 2A.1, consist of keys with completely plain bits with no apertures in the bit. In 2A.2, there is a central aperture in the bit plate, normally rectangular, sometimes circular, or other. The 2A.3 variant has cuts, or ‘clefts’ (cf. Egan 2010), in the upper and/or lower part of the bit, while the 2A.4 variant is characterised by cuts in the front part of the bit, occasionally with irregular apertures in the bit plate. While in some cases the cuts and apertures may be embellishment, in light of lock construction they are considered mainly functional, corresponding to protruding wards in the lock. Locks with wards indicate a more complex and individualised lock arrangement, thus, the three latter key variants represent a higher level of security than the former.

Figure 6.10. Type 2A turn keys with bit forms reflecting the four respective variants (From left: T6339, T8530, Ts660, C19936. Left photo: © UM, NTNU).

Figure 6.11. Turn keys of 2B type displaying variation in form and arrangement of tips and apertures (Left to right: C17388, B6360b, C1245, C10472. Third photo: Kirsten Helgeland © KHM, UiO).

Sub-type 2B: Turn keys with tipped bits and stem pins

The 2B keys are quite similar to 2A keys, but have more variation in the shape and elaboration of bits. The 2B keys may have bit plates with or without cuts, but the most characteristic feature is the addition of one or several tips on the end of the bit. While the bit plate itself moves the blocking mechanism in the lock in 2A keys, it is the tips that interact with the lock spring in 2B keys. This feature is expressed in mainly three ways: one tip or an elongated ledge on the bit edge, two parallel tips along the edge, or three tips placed in a triangle (Figure 6.11). Keys with one tip or a ledge are designated variant 2B.1, those with two tips make up variant 2B.2, and those with three (and in rare cases four or five) tips make up 2B.3. The shape of the bit (rectangular, tongued, or other) is connected to how the tips are shaped and placed. Because of how the bits differ from 2A keys, they can be related to different lock types, 2B keys being used in the types B1, B2, and BB1.

Like in 2A keys, the handles of 2B keys are normally circular or oval, with short stems ending in a narrow pin. They are *c.* 6.5–10.5 cm long. The cuts in the bits vary in shape and size, but are commonly rectangular. Apertures in the bit plate are rectangular, circular, or sometimes more fluidly shaped. As such, the 2B keys with cuts and tips are more elaborate and more individualised than those having only tips, at least in principle.

The function of the variants within 2B is the same, but the physical variation among them illustrates different ways of approaching the same functional principle and making individualised keys. It is less easy to establish an increasing level of security from variant 2B.1 to 2B.3, as the variation in cuts in addition to the tips create a highly dynamic way of creating variation. However, the principle remains that the higher number of tips and clefts, the more elaborate and secure the key and corresponding lock were.

Sub-type 2C: Turn keys with rectangular bits and hollow stem

The third sub-type of turn key is 2C, which is mainly separated from the above by having a hollow stem and commonly rectangular bits. Due to the hollow stem, these are thicker and somewhat longer in 2C keys than in the former two (Figure 6.12). Thus, the 2C keys are seemingly more robust in construction. They are *c.* 7–11 cm long. The copper-alloy keys have similar handle forms as the former types, while the iron keys have shorter handles commonly in the form of a circular or oval loop, also termed 'bow' (Reinsnos 2013:46).

In contrast to types 2A and 2B, tongued bit shapes with triangularly placed tips have not been determined within 2C keys. Yet, there are other similar traits in bit arrangement that form the basis for three variants. Keys with a plain, rectangular bit make up 2C.1, those with apertures in the bit plates and cuts in the sides are grouped into 2C.2, and those with one or two rectangular tips at the end constitute 2C.3. Those of the latter variant may also have cuts and apertures in the bit plate, but are mainly characterised by the tips, which set them apart in how they manipulate the blocking mechanism. As such, the 2C.3 variant could be grouped among the 2B keys and the other two among 2A, but the hollow stem is decisive in this regard, because it relates to mechanical function and application. The hollow stem indicates the presence of a supporting pin in the lock, which is a characteristic of select lock types for caskets/chest (BB4) and potentially doors (B4). Thus, this is a criterion that provides information about the use of the key, in that 2C keys operated locks that 2A and 2B keys could not.

Figure 6.12. Hollow-stemmed turn keys of 2C type (From left: C52517/1512, C16588, B4860, S13674/1. Right photo: Terje Tveit © AM, UiS).

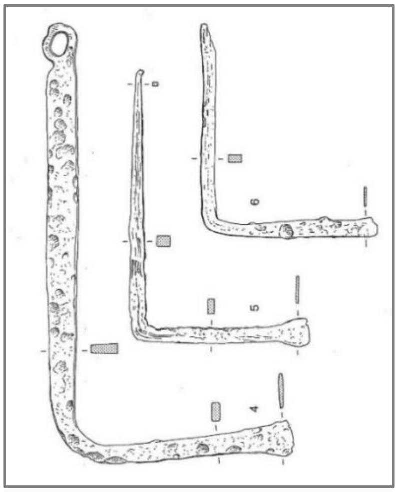


Figure 6.13. Three type 2D turn keys from Hedeby (Westphalen 2002, Taf. 66, No. 4–6).

Sub-type 2D: Turn keys with angular stem and chisel-shaped bit

The last among the turn keys is very different in form to the other sub-types, being more similar to 1B pull keys. They are L-shaped with a suspension loop on top and a long hook below, shaped into a broad and chisel-like bit. They are believed to have operated door locks of B5 type, or mechanisms of similar function (see 6.3.2).

The presence of 2D keys in Scandinavia is currently documented at Hedeby (Figure 6.13). Its form is not immediately recognisable as that of a key and would be challenging to identify if fragmented. My awareness of this type came after the material analysis was conducted, so it may not have been recognised for this reason. Another reason may be that it mainly stems from urban settlements (e.g. Lund and Bergen, Andrén and Nilsson 1976; Reinsnos 2006, 2013), which have not been included in the analysis. Regardless, the Hedeby finds place 2D in the Late Iron Age and indicate the locking of doors in this period.

6.2.3 Type 3: Push keys

Most push keys [NO *skyvenøkler*] are used for padlocks and are often called ‘padlock keys’ [NO *hengelåsnøkler* or *boltlåsnøkler*]. However, such a terminology is insufficient within this framework because there are also padlocks with pulling and turning mechanisms. Furthermore, certain push keys are for mounted locks rather than portable ones. Occasionally, the term ‘thrust key’ [NO *støtnøkkel, støtlåsnøkkel*] is encountered, which is more synonymous with push key as it centres on movement. I prefer the former as it is descriptive of directing pressure away from the body using only a certain amount of force.

The push keys are separated into six sub-types, 3A to 3F. The four first are for padlocks, while the latter two are for mounted locks on caskets and chests. There is significant variation in the construction of push locks, which results in (and is apparent from) significant differences in shape and function among push keys. They either have a bit in line with the handle or angular to it, which both facilitate the necessary pushing motion in different ways (Figure 6.14). As in the previous types, push keys are made entirely of either copper alloy or iron, or a combination of the two.

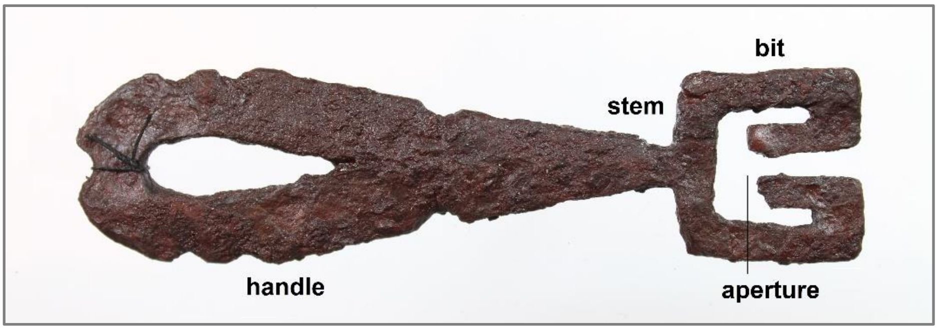


Figure 6.14. Push key anatomy and terminology.

Sub-type 3A: Push keys with rectangular bits

The keys in sub-type 3A are for use in box-shaped padlocks of sub-type C1. These keys have bits on the same plane as the handle. These are flat and rectangular, with one to several apertures in the bit plate. The number, size and arrangement of the apertures, like in other key types, correspond to the springs and wards inside the lock. The handles are often basket-shaped or boat-shaped, narrowed at each end, or straight, with a suspension loop at the end. 3A keys are commonly around 7–8 cm long, some up to 11 cm.

There are three variants of 3A keys that belong to three corresponding variants of C1 locks. The first, 3A.1 has one centrally placed aperture in the bit plate, dimensioned to fit the centrally placed lock spring of the C1.1 lock variant, and occasionally with an additional rectangular aperture for a ward set in front of the keyhole. Some of these keys have an opening in the front of the bit plate, depending on whether or not the lock spring extends to the base of the lock case (Figure 6.15, left; see also Tomtlund 1970, Fig 2). The second, 3A.2, has two to three variably placed apertures, often one T-shaped at the back and rectangular ones at the front, which correspond to the internal ward and the multiple lock springs of the C1.2 variant. The last variant has a larger bit and longer handle than the two former, belonging to C1.3 locks. It has between two and four apertures, also T-shaped and rectangular, along with two or three smaller, circular perforations. These perforations correspond to wards inside the lock in the form of thin pins. While the first variant is only determined in the Norwegian finds by padlock remains (see Figure 6.67), the latter two are confirmed by key finds (Figure 6.15 and Figure 6.16).

Figure 6.15. One push key of 3A.1 variant (SHM 153712:415508 from Birka, Photo: © SHM), and two push keys of 3A.2 variant (B16708/2, C37550r).

Figure 6.16. Two push keys of 3A.3 variant (Ts6514cy and No. 2170 from Hedeby, Maixner 2010:60, Abb. 68).

Sub-type 3B: Pushs key with circular bits

The keys within sub-type 3B are comparable to 3A keys, the main difference being the round bits. These indicate their application in cylindrical padlocks, sub-type C2, specifically. 3B keys are characterised by having multiple rectangular, circular, and/or T-shaped apertures in the bit plate, commonly between four and six. Their handles are either broadened at the middle, like 3A keys, or at the top, where there is a suspension loop. They are mainly known in iron. The four keys illustrated in Figure 6.17 below show the variation in key apertures. Based on these, the type is separated into two variants: keys with one central aperture making up 3B.1, and those with multiple apertures making up 3B.2. These operate the respective lock variants C2.1 and C2.2.

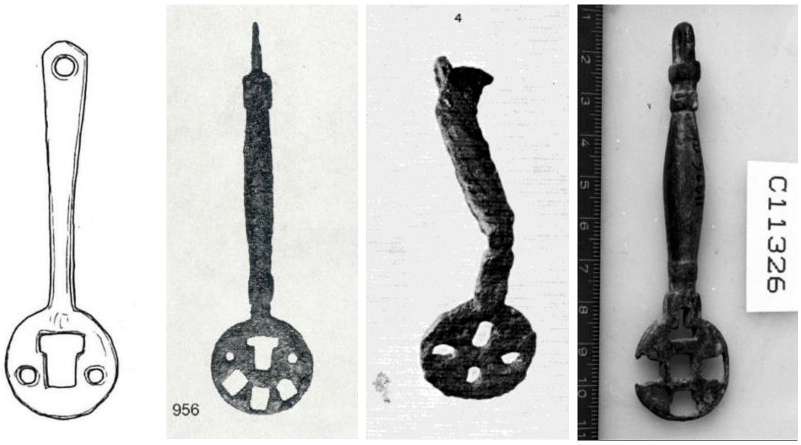


Figure 6.17. Push keys of 3B type with circular bits. From left: from York, England; Karkku-Koski, Finland; Trelleborg, Denmark, alongside a single find from Kisa in Ullensaker, Akershus, which may be medieval (Kivikoski 1973:125, Abb. 956; Nørlund 1948, Pl. XXII, No. 4; Ottaway 1992, Fig. 289, No. 3666; C11326, Photo: © KHM, UiO).

Figure 6.18. Type 3C keys with various bit aperture forms (C19489a-b, and keys from Hedeby, after Westphalen 2002, Taf. 65).

Sub-type 3C: Push keys with circular, angled bits

The third type of push keys also have circular bits, indicating their use in cylindrical padlocks. Unlike 3B keys, keys of 3C type have bits oriented at an angle to the stem. This is due to their use in C3 padlocks, as well as types C5 and C6, where the keyhole is placed at the end of the lock case. The stem is elongated and narrow, with a flattened and widened handle that is bent into a sideways or backwards loop and the top. They occur in iron and are *c.* 12–17 cm long.

The 3C sub-type is divided into two variants based on their variation in bit form (Figure 6.18). The first variant, 3C.1, has one or two rectangular apertures, either vertically or horizontally to the handle, depending on the spring orientation in the lock. Some may have a rectangular cleft at the front, which is either for an additional spring or a ward feature. In 3C.2, there is one central aperture shaped like an asterix (*), indicating that it compressed several springs oriented in different directions on the lock bolt. There could be more variants within this sub-type, but many of the surviving examples have fragmented bits which make further differentiation challenging.

That 3C keys appear in the Iron Age was initially unclear, as the majority have been found in medieval contexts. However, their occurrence at Hedeby (Westphalen 2002, see Figure 6.18, right) indicates that they were used around the end of the period. Hedeby has a relatively well-determined end date to the 1060s (Hillberg 2016). This supported by finds in the earliest layers of Lund, dated within the first half of the 11th century (lock no. 1833 and keys nos. 805 and 1586 in Andrén and Nilsson 1976, Figs. 357 and 358). A similar date has been suggested for keys of this type from Århus in Jutland, although these mainly derive from 13th century deposits (Hellmuth Andersen et al. 1971:188–189, Figs. DHX and DTS).

Sub-type 3D: Push keys with U-shaped, angled bits

The fourth push key type, 3D, is the last of those belonging to padlocks. These operated locks of type C4, which have drum-shaped cases with keyhole at the base. At present, the identification of 3D keys is based on the C4 lock, as no key finds resembling this form has been identified. The lock construction suggests that the key has a U-shaped bit that stands angularly on to the stem (cf. Berg et al. 1966, see Figure 6.19). At Hedeby, Westphalen (2002) has outlined the key illustrated below as a push key (her Type 5) that may have corresponded to the 3D type outlined here. However, it resembles more the 1E type described above. Therefore, it is still uncertain what 3D keys looked like. They may have closely resembled 1E keys, but were used to compress the spring by pushing rather than pulling.

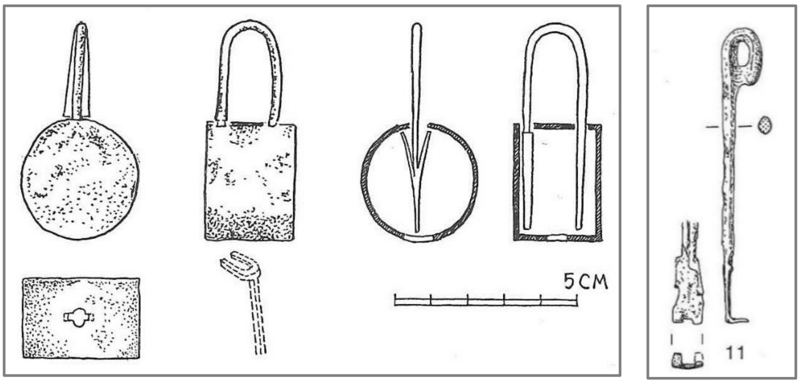


Figure 6.19. Left: Illustration of C4 lock with suggested key form (from Berg et al. 1966, Fig. 9); Right: potential 3D (or 1E) key from Hedeby (No. 2116 in Westphalen 2002, Taf. 65, 11).

Figure 6.20. Push keys of 3E and 3F types, respectively (C13860b, C58774).

Sub-types 3E and 3F: Push keys with T-shaped apertures

The key types 3E and 3F are so closely related functionally that they are treated together. The handles of such keys vary from circular or oval to basket-shaped. The bits vary less in form, and are all based on the same template: the bits are commonly flat and rectangular with an inverted T-shaped aperture in the middle that creates an opening in the front. This opening allows the key to be placed over and around the lock bolt, which is how the springs are compressed through the pushing motion.

While the former three key types are all for padlocks, these two types are both used for mounted casket/chest locks with push-and-slide mechanisms: sub-types CC1 and CC2. These are respectively operated by 3E and 3F keys, which is observable by their bit apertures. In type 3E, the inverted T has ‘serifs’, creating two tips pointing backwards towards the handle, while in 3F keys the T is without serifs, thus having straight angles and no tips (Figure 6.20). While the difference is slight in terms of form, it has a significance for which parts of the bit interacts with the spring in the locks CC1 and CC2, which is demonstrated in the lock classification.

6.2.4 Type 4: Lift keys

The fourth and last main key type is used in lift locks [NO *løftelåser*], and are called 'lift keys' [NO *løftenøkler*], both made from wood. As addressed earlier, the presence and distribution of these keys in Scandinavia in the Iron Age is uncertain, presently documented by only one find from Lund in Sweden, from the early 11th century layers of the town (Blomqvist and Mårtensson 1963:124–126). It is more known in the early Middle Ages, such as in Trondheim and Bergen (e.g. Cadamarteri 2011; Reinsnos 2013). While it is possible that this type mainly occurs in medieval urban contexts, a bone key from the Orkney Islands illustrates that they occurred in rural settlements as well, possibly in the Viking Age (cf. Traill 1885, see 4.1). Thus, the type is included here because lift keys may have been used in Late Iron Age Scandinavia. Future finds may clarify this development.

Type 4A: Lift keys with short tips

Based on the find from Lund, the lift keys is represented by one sub-type, here called 4A. This type is characterised by a long bit consisting of broad, rectangular tips oriented upwards (Figure 6.21). The handle is short with a hole for suspension. The number of tips, their size and the space between them are the parameters that offers variation and individuality in 4A keys, in correspondence with the construction of DD1 locks. This is demonstrated in the keys from Lund and Stenabreck in the Orkneys (Figure 6.21 and Figure 6.22) which both have three tips, but with differing dimensions.

Figure 6.21. Wooden type 4A key from Lund (KM 53436:745, Photo: Kulturen's online find database, http://metropolis.kulturen.com).

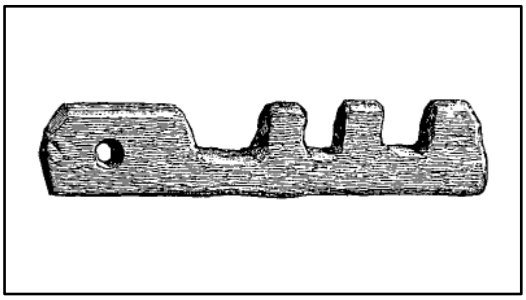


Figure 6.22. Whale bone type 4A key from Stenabreck on North Ronaldsey, Orkney Islands (after Traill 1885, Fig. 4).

6.2.5 Undetermined key type

There is one potential key form that I have not managed to determine securely to a type because of uncertainties regarding its function. It does not appear in the Norwegian material, as far as I am aware, but has been documented by at least four finds from the Black Earth of Birka (following The Swedish History Museum's online museum database) and one find from the Danish island of Bornholm (Müller 1888-1895, No. 618; Vedel 1886, No. 184)

The presumed key has a straight handle and loop, but the bit is peculiar: it is shaped by bending the stem into three or four curves, ending in a pointed tip (Figure 6.23). There are no complete examples that may illustrate exactly how many bends there were and which direction the tip pointed. The one illustrated on the left below has a missing tip, and the latter is preserved by only the bit. If the tip pointed back towards the handle, as in 1B keys, it could have been used for a pulling motion, but how it could do that without the curves colliding with the mechanism is uncertain. If the tip pointed the other way, it could have been used to push, but the same problem would arise. It could also have been used in a turning motion, but in what form of mechanism I cannot discern. Alternatively, it may not be a key at all, but a form of girdle-hanger for suspending diverse implements. I think that it most likely is a key, but what form of lock it may have operated is not known at present.

Figure 6.23. Potential keys of undeterminable type from the Black Earth at Birka (SHM 9993:1, SHM 14563:33; Photos: © SHM).

6.3 Lock classification

The following classification encompasses four main types and twenty-nine sub-types of locks. I have separated the pull locks into eleven sub-types (A1–A7, AA1–AA4), the turn locks into nine (B1–B5, BB1–BB4), the push locks into eight (C1–C6, CC1–CC2), and lift locks currently consists of one sub-type (DD1).

6.3.1 Type A: Pull locks

The locks within type A are all operated by pull keys and their common locking principle is centred upon a pulling motion. The twelve sub-types are divided into two groups based on whether they are operated by one pulling movement (i.e. pure pull locks, sub-types A1–A7) or a combination of pulling and sliding (i.e. pull-and-slide locks, sub-types AA1–AA4). Type A locks are primarily in the form of mounted locks on containers and potentially doors, but the locking principle is also applied in one type of padlock.

Sub-type A1: Mounted pull locks with angled lock spring

The locks within sub-type A1 secured small boxes and caskets with sliding lids and were operated by 1A keys. They are characterised by a horizontal placement of the lock spring, fastened underneath the lid. This is similar to the next types, A2 and A3, but the form and attachment of the lock spring differ. An A1 lock consists of a lock spring and a lock cover, and may also have been equipped with a keyhole fitting (Figure 6.24). The lock spring is a flat iron bar narrowed into a spike or a loop at one end, with a blunted, angled bend in the other. The blunt end is the part interacting with the key, while the narrow end is attached through the lid. The blunt end may be rounded, square, or wedge-shaped.

The angled shape of the A1 lock spring has caused puzzlement regarding its function, causing it to be classified as a key (see Figure 6.24 below). To my knowledge, Müller (1911, Figure 6.25) was the first to interpret its function in his study of the Roman Period burials at Juellinge. Müller put much effort into understanding the locking mechanism, even making a functioning replica. However, he did not illustrate precisely how the replica looked and how the lock parts were mounted, so the following presentation is based on his description of the find.

Figure 6.24. Two 1A.1 pull keys with two type A1 lock springs, keyhole fitting, and lock plate (Left: C14607a-c; centre and right: C4453-4454, C4456b).

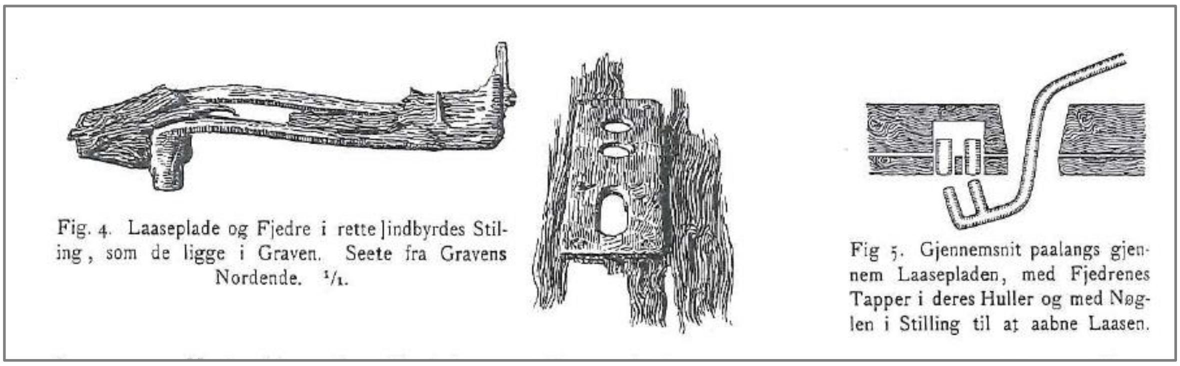


Figure 6.25. Illustrations of the Juellinge lock with suggested function (Müller 1911, Figs. 4-5).

Recognising that the A1 lock was attached to a sliding lid was central to understanding its function. Wooden caskets and boxes with sliding lids (*'Schiebedeckel'* in German, see Ilkjær 1993a) have been found in several cases from the Early Iron Age inside and outside Scandinavia (e.g. Engelhardt 1869: Pl. 17, 9–10; Müller 1911; Almgren and Nerman 1914, 1923), with and without locks on them. In Norway, only lockless boxes have been found (cf. 5.1), but locked boxes can now be confirmed to have existed here as well (see also A3).

Envisioning a rectangular box with a lid sliding to the right, the A1 lock spring would be fastened to the underside of the lid, on the left short side, with the blunt spring facing downwards. The lock cover would be riveted transversely to a ledge at the end of the box case (a 'half-lid' according to Müller 1911:6), which the lid would cover when closed. In locked position, the spring end would protrude through the lock cover, keeping the lid in place. The key would be inserted from the side, aligning the bit with the blunt end, and by pulling on the key the spring would be pressed up from the lock cover, allowing the lid to be slid away, taking the lock spring with it (Figure 6.25, right). To lock, the lid would be slid back into place and the lock spring would snap back into the lock cover aperture. The lock cover would be set into the wood in such a way that the spring would slide behind it and not collide with the ledge it was placed on. The locking, thus, did not require use of the key.

Andrzej Kokowski (1997:Abb.1a, d, with references) has presented alternative arrangements of this lock based on finds from present-day Poland and Germany, where the lock is placed into the casket side. This involves a different way of constructing containers than is currently known from Scandinavia, and may not be valid for the finds studied here. The number of apertures in A1 lock covers relate to the number of springs, which again corresponds to the number of tips on the key bit. The same is true regarding dimensions; the shape, size, and placement of the apertures also correspond to those of the springs and the key. These variations reflect efforts at achieving uniqueness and individuality within the main form, which would provide the lock with its security function. In a find from Hov, Gran, Oppland, Eastern Norway (C4453–56, Figure 6.24, centre and right), there is an oval keyhole and a cross-shaped aperture in the lock cover. The latter is made to accommodate the lock spring, which has a wedge-shaped end, and the similarly shaped bit of the 1A.1 key. In the find from Juellinge, illustrated above, the lock cover had two circular apertures for two parallel lock springs and an elongated keyhole. There was no key in the find, but the lock parts demonstrate that a two-tipped pull key of 1A.2 type operated it (cf. Müller 1911:6, Fig. 5). Thus, this sub-type may be divided into two variants, the ones with one spring making up A1.1, and those with two making up A1.2, operated by their respective key variants.

In this lock type, the cover performs two tasks: keeping the lock secure by blocking the spring from being moved, while at the same time making sure only the correct key can enter the lock. This feature is centred on achieving restriction (following the definition in 3.5) and is present within practically all of the locks in the material, expressed in different ways by the various forms and arrangements of lock parts and fittings, as this classification will demonstrate.

Sub-type A2: Mounted pull locks with flat lock spring

The locks in sub-type A2 have a similar construction as the A1 lock, but they were likely used on caskets with sliding lids rather than boxes. Where A1 is small and elongated, suitable for a small container, the A2 lock parts are larger and seem to reflect use on containers of casket size. Like the A1, the A2 lock consists of a lock spring and a lock cover, but the lock parts have differing forms, performing the same tasks in a different way (Figure 6.26). They were operated by 1A keys, and potentially by 1D keys.

Instead of an angled lock spring, the A2 spring is a flat iron strip riveted to the underside of the lid. The lock cover is a flat or slightly arched iron fitting with an angled blocking ledge at one end, circular or rectangular apertures below the ledge, and rivets along the sides. Following the interpretation of Gotlandic finds presented by Almgren and Nerman

(1923), illustrated to the left in Figure 6.27 below, the lock cover was riveted in place underneath a horizontal ledge at the end of the casket. When locked, the lock spring would rest within the cover, held in place by the blocking ledge. The apertures in the cover allowed the tips of the key bit to access the spring. Thus, they ensured that only the key with the correct bit could open the lock. Such lock covers are also used in sub-types A6 and AA1, described below, and are only diagnostic of the A2 type in combination with the spring or with evidence that the container had a sliding lid.

Locks within sub-type A2 were operated by inserting a key through a keyhole next to the lock cover. By placing the bit into the cover aperture and pulling the key upwards, the bit would compress the lock spring, freeing it from the blocking ledge and allowing the lid to be slid away. To lock, the lid would be closed like in A1 locks and thus not require a key.

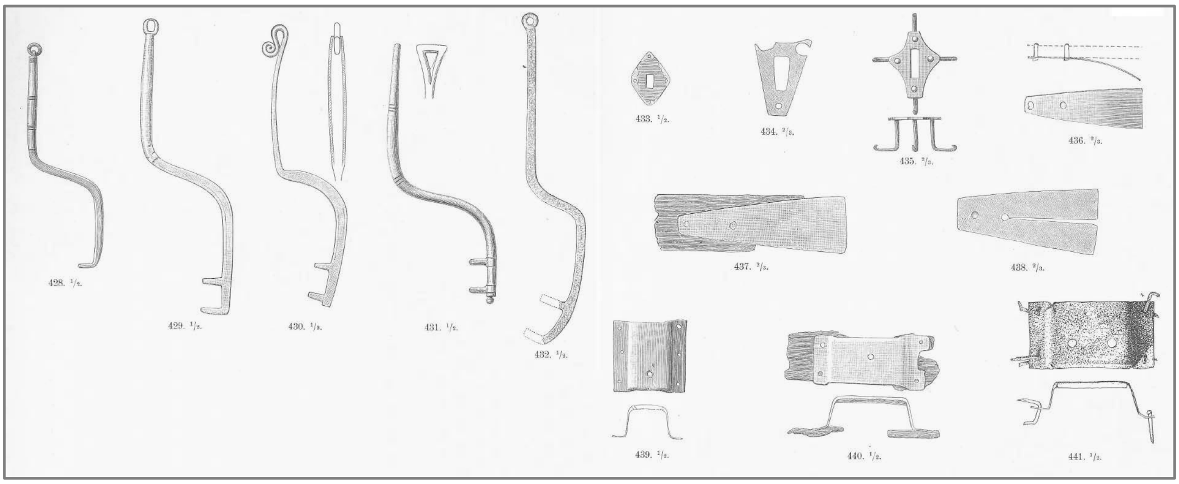


Figure 6.26. Keys and A2 lock springs, lock covers, and keyhole fittings from Gotland (from Almgren and Nerman 1923,Taf. 29).

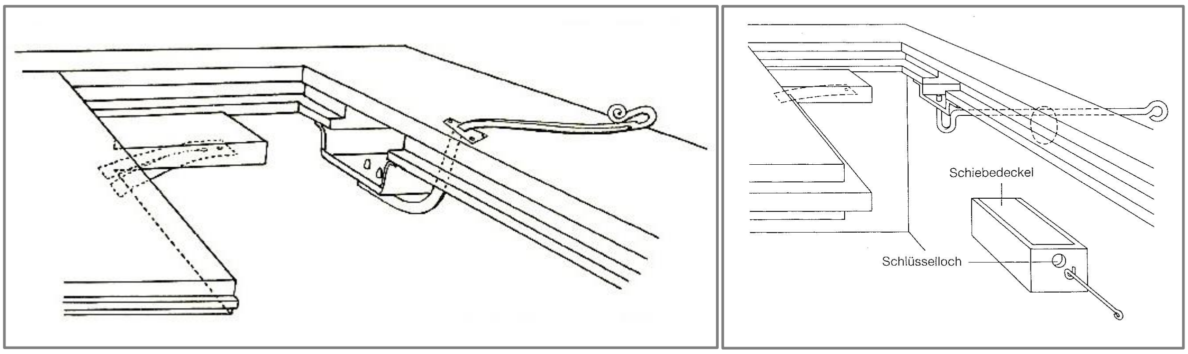


Figure 6.27. Reconstructive drawings of A2 locks, respectively operated by a 1A.2 key (Almgren and Nerman 1923:80, Find no. 310) and a 1D key (Ilkjær 1993a).

In the material from Gotland these locks were operated by pull key variants 1A.1 and 1A.2 with respectively one or two-tipped bits. Correspondingly, the lock covers have one or two apertures and the springs are single or double-leaved. Thus, the morphological differences in the lock parts and keys represent two variants of different complexity, A2.1 and A2.2. Jørgen Ilkjær (1993a) has suggested that 1D pull keys with U-shaped bits were used in such locks as well, concerning key finds from Illerup Ådal (Figure 6.27, right). His interpretation of their function is based on that of Almgren and Nerman (1923), adapting it to suit the U-shaped pull key. In Ilkjær's version, the key is inserted through a keyhole in the front instead of a keyhole in the lid. To my knowledge, no 1D keys have been found in association with locks, but from a functional perspective I believe Ilkjær is correct in suggesting they were used in the A2.1 variant. Theoretically, they could also have operated A1.1 locks.

Sub-type A3: Mounted pull locks with separate spring leaves

The third and fourth sub-types of pulling locks are currently unique examples of their kind, both stemming from the Oseberg burial. The A3 is discussed here, while A4 is presented below. In *Osebergfundet II* (Brøgger and Shetelig 1928), find no. 60a was described as a possible locking device. This I believe is correct. As described in 5.1.1, the artefact in question is a rectangular plate of whale bone or antler with a triangular, pediment-shaped extension at the top, which I consider to be a sliding lid for a box (Figure 6.28). The rectangular aperture below the pediment is a keyhole. On the underside, on each side of the keyhole, are two elongated sections with remains of lock spring leaves.

The spring leaves are riveted to the underside of the lid, and they were as long as the cut-out sections beside the keyhole. To function as springs, they would not be straight, but have enough tension to arch outwards. When locked, they would be blocked by the side plate of the box, keeping the lid from being removed. Judging from their arrangement, the key used for operating this lock was a 1C.1 pull key. The key would be inserted through the lid and turned 90 degrees, aligning the tips of the bit with the spring leaves. Pulling on the key would compress the springs into their respective sections, allowing the lid to be slid sideways. Importantly, the key would have to be removed from the keyhole before the lid could be opened completely. The pediment may have served as a handle for this operation, as it protruded over the side of the box. Like in the former types, locking did not involve a key, only sliding the lid back into place so that the springs resumed their arched positions behind the side plate.

Figure 6.28. Photo and drawing of whale bone/antler box lid with keyhole and A3 lock mechanism (Photos: © KHM, UiO; Illustration: S. Krafft).

Figure 6.29. One of the two bucket-shaped caskets from Oseberg and fragments of its type A4 lock (C55000/76, Photos: Mårten Teigen © KHM, UiO).

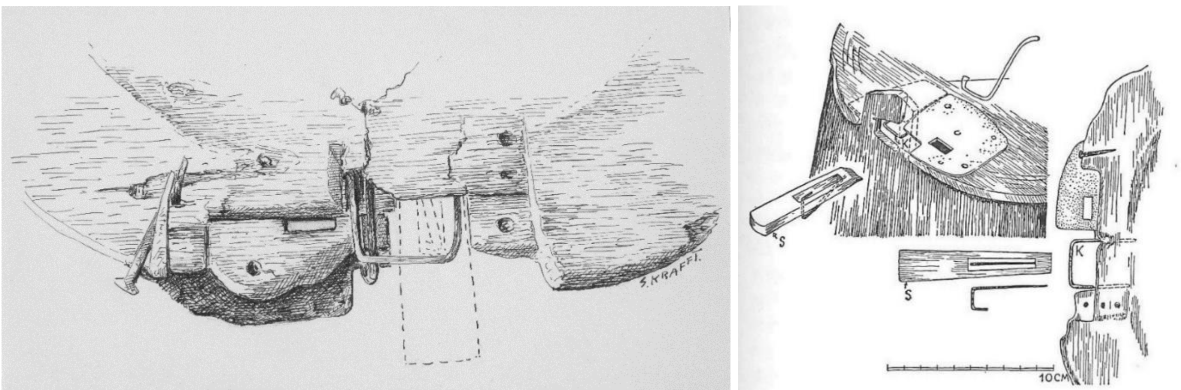


Figure 6.30. Left: Drawing of underside of the Oseberg 'tine' lock (Illustration: S. Krafft, © KHM, UiO). Right: interpretation of the A4 mechanism (from Berg et al. 1966, Fig. 12).

Sub-type A4: Mounted pull locks with angled lock spring inside bolt

The A4 sub-type is the other unique lock from Oseberg, mounted on an equally singular container: the bucket-shaped wooden caskets presented in Chapter 5. Only one of these two had a preserved lock, and while the casket itself was splendidly preserved and reassembled, the lock itself is partly fragmented.

It consists of an angled, hook-shaped lock spring originally set inside a wooden, wedge-shaped bolt with an open, rectangular centre, as well as a U-shaped iron cramp functioning as blocking ledge (Figure 6.29). There is a fragmented lock plate with keyhole on the top, and based on the rivet marks under the lid, there was likely a lock cover underneath. While the lid is relatively intact, the wooden bolt that secured the lid to the container only remains in small wooden fragments, and how the lock spring was attached to it cannot be determined for certain. Yet, as demonstrated here, it has been possible to reach a relatively clear understanding of its arrangement and operation based on the preserved pieces and the remains on the casket lid (cf. Berg et al. 1966).

Following the reconstruction by Arne Berg, Arne Emil Christensen, and Aslak Liestøl (1966, Figure 6.30, right), the lock mechanism is positioned on one side of the lid, by one of the casket's two extended staves. On the opposite side, a circular iron bolt secured the lid through a hole in the other stave. The lock spring would be placed inside the wooden bolt, fastened at the narrow end, the angled end pointing upwards. The blocking ledge cramp was placed horizontally into the lower part of the lid. The bolt with the spring would be inserted into the rectangular hole in the stave, sliding into a narrow section cut into the lid. In locked position, the angle of the lock spring would be blocked behind the cramp, and the majority of the bolt would be concealed between the lock plate and cover, with only its handle-shaped end protruding through the arched stave (larger wooden fragment top right in Figure 6.29).

To unlock the A3 lock, an angled pull key with a single tip (likely of 1A.1 or 1B.1 type) would be inserted through the keyhole at the side, the bit reaching through the lock cover, and by pulling on the key, the spring would be lifted free from the blocking ledge allowing the bolt to be extracted. As in the types described above, the key was not needed to lock the casket; the spring would snap in place behind the blocking cramp when the bolt was fully inserted.

Sub-type A5: Mounted pull locks with external lock cover

The A5 type is another rarity among the Norwegian finds. The type is based on a find from the same Roman Period burial at Hov in Gran as the A1 lock above, where it could have secured a larger box or casket. No other examples are currently known from Scandinavia, but a similar type is known from 3rd to 4th century sites in Germany and Poland (Kokowski 1997, Abb. 2b). Its arrangement and function is therefore based on these finds, initially interpreted by Walther Schultz (1927) concerning a German find from Wetzendorf near Leipzig, Saxony-Anhalt.

Like most pure pull locks, the A5 consists of a lock spring and a lock cover (Figure 6.31). The lock spring is an elongated, narrowed iron band folded back upon itself at the lower end, creating a flexible spring leaf. The lower end tapers to a point, and the upper end forms a loop around a movable ring. The lock cover consists of two parts; the first is a flat iron plate with rivets in the corners, two circular apertures, and a blocking ledge turned inwards. On top of the first plate is an arched metal plate. It is riveted in place, covering the apertures and hiding them from view. There is no proper keyhole in this lock; the key would be inserted into the arched piece of the lock cover. The cover and apertures would ensure that only the key with the correctly dimensioned hook and bit could reach the spring.

Figure 6.31. Lock cover and lock spring of A5 type (C4456-57).

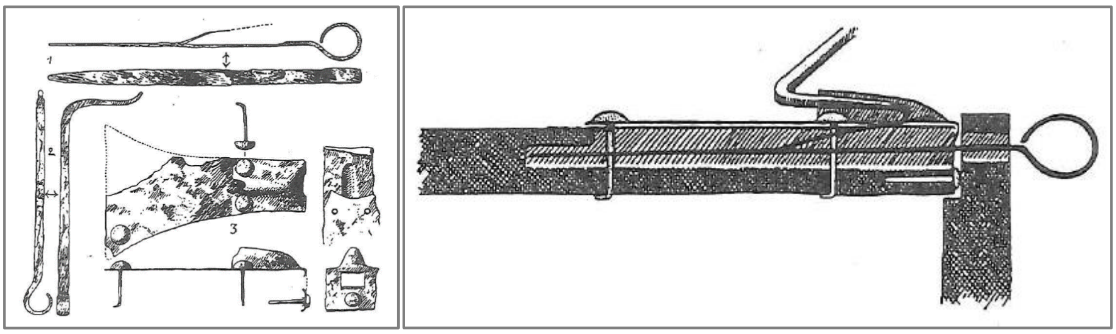


Figure 6.32: Reconstructive drawing of A5 lock mechanism of 'Hassleben-Leuna type' from Wetzendorf, Saxony-Anhalt, Germany (from Schultz 1927, Abb.1).

In the reconstruction by Schultz illustrated above (Figure 6.32), the lock cover is oriented horizontally, but it could theoretically have worked vertically as well, as illustrated by the next lock type, A6. Schultz had no wooden remains to base his interpretation on, so horizontal and vertical arrangements are equally possible, the first indicating a sliding lid and the latter a lifting lid. Yet, as this find is of similar Roman Period date as the other locks for sliding lids (e.g. A1 and A2), the former is the most likely.

In such a horizontal arrangement, the lock cover is placed externally onto the lid, with the blocking ledge towards the end of the case. When locked, the lock spring would be set into a cut-out section underneath the lock cover. The top end with the ring would protrude through a hole in the casket side, while the spring leaf was blocked by the cover. To unlock, the key would be inserted into the arched fitting to reach the holes in the lock cover. By pressing downwards, the spring would be compressed, allowing it to be extracted from the side of the casket, and the lid to be slid out from the case.

The key type used for this lock is not clear, as there was no key in the Hov find. In the Wetzendorf find presented above, an angled pull key with one tip pointing downwards is depicted, a form which is currently unknown or unidentified in Scandinavia. The apertures in the Hov lock cover indicate that the key had two thin, closely positioned tips, only found in the key type 1E, known to have been used in A7 padlocks (see below). Whether this key type was used is unclear, as its straight, short handle would make operating the lock slightly impractical. A 1E key with bent handle has been found at Åker (C38683uI, Figure 6.8), but it seems to have been bent by damage rather than by manufacture. Another alternative is the unusually formed 1A-type key from Døsen in Os, Hordaland, Western Norway (B6090I_f, Figure 6.3, left), but its bit is too large and its handle would cause the hand to collide with the casket during operation. Most likely, a variant of 1E or a key like the German one with a very small, transverse, two-tipped bit would have operated it, a currently unidentified type.

Sub-type A6: Mounted pull locks with vertical lock spring

Moving away from containers with sliding lids, the sub-type A6 is a lock mechanism identified on wooden caskets with lifting lids attached by hinges. This type is operated by 1A and 1B keys. As mentioned above, this mechanism is centred on a lock spring placed vertically inside the front of the casket, inserted behind an internally placed lock cover. Some of these lock covers are similar to those of A2 locks, others have a different form.

The lock springs of A6 type are much like those of the A5 type, with folded spring leaf and looped ring, but are shorter and broader (Figure 6.33). The spring can have between one and three leaves of varying width. Contrary to the A5 spring, the A6 lock spring is placed inside the front of the casket with the leaf or leaves facing towards the inside of the casket, in correspondence with the placement of the lock cover. The loop and ring would protrude through the lid of the casket or be attached underneath it. The lock cover is riveted over the lock spring. Depending on whether the spring is set into a cut-out section or not, the cover is either flat or box-shaped, with rivets in three sides and an angled blocking ledge on top. Some lock covers are also widened to accommodate an internal keyhole fitting, as illustrated below. The lock covers have between one and three apertures, and the lock spring has between one and three spring leaves. Thus, the A6 sub-type is divided into three variants: A6.1, A6.2, and A6.3.

Figure 6.33. Front and back of an A6 lock from Birka, consisting of lock spring, lock cover with keyhole, and a fitting possibly for the lid (SHM 34000:Bj 1081, Photo: © SHM).

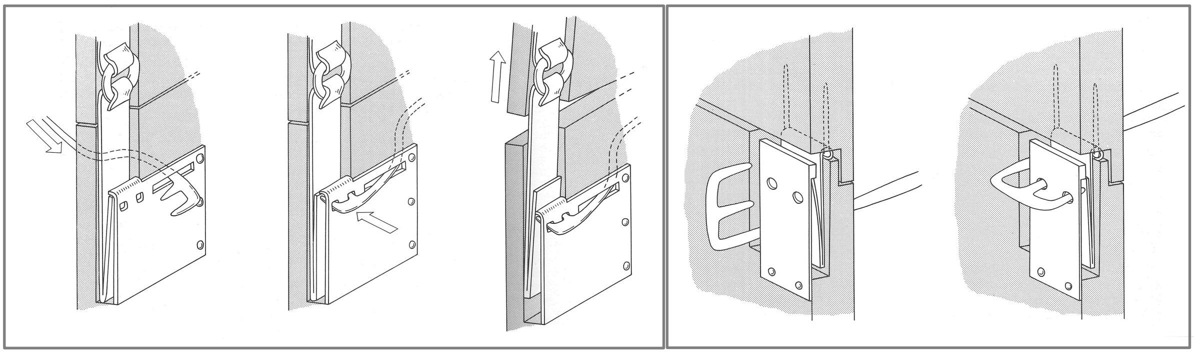


Figure 6.34. Illustrations of two different ways of operating an A6 lock, using a 1A or 1B type key (from Ottaway 1992, Fig. 283a-b).

As illustrated by Figure 6.34 above, A6 locks are operated by inserting either a 1A or 1B key through a keyhole to the side of the lock, aligning the bit with the lock cover apertures. Pulling on the key compresses the spring, freeing it from the blocking ledge, allowing the lid to be lifted. The lock spring is attached to the lid, so it follows upwards, which also ensures that it is not lost while open. Again, locking requires closing the lid. While lowering the lid, the lock spring would be inserted into the opening between the lock cover and the casket front, and by applying some pressure to the top of the spring, it would be compressed as it passed through. Once past the blocking ledge, the spring would expand into locked position behind the lock cover.

Sub-type A7: Portable pull locks with internal cover plate

The last sub-type within the group of pure pulling locks is A7, a padlock type. Before presenting this, it is worth noting a particular issue concerning the study and determination of padlocks. In this classification, the padlocks are classified by how the lock is operated by movement, which connects the inner mechanism to the shape and form of the outer casing and keyhole. However, the internal mechanism of padlocks is fragile, often broken or unrecognisably corroded. Thus, they are generally challenging to determine. Somewhat ironically, it is also challenging if padlocks are well preserved, in which case the inside is not visible. Some aspects can be gleaned from the outside, but X-ray is often the only option for studying the parts inside. Correspondingly, if the inner mechanism is visible, the outer case is often heavily damaged or missing, preventing a full determination of a lock's inner and outer features. Thus, type determination of padlocks involves correlating several finds to estimate the common features.

In determining the sub-type A7, the Norwegian finds (e.g. Figure 6.35) are regarded in connection to interpretations of finds from Århus (Figure 6.36, cf. Hellmuth Andersen et al. 1971; replicated in Ottaway 1992, Fig. 284b concerning the York finds). The mechanism in A7 padlocks is in many respects identical to the mounted variants, centred on applying pulling motion by the use of a pull key, but in a smaller and more compact edition. The pull keys operating A7 locks are the characteristically short, two-tipped keys of the 1E type.

Figure 6.35. Internal lock cover plate and shackle fragment of A7 padlock and corresponding 1E key (C21926d-e).

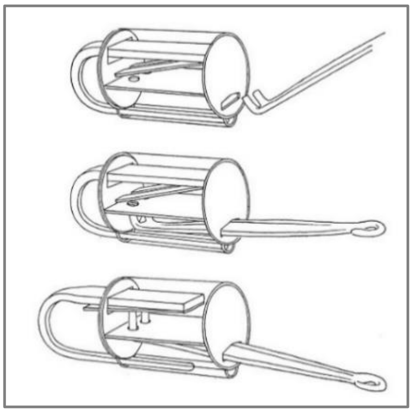


Figure 6.36. Functional illustration of a A7 lock based on find from Århus Søndervold (from Hellmuth Andersen et al. 1971:186).

The lock itself consists of two main parts: a lock case and a shackle with bolt and spring. The shackle is U-shaped, and has the spring attached at one side, the bolt end on the other. The lock case is generally cylindrical in shape with a tube for the bolt on the outside. An internal cover plate separates the case into two chambers, one for the spring and one for the key. Thus, the aperture for the spring is on top of the lock case and the keyhole on the bottom, placed diagonally to each other according to the chambers. The cover plate has two apertures for key bit tips, aligning with the spring leaves that are oriented inwards.

When unlocking a padlock, one hand holds the lock case while the other operates the key. As illustrated above for the A7 type (Figure 6.36), the key is inserted through the keyhole in the bottom of the lock case, bringing the bit to the top of the chamber, aligning the two tips with the two holes in the cover plate. By pulling on the key, the tips enter the holes and compresses the spring leaves, allowing them to be released from the case and the shackle to be removed. Releasing the springs would probably be done by pulling on the lock case, as the hands were occupied with holding the lock and key. The key could be taken out of the case, freeing up one hand to remove the shackle entirely. This process would be valid for all of the padlocks treated here, with some variation pertaining to their particular constructions. To lock, the key is not needed, which is also a common trait for the padlocks. Aligning the shackle with the respective apertures in the case, and pressing down on the shackle causes the spring to compress as it is reinserted into the case, and to expand into locked position once fully entered.

Sub-type AA1: Mounted pull locks with ‘cover bolt’

Moving on to the pull-and slide locks, these are characterised by having bolts that secure the lid with one or two hasps. Thus, they are used on caskets and/or chests with hinged lifting lids. The first sub-type of this kind, AA1, is defined by having a so-called ‘cover bolt’, a bolt that incorporates the features of both lock cover and lock bolt. The lock spring is a separate part, fastened to the container. This means that the bolt is movable, while the spring is fixed. This particular type is secured by one hasp. As illustrated below, AA1 locks are operated by 1A and 1B keys. The sub-type is separated into variants depending on the number of leaves in the lock springs, holes in the cover section of the bolt and tips in the key bits. The range varies between one and three, resulting in the variants AA1.1, AA1.2, and AA1.3.

The AA1 lock spring is very similar to that of type A2, but more narrowed towards the base where it is fastened by small nails. It is fastened flat against the casket front with a cut-out section behind it so it can flex. Alternatively, it is riveted to the lock plate (as in T21080/22). The cover bolt is placed horizontally over the lock spring, attached to the casket front using cramps fastened to the front, loosely enough so it can move. The middle cover section is slightly arched, and has apertures in correspondence with the number of the spring leaves. Underneath is a transverse blocking ledge that the spring rests against, keeping the bolt in place. In Figure 6.37 below, the cover bolt has one arm reaching into the hasp and the other is made into a spiralled handle for sliding the bolt sideways when locking and unlocking. The bolt in Figure 6.38 has two straight arms and a handle set into the middle of the bolt plate (not visible from the side illustrated). The reconstruction drawing by Patrick Ottaway (1992, Figure 6.39) shows a bolt without a handle where the key is used to move it. This is a possibility, although not confirmed in the Scandinavian material.

There is a range of small variations in the construction of locks, which is true for all of the types. In the example with the central handle, this arrangement had consequences for the shape of the lock spring and the bolt itself. The handle goes through the lock spring and the casket front, so the lock spring’s two leaves had to be spaced widely apart to enable the movement of the handle. Thus, the blocking ledge on the bolt was sectioned into two smaller ledges at each side of the bolt arm. The small nuances are conscious choices made by the lock smith, resulting in diverse and individualised mechanisms.

Figure 6.37. AA1-type cover bolt with rolled-up handle (B68450).

Figure 6.38. Fragmented AA1 cover bolt and hasp with corresponding 1A.2 key (C55731/7,9).

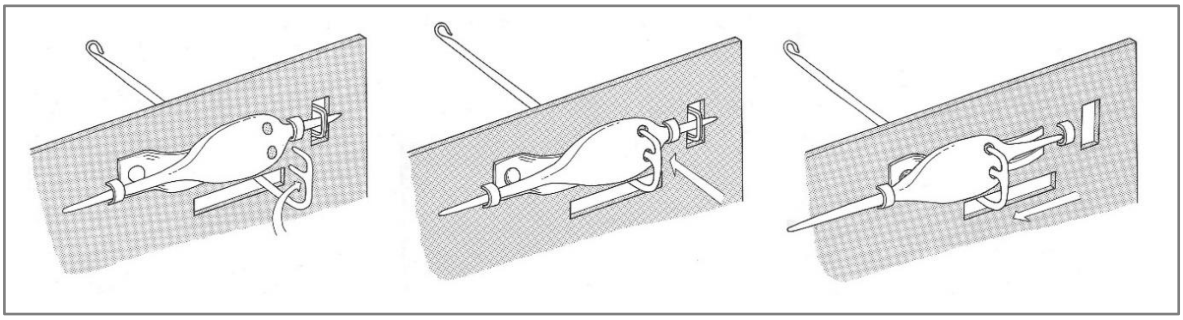


Figure 6.39. Functional illustration of AA1 lock (from Ottaway 1992, Fig. 282).

To unlock a AA1 lock, the key would be inserted from below (or above) and the bit placed according to the aperture(s) in the cover bolt (Figure 6.39). Pulling on the key would move the lock spring away from the blocking ledge, allowing the bolt to be slid sideways using the handle or the key. Sliding the bolt would release the hasp, allowing the lid to be opened. To lock, the cover bolt would be slid the opposite direction until the spring was back behind the blocking ledge. This would be done using the handle – or the key.

Sub-type AA2: Mounted pull locks with 'springed bolt'

The sub-type AA2 is a pull-and-slide lock for caskets and chests, operated by 1A and 1B keys. It consists of a lock bolt and spring, a lock cover, a lock plate, and a hasp. As opposed to most other mounted lock types (excluding CC1 and CC2), the bolt and spring are comprised into one artefact, which I have termed a 'springed bolt'. This consists of a long iron bar, pointed at one end, with a flat and broad spring at the back, and a handle at the front. Most handles are at the centre of the bolt, while some have a handle at the end (Figures 6.40–6.42).

As identified by Berg et al. (1966), illustrated in Figure 6.43 below, the springed bolt is placed horizontally on the inside of the container with the handle reaching through the lock plate on the front. The pointed tip of the springed bolt protrudes through the lock hasp, securing the lid. The lock plate may be rectangular or oval in shape with a horizontal aperture for the bolt handle. It may also have an aperture for the hasp, but the hasp hole may also have had its own metal fitting. The lock cover is flat with between one and three apertures in it, corresponding to the key bit and the spring leaves. It is placed over the springed bolt with the blocking ledge adjacent to the spring leaves, blocking the bolt’s movement. The cover can be in one or two forms: the first is identical to the covers in A2 and A6 locks, with the blocking ledge at the end of the cover (Figure 6.40), or the cover is completely flat and the blocking ledge is made up by a metal staple placed over the lock spring (Figure 6.41). Based on the variation in spring leaves and apertures in lock covers, the type is divided into three respective variants: AA2.1, AA2.2, and AA2.3.

Figure 6.40. From below: key, springed bolt, lock plate, and lock cover (C23245c).

Figure 6.41. A complete AA1 lock with all lock parts and fittings in place (C58880/27).

Figure 6.42. Springed bolt of AA1 type with handle to the side (C15115).

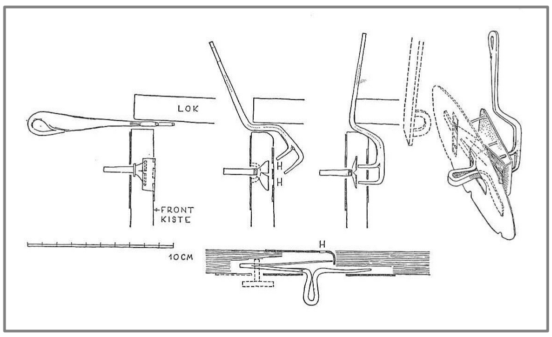


Figure 6.43. Functional interpretation of the lock C23245c (from Berg et al. 1966, Fig. 14)

Unlocking an AA2 lock involved inserting the key from above, through a keyhole in the lid or the front of the chest. It was not inserted between the lid and the front, as suggested by Berg et al. (1966, Fig. 14, see also Reinsnos 2013, Fig. 3.4), because the lid would be fastened to the case with the hasp, preventing such a gap for the key to move in. The angle of the key's hook would not facilitate the key to reach the lock and perform the pulling motion without putting excessive stress on the key, increasing the risk of it breaking. Thus, to ensure a sustainable way of unlocking, inserting the key through a suitable keyhole would be the most feasible. Once in place, the bit would be placed according to the apertures in the lock cover. Pulling on the key would compress the spring, allowing the springed bolt to be slid sideways, removing the bolt tip from the hasp. The hasp could then be lifted out of the hasp aperture and the lid opened. Again, locking would not require a key. After closing the lid and reinserting the hasp, the springed bolt would be slid in the opposite direction so that the bolt re-entered the hasp and the lock spring was fastened behind the lock cover.

Sub-type AA3: Mounted pull locks with open 'cover bolt'

AA3 is the next pull-and-slide sub-type, used on caskets and/or chests and operated by pull keys of the 1C.1 type with the characteristic T-shaped bit. The lock consist of a lock spring, a cover bolt, and two hasps, and could also have had a lock plate and hasp fittings.

In contrast to the AA1 type cover bolt, this has a large aperture in the centre for accommodating the key bit. The aperture is rectangular and horizontal with two circular holes for the key's tips, one on each side. The Norwegian finds are generally too fragmented to determine how the whole cover bolt and spring looked (e.g. Figure 6.44), but a Danish find from Lejre demonstrates how a full AA3 lock was constructed (Figure 6.45). In the Lejre lock, the bolt has two arms, securing two hasps. There are two short blocking ledges on one side of the centre plate, similar to the AA1 type. The lock spring consists of two separate spring leaves that are attached to the upper and lower part of the container front, to accommodate the central aperture.

To unlock an AA3 lock, the key would be inserted from the front, directly into and through the middle of the lock. This is characteristic of this type, but is also recognisable in A3 above. Similarly, the key would be inserted with the bit in horizontal position and then be turned vertically to line up with the two apertures in the cover bolt. Pulling on the key would compress the spring, and the bolt could be slid out from the hasps using the key. The locking process is the reverse, and in this case, the key would be required – unless there were versions that had a handle rather than two bolt arms.

Keys within the 1C sub-type are separated into two variants with respectively two or four tips. Presently, only AA3 locks for the first variant has been identified, suggesting that the latter may not have operated containers, but potentially doors (see AA4 below). There being no clear sign of variation in complexity, the type is not separated further into variants.

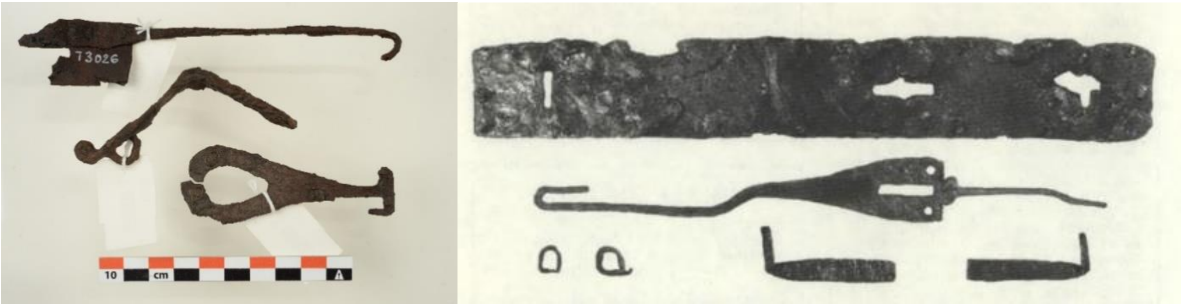


Figure 6.44. Left: Type AA3 cover bolt and hasp with 1C.1 key (T3023, T3025–26). Right: an AA3 lock from Grave 1160 at Lejre. Lock plate, cover bolt, two spring leaves, and possibly cramp fastenings (from Andersen 1969:7).

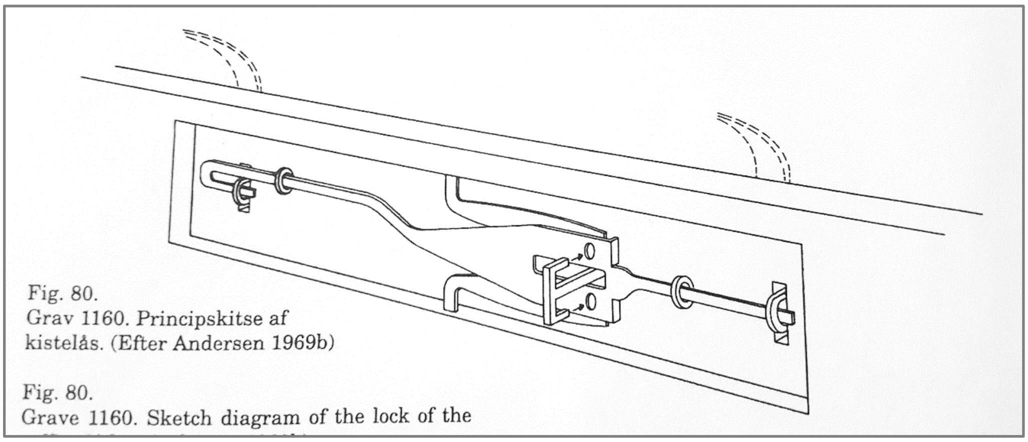


Figure 6.45. Constructional illustration of the AA3 lock from Grave 1160 at Lejre (Andersen 1993, Fig. 80)

Sub-type AA4: Mounted pull locks with wooden bolt

This fourth and last pull-and-slide lock type is one suggested to have secured doors. It is very tentative, because it is not based on any identified lock parts, only on keys that are considered potential door keys (Table 8.8). These are 1A, 1B, and 1C keys of a certain size and form (*c.* 20–30 cm l.). The dimensions of these keys is considered to exceed the size suitable for the presented container locks, suggesting that they were used for other, larger mechanisms. It was demonstrated above in 6.2 that key types may be reconstructed based on the lock, at least to a certain extent. The reverse is somewhat more challenging, because some keys, particularly pull keys, have proved to be applicable in various locks. Thus, specific lock construction and operation is not as visibly identifiable in key forms. However, this sub-type is an attempt at this, intended to present how such pull locks on doors may have looked and worked in the Iron Age. This may raise awareness and aid identification of such items in future investigations.

The use of pull keys in locking doors has been suggested for finds from La Tène and Roman Period Manching in Bavaria, Germany (Jacobi 1974), but I have not encountered discussions of such mechanisms in the Germanic or Northern European materials. These offer some insight into the potential pull lock forms in Scandinavia, however, the closest parallels are locks from medieval buildings from Norway (Berg 1989).

The description and differentiation of AA4 locks are based on these examples, in combination with the large keys. The main principle is that the pull key moves a wooden bolt situated on the inside of a door or a door post. Here, in locked position, the bolt would extend over the door blade/post, preventing the door from being opened inwards (Berg 1989:109–110). Based on how the bolt would be secured and moved, the AA4 type can be divided into three suggested variants: AA4.1, AA4.2, and AA4.3.

The first variant is based on a springless arrangement, as illustrated by the suggested use of keys from Manching, a La Tène oppidum in southern Germany (Figure 6.46). This arrangement entails that the bolt would have been free-standing rather than blocked by a metal spring feature. Here, a 1A.1 or 1B key bit would fit inside a set of perforations in the bolt, and by pulling the key sideways horizontally, or sideways like a lever, it would drag the bolt to the side. If such a variant existed, the key was primarily an implement for barring and unbarring the bolt from the outside, like a removable handle. While there would technically not be a lock present, this would serve the same purpose as locking, as the bolt would only be possible to reach by using the key. The size of the hook and bit would be the parameters ensuring that only the right key could move the bolt.

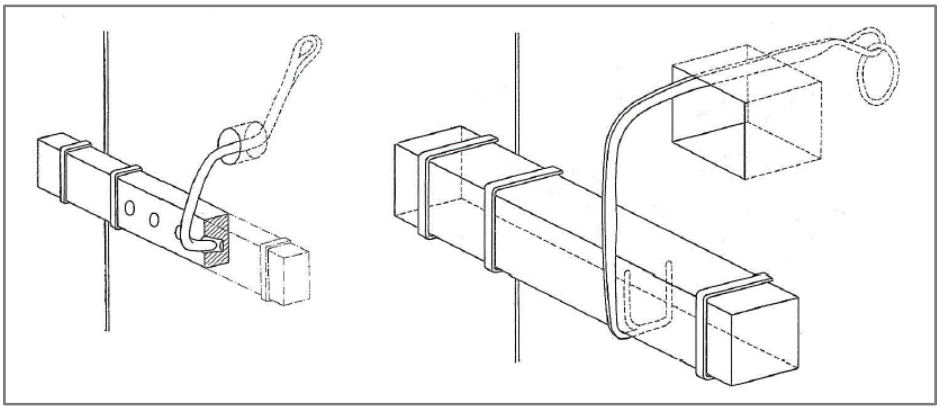


Figure 6.46. Possible construction of springless door bolts of AA4.1 type operated by variants of 1A and 1B keys, based on finds from Manching, Germany (from Jacobi 1974, Abb. 37).

Alternatively, the bolt was secured by a leaved metal spring. Here, the spring would be situated between the bolt and the door, concealed like in the aforementioned cover bolts. The tips of the key bit would reach the spring through apertures in the bolt. In medieval examples, the springs had two or three, potentially four leaves. Thus, these could have been operated by 1A.2, 1A.3, 1B.2, 1B.3, or 1C.1 and 1C.2 keys. The variant AA4.2 is defined based on the use of 1A and 1B keys, as the key would be inserted from above the lock bolt – like the AA1 and AA2 types, while the key would be inserted through an opening in the lock bolt in the AA4.3 variant – like the AA3 type (Figure 6.47). An important difference between the springless and the springed variants is that the former could have been opened and closed from the inside, while the others could not. This means that the latter could be used to lock people into a building, in principle.

In Norwegian lock terminology, locks like the AA4.1 variant are called ‘hook locks’ [*kroklås*], and the AA4.2 and AA4.3 are called ‘bear locks’ [*bjørnelås*], the latter of which could have been operated using one or both hands (Berg 1989:111, 113–115). The sliding motion was performed using the key in the one-handed kind, while in the two-handed kind, the key was operated with one hand and the other moved the bolt by a protruding handle. This is similar to the principle observed in the AA1 and AA2 types.

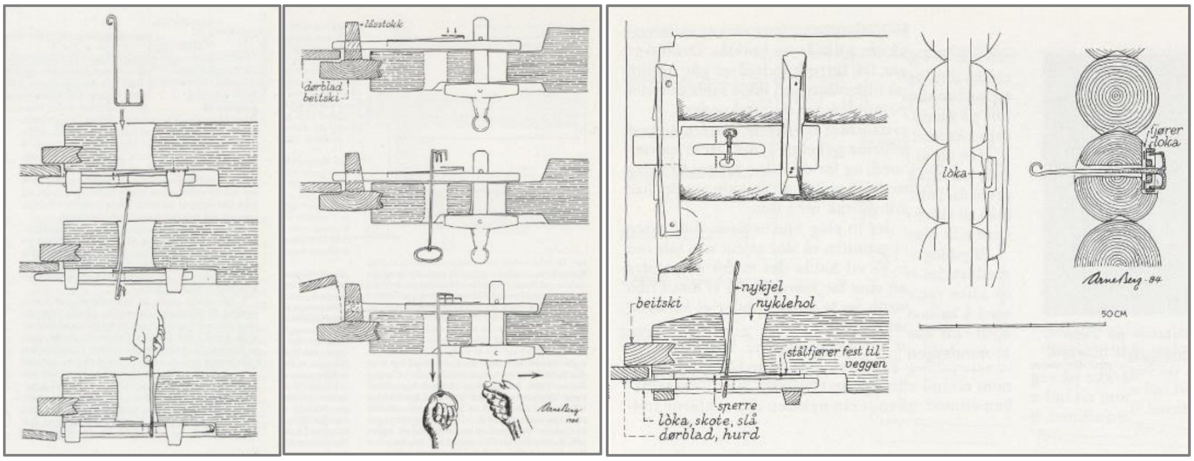


Figure 6.47. From left: Operational illustrations of medieval one-handed and two-handed AA4.2 locks operated by 1B keys, and an AA4.3 lock operated by a 1C.1 key (from Berg 1989:113–115).

6.3.2 Type B: Turn locks

The locks within main type B are all operated by turn keys (Type 2) and their common locking principle is centred upon a turning motion or a combination of turning and sliding. It consists of eight sub-types, divided into two respective groups based on whether they are pure turning locks (B1–B5) or turn-and-slide locks (BB1–BB4).

For the Iron Age, Type B locks are mainly documented as mounted locks on caskets or chests, but there is also one sub-type of padlock and two of mounted door locks. The two latter are based on finds from the end of the period, from urban settlements such as Hedeby and Birka. Similar finds have yet to be documented in Norway, to my knowledge. However, there are turn keys in the Norwegian material that lack their lock counterpart, which may be because they were door keys belonging to such or similar locks. The two door lock types represent what has currently been documented in terms of lock parts, but there may have been more types than what this classification illustrates. Here, lock parallels from sites outside homeland Scandinavia, such as York and Novgorod, are useful in filling out the range of mechanisms.

Sub-type B1: Mounted turn locks with vertical spring

The first sub-type within the group of pure turning locks is sub-type B1. It is used on wooden caskets and chests with lifting lids on hinges. The lock consists of a lock spring and a lock plate with an internal lock cover plate, set into the container front (Figure 6.48 and Figure 6.49). It is operated by 2B.2 variant turn keys.

The B1 lock spring in made from an iron band folded back upon itself with a loop and movable ring on top. The spring is attached to the lid by a cramp. The springs have double leaves, corresponding to the two tips in 2B.2 keys. It is practically identical to those of A6.2 locks, and cannot be safely classified if found alone. Like the A6, the B1 lock spring is placed vertically inside a carved-out section in the front of the casket, but with the spring leaves facing sideways towards the key. The vertically placed cover plate separates the key from the spring, dividing the lock into two chambers (like the A7 padlock). The front lock plate is riveted to the front of the casket so the keyhole is over the chamber next to the spring. The lock plate hides the spring from view and keeps it in place, allowing only the correctly dimensioned key to pass through. In Figure 6.49 below, the lock plate extends over the spring and to the back, also serving as a blocking ledge for the spring.

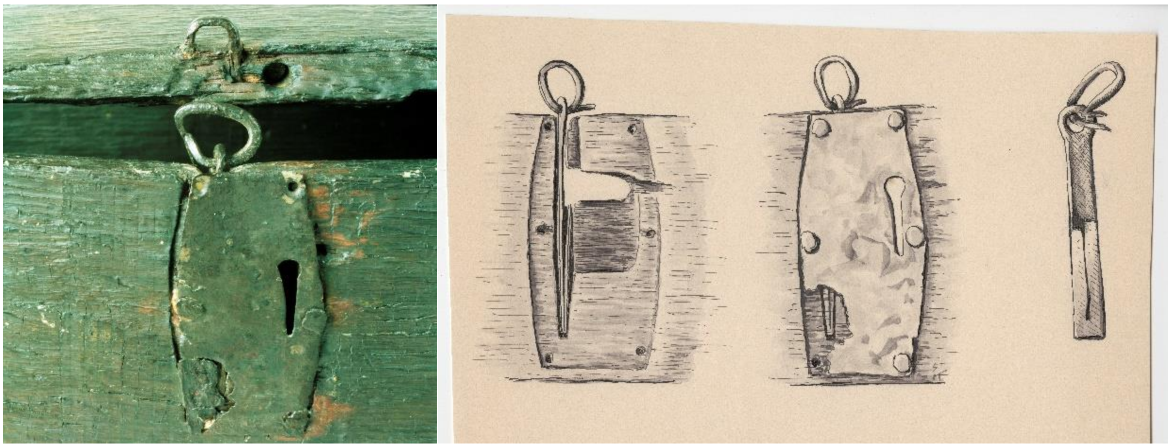


Figure 6.48. Photo and drawing of the B1 lock on the small Oseberg chest (C55000/175, Photos: © KHM, UiO).

Figure 6.49. Type B1 lock with drawing of its construction (C27454xx, Photo: Kirsten Helgeland © KHM, UiO, Illustration: Berg et al. 1966, Fig. 6).

To unlock a B1 mechanism, the key would be inserted through the keyhole and by turning it (to the left in the examples presented), the bit would compress the spring by reaching through the cover plate. Like in A6, lifting the lid would remove the spring from the lock. This required a two-handed operation, maintaining the pressure with the key in one hand and lifting the lid with the other. Locking, as before, involved lowering the lid and reinserting the lock spring, not requiring a key.

The dimensions of the keyhole and perforations in the cover plate, in addition to the distance between the cover plate and the spring, regulate which key may operate a B1 lock. As they otherwise display little variation in form and complexity, the sub-type is not divided into variants.

Sub-type B2: Portable turn locks with cover plate and two chambers

Sub-type B2 is the only padlock type identified with a turning mechanism, exemplified by one find from Norway in addition to Swedish finds from Helgö (cf. Tomtlund 1970, 1972, 1978). They are operated by 2A and 2B keys (see below).

Like most padlocks, B2 locks have a lock case and a U-shaped shackle with springs attached at one side. The main trait is that it has two chambers separated by a vertical cover plate. Like in A7 locks, one chamber holds the spring and the other accommodates the key. The latter chamber is larger than in the A7 type, to allow for the key bit to turn inside it. The shape of the lock case varies. The Norwegian padlock from Ottestad in Stange, Hedmark, in Figure 6.50 below, has a cylindrical lock case and a tube at the side for the shackle end. Examples from Helgö show that there were also rectangular, arched, and five-sided lock cases (Figure 6.51 and Figure 6.52). In these, the shackle end is inserted into the case itself, but are otherwise similar in arrangement. The aperture for the spring is at the top of the lock case, and the keyhole is placed on the side, at an angle to the shackle. The spring has either one or two leaves attached to the end of the shackle by small rivets. They face inwards towards the cover plate, which has apertures corresponding to number of spring leaves and the key bit. While the keyhole allows only the correct key to be inserted, the cover plate ensures that the lock cannot be picked using other implements.

The Ottestad padlock has a vertical, rectangular keyhole on the lower part of the case, indicating that it is operated by a turn key with a flat bit (2A type). Either it did not have a cover plate or the cover plate had a square aperture dimensioned to fit the key bit. The Helgö locks have L-shaped keyholes placed in the middle of the side plates, two apertures on top of the cover plate, and a supporting hole at the back. These were operated by a turn key with two tips on the bit and a stem pin, like the 2B.2 type. B2 locks would therefore be operated by different key types and had some differences in their inner arrangements warranting a separation of the type into two respective variants: B2.1 and B2.2.

To unlock, the key would be inserted through the keyhole in the side of the lock case. By turning the key in a semi-circle, the bit would reach through the cover plate and compress the spring, freeing the shackle. Upon locking, the spring and the bolt end would be aligned with the apertures at the top of the lock case and reinserted into the case by pressing down on the shackle. As in all observed padlock types, the key was not needed to lock.

Figure 6.50.Cylindrical B2 padlocks from Ottestad, Stange, Hedmark (C2601) and Helgö, the latter showing spring and internal cover plate through a crack in the case (SHM 29870:12156, Photo: © SHM).

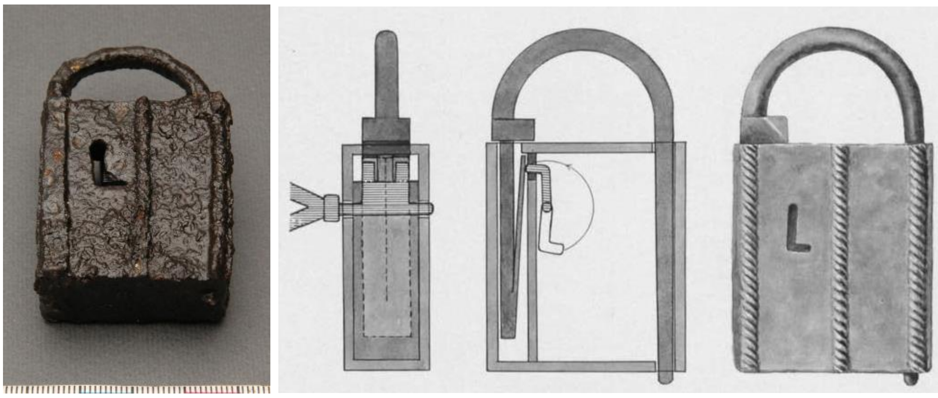


Figure 6.51. Rectangular B2 padlock from Helgö, and a reconstructive drawing of its function (SHM 25075:573, Photo: © SHM; Tomtlund 1970, Fig. 1).

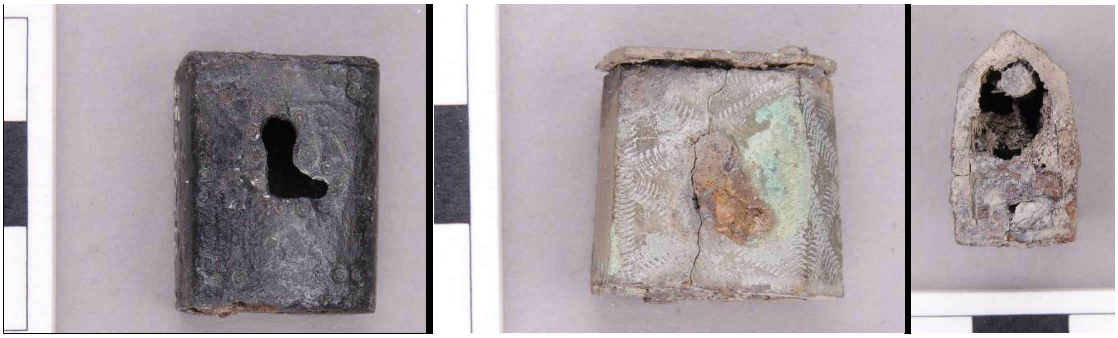


Figure 6.52. Two B2 padlocks from Helgö with rectangular, arched case and five-sided case, respectively (SHM 25075:810 and SHM 25726:2667, Photos: © SHM).

Sub-type B3 and B4: Mounted turn locks with 'tongued' bolt

The B3 and B4 sub-types constitute one container lock for caskets and chests with lifting lids and one door lock, respectively. They are treated together because they are nearly identical in construction despite their separate uses, and were both operated by 2C keys with hollow stems. The B3 and B4, as well as B5 below, are grouped among the pure turn locks because their bolts are moved by the turning motion of the key and not by a subsequent sliding motion, as in the turn-and-slide group (BB).

B3 is documented in Scandinavia by one complete lock from Ribe, southern Jutland, Denmark (Figure 6.53, left), and a potential find from Broa in Halla, Gotland, Sweden (SHM 10792 and 11106, cf. Almgren 1955). A mechanism similar to the Ribe lock is from Ailcy Hill in Ripon, Yorkshire, England (Figure 6.53, right). No definite B4 door locks are known from Scandinavian finds, with the possible exception of a lock bolt from the Black Earth at Birka (SHM 35000:43357), and bolt finds from Hedeby (Westphalen 2002, Taf. 71.1–13). The form and arrangement of B4 is therefore based on finds from Lloyd's Bank and Coppergate in York, studied by Arthur MacGregor (1978) and Patrick Ottaway (1992), respectively.

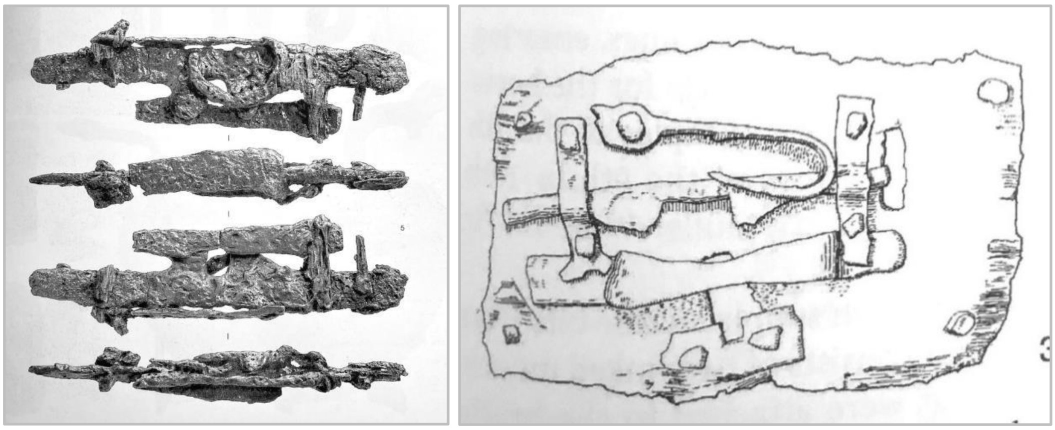


Figure 6.53. Type B3 locks from grave G10 at Ribe, Denmark (left, from Feveile 2006, Tavle 61, 5), and from Ailcy Hill in Yorkshire, England (right, from Ottaway 2020, Fig. 9.12, 3).

The B3 and B4 mechanisms are centred on straight lock bolts with two pointed or arched projections underneath. These resemble a forked tongue, therefore I apply the descriptive term 'tongued' bolt to differentiate them from other lock bolts. These projections were the parts that interacted with the key; by turning the key, the bit used these to move the bolt sideways between the locked and unlocked position. The bolt was held in place by a spring that connected to a small projection or a shallow dimple on top of the bolt (Figure 6.53). The spring is shaped like a sideways lower-case q, widened into a wedge shape at the top, with a narrowed bar bent backwards into an arch below. Both Ottaway (1992) and MacGregor (1978) call this feature a tumbler, but in my understanding, a tumbler is springless and free-standing, while these were attached in a way that provided tension downwards (i.e. springs), enabling them to secure the bolt. So, the spring would be fastened above the bolt, the top plate parallel to it, and the arch reaching down next to the projections below. The widest part of the wedge would have blocked the bolt from moving by standing against the top projection or dimple, and the semi-circular arch was the part that enabled the key to lift the spring when turning. Ottaway has suggested that there could also be wards inside the lock that would correspond to cuts in the key bits.

The find from Ailcy Hill demonstrate that B3 locks were mounted onto containers by rectangular lock plates. The B4, however, seems to have been fastened differently, judging by one particular find from Lloyd's Bank (Figure 6.54). Here, the lock is preserved intact in a wooden case, which demonstrates that such locks were concealed within a piece of wood and mounted on the inside of the door. The bolt end extended into holes in the sides of the wooden case, and at one side, the bolt would protrude and go into the door post when locked. In B3, the bolt would have secured a hasp.

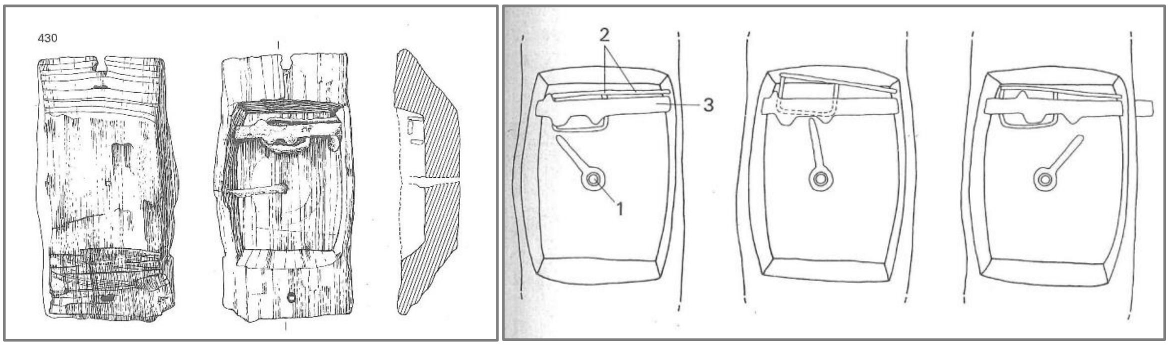


Figure 6.54. Drawing of B4 door lock from Lloyd's Bank in York, with interpreted operative sequence (from MacGregor 1982, Fig 42–43, No. 430).

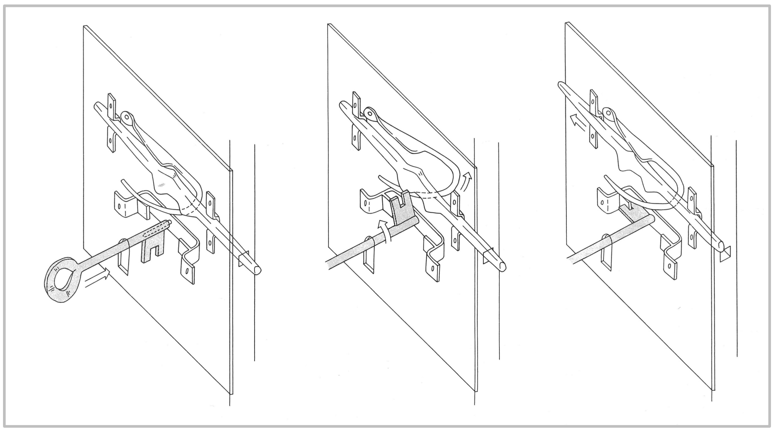


Figure 6.55. Operative sequence of B4 lock (after Ottaway 1992, Fig. 280).

As illustrated above, the B3 and B4 lock were operated by a hollow-stemmed 2C type key. It would be inserted into the lock chamber and placed onto a spindle at the back. Turning the key would lift the spring upwards, releasing the bolt, before applying pressure to the bolt's tongues, making it slide sideways. The dimensions of the bolt and the key would make sure that the bolt moved the necessary distance using one full turn. When open, the spring would rest atop the bolt, the key could be removed, and the container or door could be opened and closed freely. Upon locking, the lid or door would be closed and the key turned the opposite direction, so that the spring resumed its place behind the blocking feature.

The two B4 examples from York show that the mechanism arrangement could be mirrored, depending on which side of the door it was placed on, corresponding to the hinging of the door (see 5.2). Their mounting indicates that the lock mechanism could only be operated from the outside. Thus, the mechanism may only have been locked when leaving the building (or possibly to lock someone inside). There was no feature prohibiting the key from being removed from the lock when open, as is the case in the turn-and-slide locks presented later. This means that users could unlock the door and occupy the building without leaving the key in the lock, and they could leave the building unlocked.

Sub-type B5: Mounted, springless turn locks with sliding bolt

The second door lock with turning mechanism, B5, is based on the remains of a door from Hedeby (Figure 6.56), and I believe they were operated by 2D-type keys also documented at the site. There are also medieval parallels from Norway that offer additional insight into how these could have been constructed (e.g. Berg 1989:111–113). The lock consists entirely of wood and does not include a metal spring mechanism, as type AA4.1 presented above. The existence of such locks may mainly be determined by their keys, as wood is commonly not preserved outside exceptional cases such as Hedeby and similar sites (cf. 4.1.1).

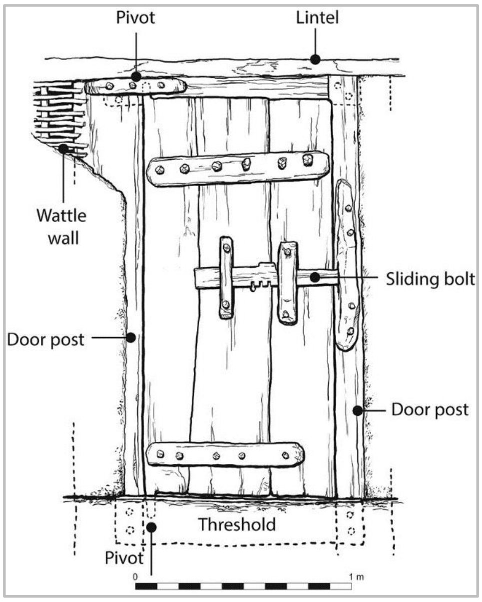


Figure 6.56. Illustration of door from Hedeby with B5 lock (from Eriksen 2015, Fig. 4.21, after Schultze 2010).

The B5 lock consists of a horizontal wooden bolt with rectangular cuts underneath (three in the Hedeby lock) and a projection on top. It is placed on the inside of the door, held in place by two wooden fastenings. In locked position, the end of the bolt is set into a hole in the door post, keeping the door in place. The cuts under the bolt are reached by the key from below through a keyhole in the door. By inserting and turning the key, the bit catches on the first cut and moves the bolt sideways. By revolving the key several times, the bit moves the bolt by each cut, until it is freed from the post. The projection on top of the bolt would make sure it could not be removed entirely from the fastenings holding it. Locking the door required revolving the key the same number of times in the opposite direction, moving the bolt back into the door post.

The room for variation in B5 locks is limited, and the main possibility was to vary the distance from the keyhole to the bolt. The different lengths between handle and bit in 2D keys indicate this. Unlike the B4, this lock was possible to lock from the inside, simply by pushing and pulling the bolt out from the door frame by hand. The key was therefore necessary only when locking from the outside.

Sub-type BB1: Mounted turn locks with perforated bolt

The first sub-type within the turn-and-slide locks is BB1. It is a mounted lock for caskets and chests, operated by 2B keys. It consists of a lock bolt, a lock spring, and a front lock plate, and secures a hinged lid with one, two or three hasps (Figure 6.57).

The BB1 lock plate is rectangular with an upside-down L-shaped keyhole placed in the centre and rectangular apertures for the hasps. When there is one hasp, it is commonly situated to one side on the lock plate; when there are two hasps, these are placed at each side of the lock plate, and an eventual third one is situated in the middle, close to the keyhole.

Figure 6.57. Type BB1.2 locks on a casket (left, C22519b-e) and a chest (right, C55000/133, Photo: © KHM, UiO).

The lock bolt is long iron bar attached to the lock plate by iron cramps. The spring is attached to the lock plate above the bolt and has between one and three leaves. The ends of the bolt are thin, protruding through the hasps when locked. In the cases with two hasps, the bolt is bent into a hook at one end, and may have an additional hooked extension in the middle for the third hasp. The main feature of the bolt is the central piece, shaped like an angled plate with a supporting hole for the key stem at the back. On top, it has a transverse blocking ledge and, next to this, perforated apertures that allow the tips on the key bit to interact with the spring above. These apertures and the supporting hole separate this sub-type from the other turn-and-slide locks, as they ensure that only turn keys with tipped bits and stem pins, i.e. 2B type, may operate such locks. The number of apertures range between one and three, following the spring form, and the type is therefore separated into the variants BB1.1, BB1.2, and BB1.3, respectively operated by 2B.1, 2B.2, or 2B.3 keys (Figure 6.58). Additionally, there are wards underneath the bolt in the form of round or square notches, in correspondence with apertures and cuts in the key bits. These further ensure that only the correct key may reach the spring, signifying different levels of complexity and individuality.

To unlock BB1 locks, the key would be inserted through the keyhole and placed into the supporting hole in the bolt plate. Turning the key 45– 90 degrees would cause the key bit to rotate sideways and up, and the tips of the key to pass through the perforations in the bolt and lift the spring up from the blocking ledge. With the key in this position, the key would be used to slide sideways – either to the right or the left, depending on the lock arrangement. In doing so, the bolt would move under the spring and retract from the hasps (Figure 6.59). After closing the lid and reinserting the hasps, locking involved reversing the process using the key. The bit itself was not needed for this process, as the stem pin would be sufficient to slide the bolt back into place.

In principle, the key would need to stay inside the lock when it was open. Unless there was sufficient space between the lock bolt and lock plate (which there may not have been, judging from the short stems of 2B keys), attempting to withdraw the stem pin from the supporting hole would cause the bit to collide with the lock plate. It would be possible to circumvent this, if necessary, by sliding the lock into locked position without inserting the hasps. Only then could the key be removed. To lock the container after doing so would require unlocking the mechanism, inserting the hasps, and locking it again.

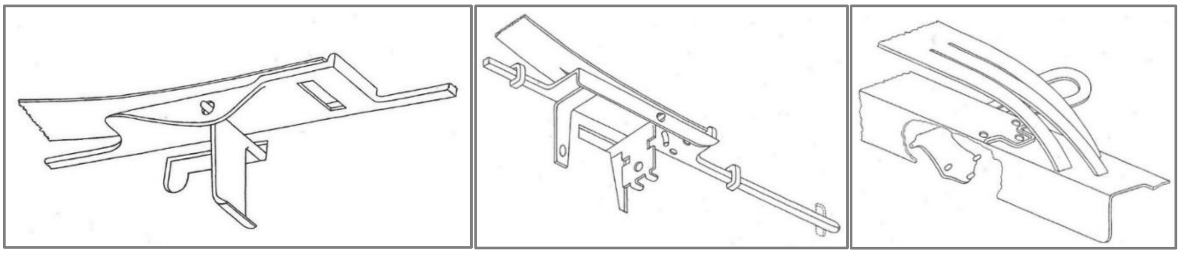


Figure 6.58. Variants of BB1 locks (from Almgren 1955, Figs. 83, 86, and 88).

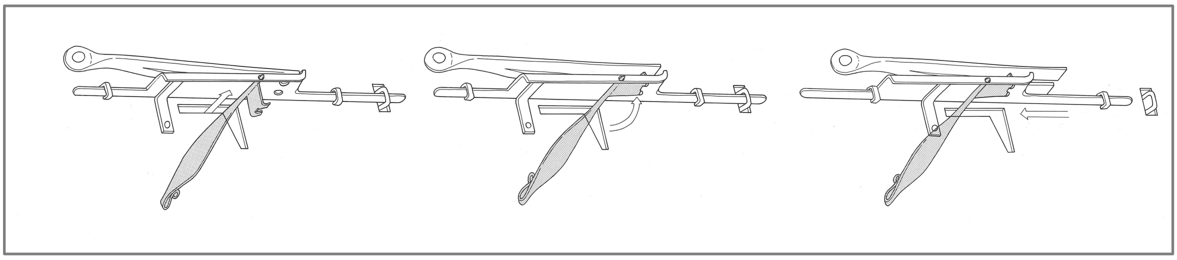


Figure 6.59. Operational drawing of a BB1.2 lock (from Ottaway 1992, Fig. 288).

Sub-type BB2: Mounted turn locks with 'tumbler bolt'

The second sub-type of turn-and-slide locks is BB2, which was also a mounted lock for caskets and chests. It closely resembles the BB1 lock, but it was operated by 2A keys rather than 2B keys, which is related to the way the key manipulates the spring through the bolt.

Similar to the former type, BB2 locks consists of a horizontal bolt, a leaf spring, and a front lock plate with central horizontal or L-shaped keyhole and hasp aperture (only one is currently known for this type). The differing trait is in the lock bolt, which has two small tumblers placed through two holes in the top plate, rather than perforations like the BB1 (Figure 6.60). As described by Almgren (1955:35), these are free-standing iron pins (*'tappar'*) with wide, flat ends keeping them in place. The pins are the connecting points between the key and the spring, and lift the spring during the turning motion of the key.

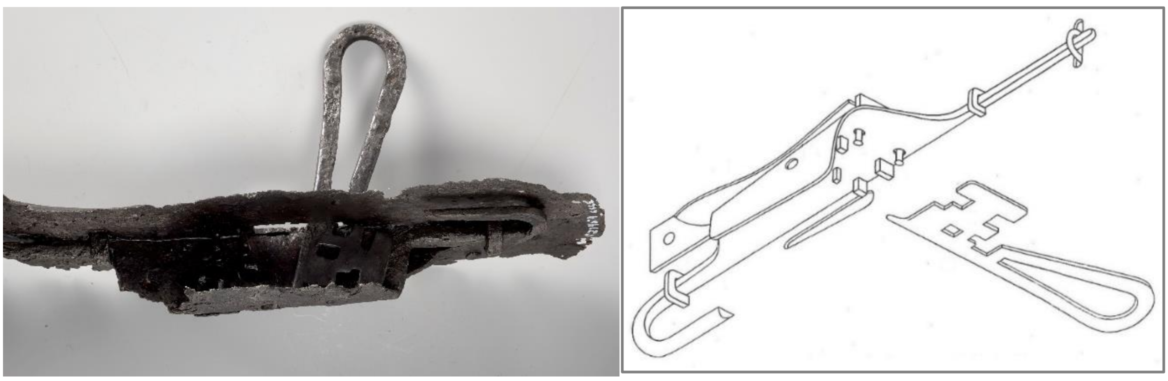


Figure 6.60. BB2-type lock and 2A.3 key (C27454cccc, Photo: Kirsten Helgeland © KHM, UiO) and reconstructive illustration (from Almgren 1955, Fig 80–81).

Figure 6.61. BB2 lock in open position with bit of 2A.2 key stuck in the keyhole (B5730p, q). Wards and tumblers visible under the bolt (right).

As illustrated above, BB2 locks were operated by 2A turn keys with cuts and apertures in the bit mirroring wards under the bolt. The arrangement of wards underneath the bolt allowed only the key with the correct bit apertures to lift the tumbler pins. The wards would vary in form and placement. Unlocking a BB2 lock would involve turning and sliding like the BB1 type. Similarly, locking required using the key stem pin to move the bolt, and the key could not be removed from the lock in open position. The wards in the bolt would have been set inside the key bit's apertures, preventing the key from being withdrawn through the keyhole.

Sub-type BB3: Mounted turn locks with tumblers, two lock springs, and two bolts

The third turn-and-slide lock type is comparable to the two above. Its operation is based on the same principle of using tumblers to free the lock spring, but its constructional arrangement and operative sequence is slightly different and more elaborate. The type is based on a find from Chamber grave 5 at Hedeby, where it was placed on a small chest (Figure 6.62, see also Figure 5.21 in 5.2). One other lock of this kind is from Birka, on one of the two caskets from Grave Bj 739 (Arbman 1940, Taf. 265:1a), and there is another possible lock from Böklund just north of Hedeby (No. 66.01 in Eisenschmidt 2004b). The lock from Chamber Grave 5 is the most well-preserved of them, and its understanding is based on a treatment by Hans-Jürgen Hundt (1966). It was from his description that I was able to recognise the Bj 739 lock as a BB3 lock.

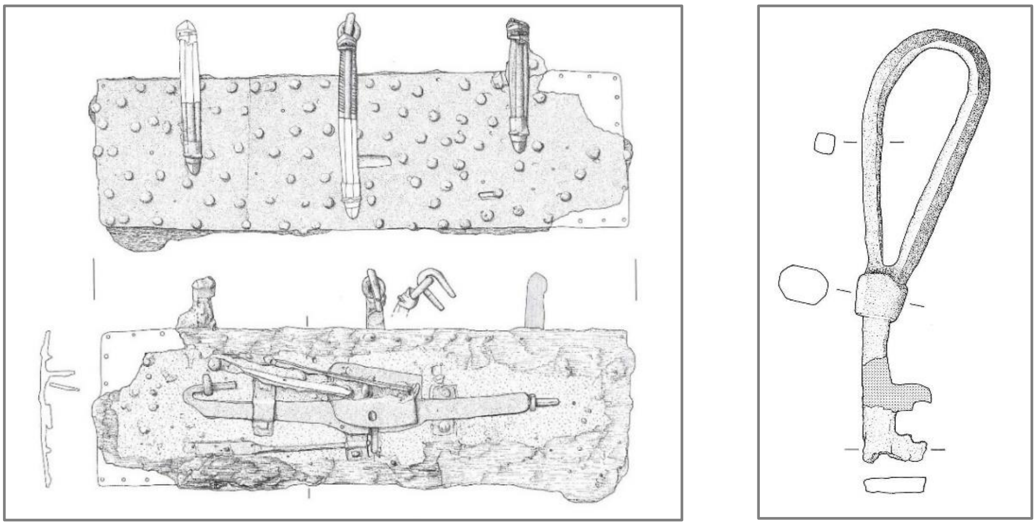


Figure 6.62: Type BB3 lock and key from Chamber grave 5 at Hedeby (Arents and Eisenschmidt 2010b, Taf. 116 no. 119, and Taf. 119 no. 124 a.)

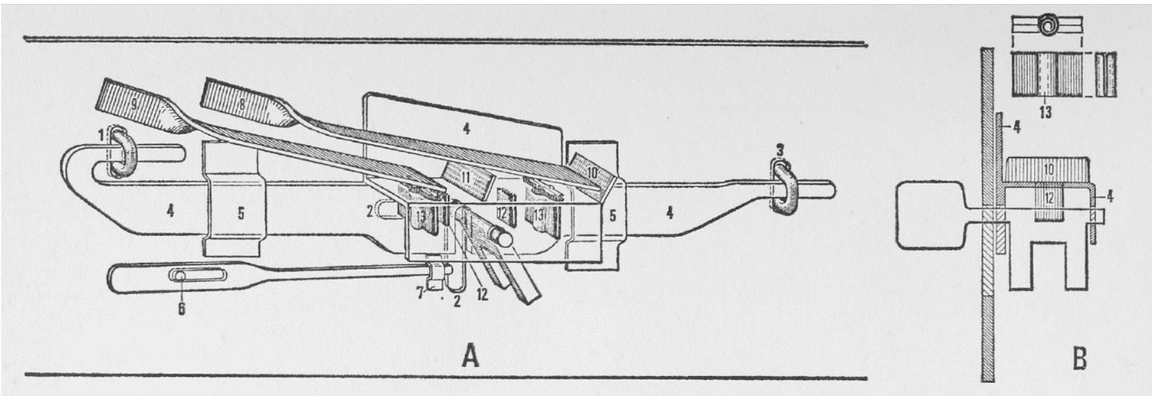
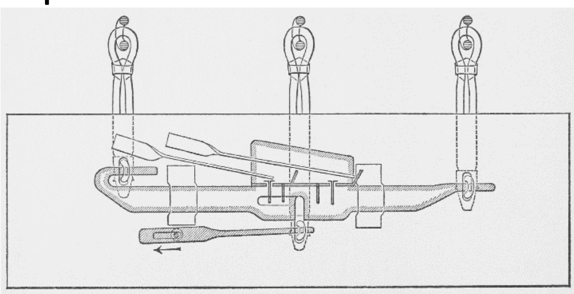


Figure 6.63: Anatomy of the BB3 lock from Chamber Grave 5 at Hedeby (from Hundt 1966, Abb.3 A–B).

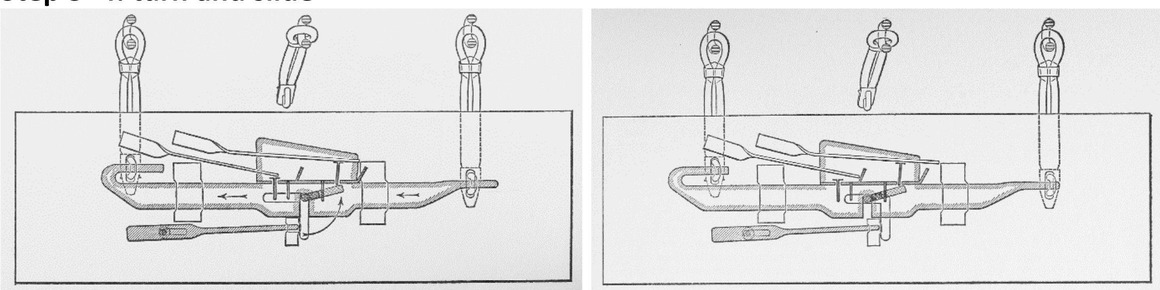
The lock consists of a horizontal bolt, two single-leaved springs, and a front lock plate with a central horizontal keyhole and three hasps. As illustrated by Figure 6.63, the lock bolt has two blocking ledges on top, placed at each side of the keyhole. The two springs are placed next to each other above the bolt, resting against the respective blocking ledges. Next to each ledge there is a tumbler. These are rectangular with a circular centre, with a widened top and base holding them in place. These are additionally guarded by two square wards placed on the underside of the bolt. Their form and placement corresponds to the bit of the key, which is of 2A.4 type. The key is supported by a hole in the back plate of the bolt. In addition to the main bolt, there is a separate thin sliding bolt situated below. This secures the middle hasp, while the main bolt secures the two on each side. The smaller bolt is moved by a circular knob protruding through a rectangular hole at the bottom right of the lock plate.

Following Hundt's (1966) illustrations, I consider the opening of the lock to be centred on seven operational steps, shown in Figure 6.64. The mechanism is viewed from the inside, so the direction of the movements would be inverted for the person operating it. First, the small bolt would be slid to the right and the central hasp lifted up and out of the lock (step 1–2). This would uncover the keyhole and allow for the key to be inserted and set into the supporting hole. The key would then be turned 90 degrees to the left, pressing the first tumbler upwards and releasing the first spring, allowing the bolt to be slid a little to the right (step 3–4). The bolt then is obstructed by the second spring, so the key would be turned 180 degrees to the right, the second tumbler pressing the spring up and away from the blocking ledge, at which point the bolt may be slid all the way to the right, and the remaining hasps lifted (step 5–7). To lock would require inserting the first two hasps, slide the main bolt, then insert the third hasp, and then slide the smaller bolt. Judging by the lock's construction, this key could not be removed from the lock in open position either; the wards would prevent the key from being withdrawn through the keyhole. Like the others, removing it would involve locking the bolt without the hasps in place.

Steps 1-2: slide and lift



Step 3–4: turn and slide



Step 5-7: turn, slide, and lift

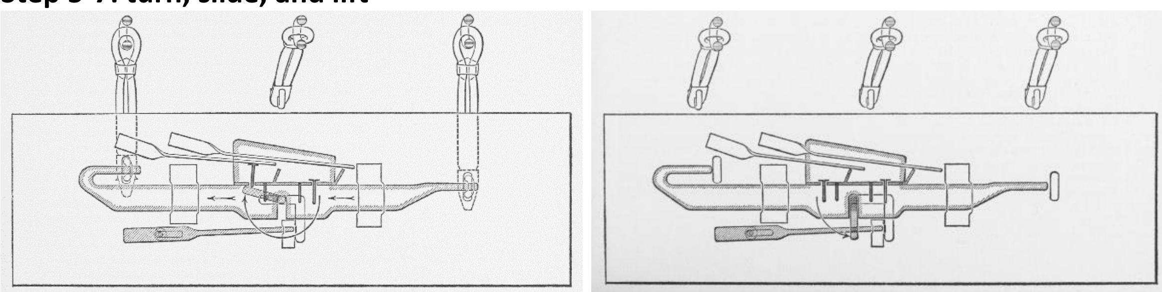


Figure 6.64. Illustration of BB3 unlocking procedure by seven steps (from Hundt 1966, Abb. 5–8).

A seven-step mechanism is unique among the Iron Age mechanisms. While the specific gestures vary, the others are operated by either two or three steps. The pure motion mechanisms are centred on two steps: 1) applying pressure to the spring(s), and 2) removing the bolt and/or spring. The locks with secondary sliding motion centre on three steps: 1) applying pressure to the spring(s), 2) moving the bolt, and 3) lifting the hasp(s) or unfastening bolts. In terms of complexity, this is the most elaborate lock mechanism of those treated here. Concealing and obstructing the keyhole is also a unique feature, as the third hasp in other turning mechanisms is placed close to, but not over the keyhole, and is secured by the main bolt rather than a separate one (e.g. C55000/133 illustrated in BB1 above).

Sub-type BB4: Mounted turn locks with open lock bolt

The last among the turn-and-slide locks is a type currently known from one find, from Bø in Gloppen, Sogn og Fjordane, Western Norway (B6618aa). This mechanism was first studied and explained by Almgren (1955:33). Unfortunately, while the hasps were present, the lock bolt was not found during the study of the material. Old photographs were digitally available (Figure 6.65), but were not of sufficient quality to discern constructional details. Therefore, the following is based on Almgren’s interpretation and illustrations (Figure 6.66).

Like the other turn-and-slide locks, the BB4 lock has a horizontal bolt, a flat spring, and two hasps. The shape of the bolt and the blocking feature is where this differs from the others. The central section of the bolt has an open top, only fitted with a transverse ward in the form of a cramp. The cramp has a small U-shaped bend that corresponds to the aperture discernible in the fragmented 2C key bit. There is a small pin in the back plate of the bolt for supporting the key’s hollow stem when turning. Following Almgren’s reconstruction, the spring would be attached over the bolt, its leaves reaching into the open top and standing against the bolt’s encased centre.

The locking sequence is the same as the BB1 and BB2 types. In turning the key 180 degrees downwards and to the left, the key bit – whether it was flat like 2C.2 or with tips like 2C.3 – would press the spring out and over the rim of the bolt, allowing the bolt to be slid out of the hasps. In open position, the spring would rest on the flat part of the bolt arm. When locking, the spring would re-enter the bolt opening when this was slid in the opposite direction. It is possible that the key could be removed from this lock without having to place the bolt in locked position, by turning the key 180 degrees backwards. However, without knowing what the lock plate and keyhole looked like, this cannot be determined for certain.

Figure 6.65. Photographs of the BB4 lock, key, and hasps from Bø in Gloppen, Sogn og Fjordane (B6618aa, Photos: © KHM, UiO).

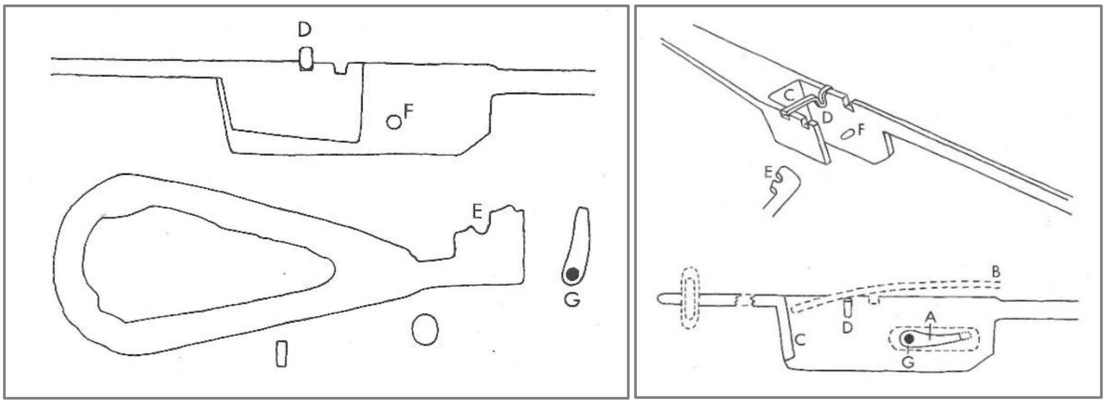


Figure 6.66. Lock of BB4 type with 2C-type key (from Almgren 1955, Figs. 74-77).

6.3.3 Type C: Push locks

The locks within main type C are all operated by push keys and their common locking principle is centred upon a pushing movement. One characteristic of these is that the spring is inserted into the key bit by pushing, being compressed within it, while the key bit presses the spring in a certain direction in the other types. Another characteristic is that the springs are always attached to the bolt, not a separate lock part, which varies within the two former types. Padlocks are the most common form of push lock, but the locking principle is also applied in two sub-types of mounted locks for containers. The main type consists of six sub-types, which are split into two groups based on whether they are operated by a pure pushing motion or a combination of pushing and subsequent sliding; the padlocks are pure push locks (C1–C6) while the mounted locks are push-and-slide types (CC1–CC2).

Sub-type C1: Portable push locks with box-shaped case

The first push lock type is C1. It consists of a lock case and a U-shaped shackle with springs at one end. The shackle often has a rectangular plate between the shackle arch and the springs. The spring mechanism is oriented vertically inside a box-shaped lock case, which is characteristic for this type. They are operated by 3A push keys with rectangular bits corresponding to the shape of the lock case.

The box-shaped lock case commonly has slightly slanted sides in the front and the back, providing a trapezoid shape. The keyhole is in the form of an upside-down T placed on the front. Unlike the A7 and B2 padlocks, this and the other push-type padlocks have one central chamber for containing the springs and additional wards. The shackle end is set into a tube at the back. There are apertures on top of the lock case, where the bolt and springs enter it. Their size, number, and placement correspond to the springs, which are set centrally or at different angles. Some of the C1 locks also have wards in the form of plates or iron rods. There is often a rectangular ward just inside the keyhole, keeping the springs from being visible and obstructing attempts at picking the lock.

The size of 3A key bits correspond to the dimensions of the lock case, with apertures placed in accordance with the placement of the springs and wards. In this lock type, there is much room for variation in terms of size as well as number and placement of internal features. Based on the different internal arrangements, the sub-type is divided into three variants: C1.1, C1.2, and C1.3. In variant C1.1, there is one centrally placed spring with up to four leaves (Figure 6.67). In some examples from Helgö, there is a ward behind the keyhole, and the bolt may protrude through the base of the lock case (see Tomtlund 1970, Fig. 2). The belonging key variant, 3A.1, has a central aperture that fits over the spring, in addition to an eventual aperture for the ward. In the C1.2 variant, there are between two and three springs placed at different distances and angles within the lock (cf. Figure 6.15, right). The springs are commonly single-sided or double-sided (arrow-shaped). It is operated by 3A.2 keys, which have bit apertures of different sizes and angles. The C1.3 variant is larger and operated by keys of the 3A.3 variant (Figure 6.68, right). Based on the keys, these have between four and six springs and may have thin iron rods as wards, two or three in number.

C1 padlocks would hang vertically when in use, but opening it likely required holding it at an angle. The key would be inserted the through the horizontal part of the keyhole and aligned with the spring and wards (Figure 6.69). The springs would be compressed by pushing the key upwards to the top of the chamber. Pulling on the case or shackle would then make the springs exit from their respective apertures and the shackle end from the tube at the back. Like other padlocks, it would be locked by reinserting the shackle.

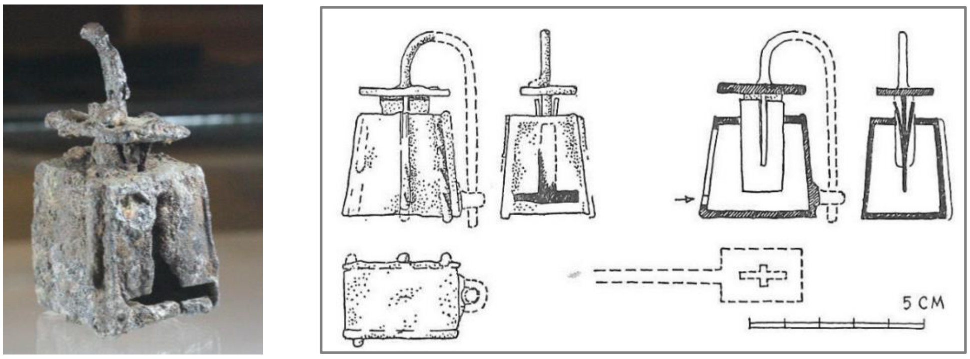


Figure 6.67. Padlock of C1.1 type with reconstructive drawing (C27317zz, Berg et al. 1966, Fig. 8).

Figure 6.68. Padlocks of C1.2 and C1.3 variants (left: C57027/9; right: SHM 21592:10 from Mästermyr, Gotland, Photo: © SHM).

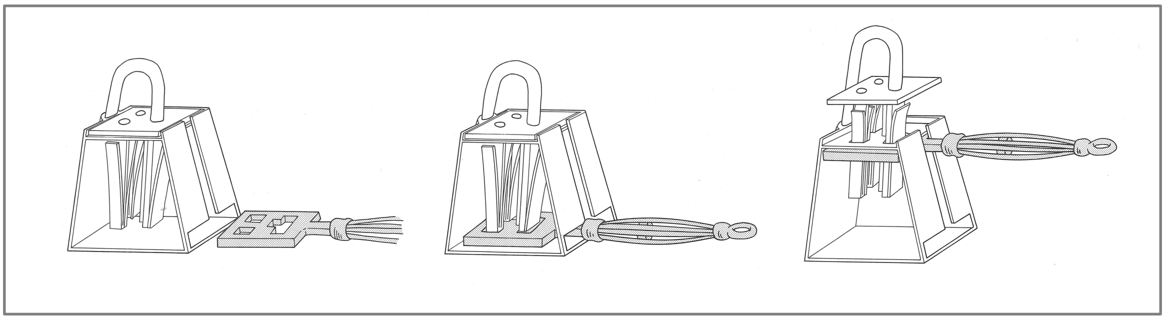


Figure 6.69. Operational sequence of C1 locks (from Ottaway 1992, Fig. 292).

Sub-type C2: Portable push lock with cylindrical case

The next type of push lock is very similar in arrangement to C1, but is characterised by having an elongated, cylindrical case, designed for the use of 3B type push keys. As in the former type, the keyhole is T-shaped, running up the front side of the case. The shackle has a bolt end with spring leaves, and the other end is encased in a tube at the back. The remains of such locks are generally in poor condition, in Scandinavia and outside, and their form and operation is largely reconstructed based on their keys.

In Figure 6.70 below, there is only one central spring, but based on the various 3B keys, there could be up to three or four sets of springs and three ward spikes. Therefore, this lock type can be divided into two variants, the ones with only one central springed bolt making up C2.1, and those with multiple springs making up C2.2, respectively operated by key variants 3B.1 and 3B.2. The illustration below shows how the springs are attached on each side of the shackle bolt, with the ward spikes mounted into the top plate at each side of the spring aperture. The bolt and wards are formed and arranged in a way that prevents the springs from being reachable trough the relatively large keyhole. These, as well as the size of the bit according to the case, are the parameters that are variated upon to create individuality.

Like in C1, the C2 case would hang vertically, but held up to horizontal position when operated. Similarly, the opening sequence involves pushing the key upwards to compress the springs, and closing requires pushing the shackle and spring back into the case.

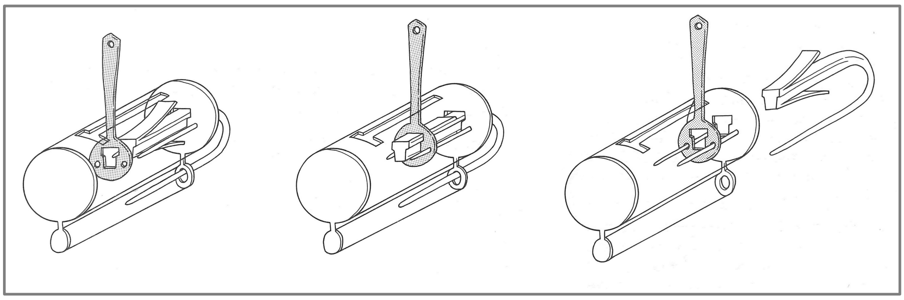


Figure 6.70. Operational sequence of C2 lock (from Ottaway 1992, Fig. 285).

Figure 6.71. Type C3 padlock case with vertical lock spring aperture (C22444h) and shackle and bolt with arrow-shaped lock spring (B15005/30)

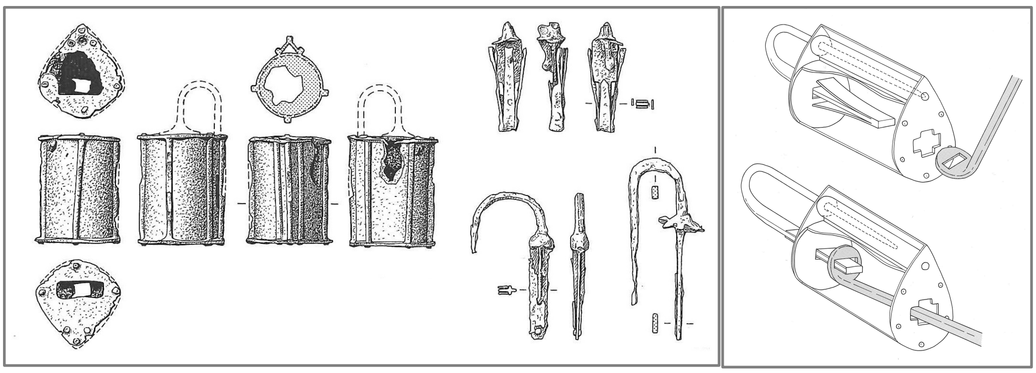


Figure 6.72 Two C3-type padlocks and three shackles from Hedeby (from Westphalen 2002, Taf. 69, Nos. 9-12) and operative sequence of C3 locks (Ottaway 1992, Fig. 2).

Sub-type C3: Portable push locks with droplet-shaped case

The padlocks in sub-type C3 are very similar to C2 locks, but differ by being operated by 3C keys with angled bits. This is indicated by the keyhole, which is rectangular and placed in the base rather than on the side. The lock cases are generally droplet shaped, as the tube for the shackle end here is a triangular chamber set onto the cylindrical lock chamber (Figures 6.71–6.72). The springs are attached in two different ways. In some, they are double-leaved, placed on each side of a flat bolt that is slightly wider than the leaves (Figure 6.71, right). These are either set vertically or horizontally into the case. In others, there are three leaves, placed on a square-sectioned bolt (Figure 6.72, left). Shapes of 3C key apertures also indicate that other spring arrangements are possible, with multiple springs and bars in different directions. Based on the differences in spring arrangement, the type is separated into two variants; those with a double, arrow-shaped spring making up C3.1, and those with three or more spring leaves making up C3.2. These are operated by keys of the respective variants 3C.1 and 3C.2.

When opening a C3 lock (Figure 6.72, right), the case is held horizontally and the key is inserted though the keyhole at the base. By pushing forwards, the key compresses the springs and the shackle may be removed. Like in previous padlock types, the shackle and springs are inserted back into the case to lock.

Sub-type C4: Portable push locks with drum-shaped case

The next padlock type with pushing mechanism is C4. Its case is also cylindrical, but with a drum-like shape rather than a tubular shape, with the flat sides facing horizontally when suspended. This lock type only occurs in one find from Byggland in Kviteseid, Telemark, Eastern Norway (C27454bbbb), and I have not encountered similar ones elsewhere.

The function of this lock was first investigated by Berg et al. (1966), who presented its inner mechanism and suggested its key form, type 3D in this classification. It consists of a lock case and a U-shaped shackle with a slim, arrow-shaped lock spring at one end (Figure 6.73). The spring is situated against the one side of the lock chamber and the shackle end at the other, without any outside tube or inside chamber. The keyhole has a singular shape, a narrow rectangle with semi-circular cuts in the centre (cf. Figure 6.19 in 6.2). It is centrally placed at the base, so the key needed to be inserted with the bit facing the spring.

To open the C4 lock, the key would be placed into the lock by first inserting the tips on the bit, and then tilting the key 90 degrees so that the stem could follow, thus allowing the tips to align on each side of the spring. By pushing the key upwards to the top of the chamber, the spring would be compressed by the sides of the U-shaped key bit. Removing and reinserting the shackle and spring is otherwise similar to the other padlock types.

Figure 6.73. Photo and X-ray image of C4 padlock from Byggland, Kviteseid, Telemark (C27454bbbb, Photo: Kirsten Helgeland, X-ray: Vegard Vike © KHM, UiO).

Sub-types C5 and C6: Portable push locks with attached shackle

The last two sub-types of pure push locks are padlocks, but may also be described as 'fetter locks' (*'fesselschloss'* , cf. Westphalen 2002). This is because they were used as hand or foot fetters to secure humans and maybe animals (see 5.2). In this, they were more specialised than their other padlock counterparts. They are also larger and more robustly constructed, which also seems fit for the purpose they served. Both are operated by 3C keys with the circular angled bits, and have similar constructional, operational, and functional features, for which reason they are considered together here.

The starting point for the C5 and C6 sub-types are the fetter locks from Hedeby, which Petra Westphalen (2002:185–186) separated into four types based on four lock finds (Figure 6.75). These are gathered into two sub-types in this classification, because I consider her types 1 and 2 as variations of one functionally distinct form (C5), and the types 3 and 4 as variations of another (C6). The difference in form is related to a difference in how they were used as fetters. As illustrated in Figure 6.74, C5 was itself used as a fetter in combination with another, non-lockable fetter – and possibly on its own as well – while C6 was a lock that secured two fetters. They could also have connected chains and neck rings in various ways (cf. 5.2).

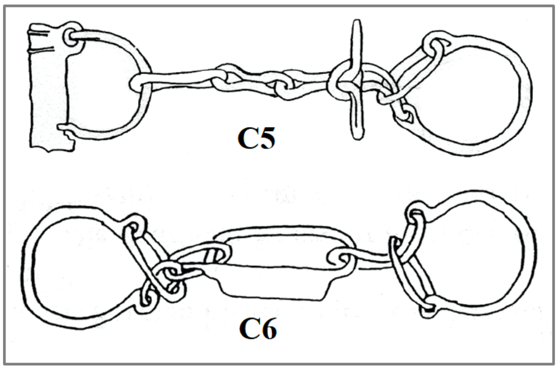


Figure 6.74. Fetters with locks of C5 and C6 types, respectively (after Gustafsson 2005, Fig 5., based on Henning 1992).

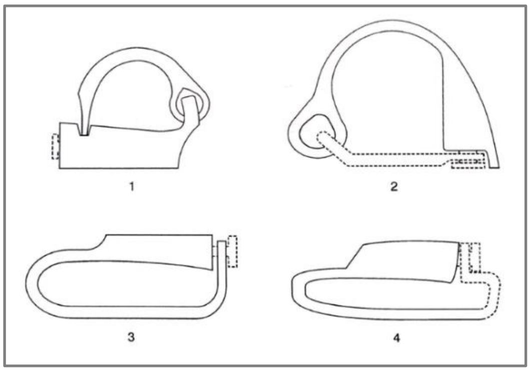


Figure 6.75. Westphalen's four types of Hedeby fetter locks (from Westphalen 2002:185, Abb. 86).

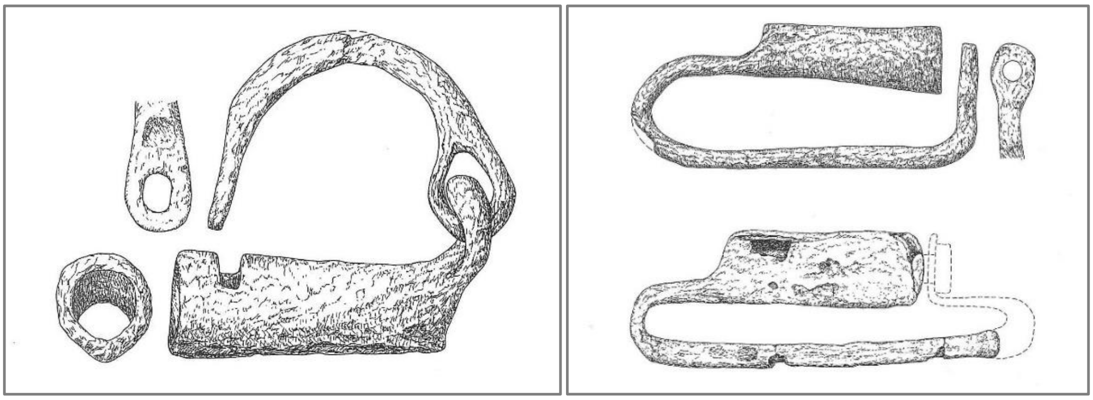


Figure 6.76. Type C5 and C6 'fesselschloss' from Hedeby (Westphalen 2002, Taf. 70, Nos. 1, 3–4).

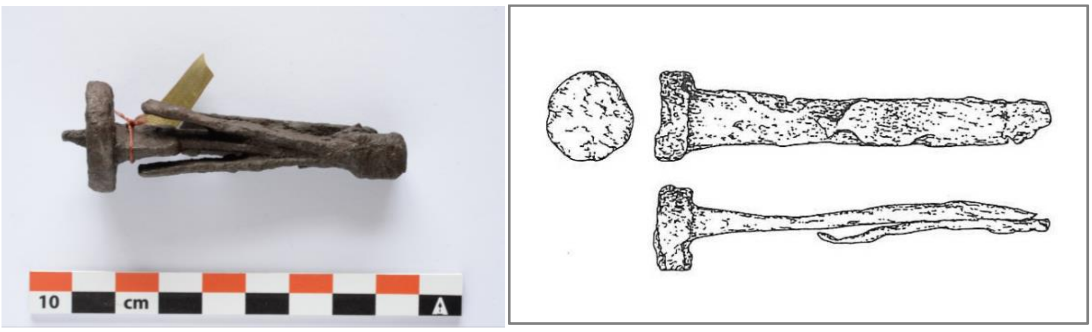


Figure 6.77. Potential lock bolts for fetter locks (B4433g; Westphalen 2002, Taf. 69, No. 13).

The C5 and C6 locks both have elongated, conical lock cases and large shackles. Their most notable characteristic is that the bolt and springs are not part of the shackle, which is the case in all other padlocks in this classification. Instead, the shackle is attached to the lock case and the bolt and spring is a separate part. In both types, the bolts were likely short with a circular end piece, and may have had spring leaves on one, two, or three sides (Figure 6.77). The shackle of sub-type C5 is wide and arched, either hinged at one side of the lock case or further out on the arch (Figure 6.75, no. 1–2 and Figure 6.76, left). The shackle end has a loop that is inserted into or over the other end of the lock case. When locked, the spring bolt protruded through the loop and into the case. In the C6 type, the shackle is a fixed part of the lock case, shaped into a long U-shaped bar. It reaches around the case and ends in an angled loop set just outside the opposite side of the case, with a small gap allowing the lock to be placed onto a fetter or chain (Figure 6.75, no. 3–4 and Figure 6.76, right). Like the C5, the spring was set through the loop and into the case when locked. In both types, the 3C key would be inserted into one end of the lock case, opposite to where the spring is inserted. As for keyholes, the examples from Hedeby have no observable keyhole aperture, but it is possible that there was some form of plate or hindrance that restricted the entrance of wrong keys or lock picks (such a plate is seen in a medieval example from Norway, C10210, see also a 11th century English find in Gustafsson 2005, Fig. 4).

The opening sequence of these locks are similar to the C3 types and requires the same type of keys, 3C. The key would be inserted into the keyhole-side of the case and pushed forwards, compressing the springs. The bolt and spring could then be removed – and the shackle opened in C5. As the shackle is fixed in C6 locks, removing the bolt would allow the lock to be separated from the fetter or chain.

As far as I know, there are no C5 or C6 locks with their respective springs intact. The ones illustrated above are considered potential candidates. Therefore, there is currently insufficient evidence to determine which key variants may have been used, and if there are grounds for further separation into variants

Sub-type CC1: Mounted push lock with flat, springed bolt

The first push-and-slide lock is CC1. It is operated by 3E keys and used for caskets and possibly chests. It is comparable in construction to the pull lock type AA1, as it has a springed bolt with a handle, but its features facilitate a pushing rather than pulling motion. One well-preserved example from Berg Vestre in Løten, Hedmark, Eastern Norway, is illustrated below (C13860, Figure 6.78). A similar parallel is from Birka grave Bj 963 (Figure 6.79). The finds indicate a relatively uniform arrangement of such locks, so there are no variants.

The CC1 lock consists of a springed bolt with a double-leaved spring, one hasp, and a front lock plate (Figure 6.78). The lock plate has a large keyhole shaped like a sideways T, an aperture for the bolt handle on one side, and one for the hasp on the other. The bolt is a long bar with a central, three-sided case that holds the lock spring. The bolt has a handle at one end, protruding through the lock plate. At the other end is the bolt arm that holds the hasp in place. An angled blocking ledge is fastened across the bolt. The bolt is attached to the lock plate by the handle and the hasp and one cramp fastening. The spring is a straight, two-leafed iron band lying parallel to the bolt, standing against the blocking ledge when the lock is closed. The bolt is visible through the keyhole, but its flat side makes sure the spring is out of sight and difficult to reach by other means than the key.

The bit of the 3E key is designed to fit around the bolt and spring. Therefore, the dimensions of the bolt and spring in relation to the key are the features that may be varied to create individuality in this lock type. Judging by known finds, their form and construction appears relatively uniform, warranting no further separation into variants.

In unlocking a CC1 lock, the key would be inserted vertically into the keyhole and pushed sideways (Figure 6.80). In this motion, the inward-facing tips of the bit would compress the spring, allowing the bolt to be slid sideways by the handle. When slid, the spring would be pulled under the blocking ledge along with the bolt, and the bolt arm would exit from the hasp. In this type, the key could be removed from the lock when open. As in most other mounted locks with secondary sliding principle, the locking process did not require use of the key, only to reinsert the hasp and slide the bolt the other way.

Figure 6.78. Push lock of CC1 type from Berg vestre, Løten in Hedmark, C13860 (left), with illustration by Almgren (1955, Fig. 137a-c, right).

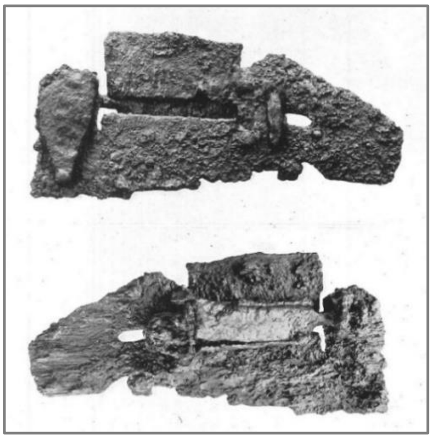


Figure 6.79. CC1-type lock from Birka, Bj 963 (Arbman 1940, Taf. 266:1).

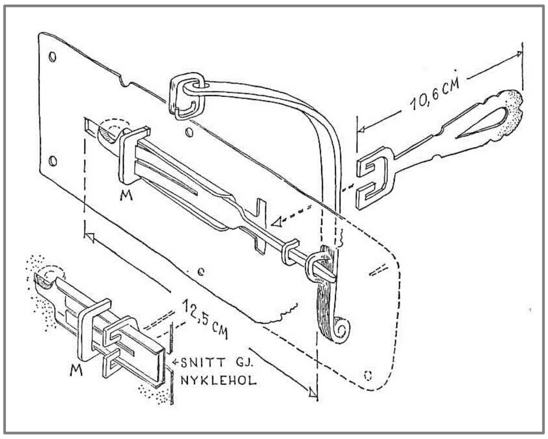


Figure 6.80. Constructional illustration of C13860 (Berg et al. 1966, Fig. 11).

Sub-type CC2: Mounted push lock with arrow-shaped, springed bolt

The other push-and-slide lock type is CC2, and it is very similar to the former in many respects. This type is not represented by locks in the Norwegian material, only by its keys, the 3F type. It use is documented by primarily Danish finds, such as from Fyrkat and Haldum, indicating that they were mounted on rectangular caskets with lifting lids and square caskets with bolted lids. The type is divided into two variants, CC2.1 and CC2.2, based on the different arrangements of the lock on these caskets.

The first variant is very similar to CC1 discussed above, and is similarly used on rectangular caskets with lids lifted on hinges. It consists of a springed bolt, a hasp, and a front lock plate (Figure 6.81). The lock plate also has a sideways T-shaped keyhole with apertures for the handle and hasp. The main difference between the two is in the bolt and the spring. The bolt has a handle at one side and a narrow bar for the hasp at the other, but instead of a central case, the bolt has a horizontal, protruding ledge along the middle. On this are attached two spring leaves, one on each side, creating an arrow-shaped spring similar to those in padlocks. The blocking ledge standing across it is a vertical plate with a T-shaped aperture for the bolt and spring. As in CC1, the flat back of the bolt blocks the keyhole from view and wards the springs from being reached.

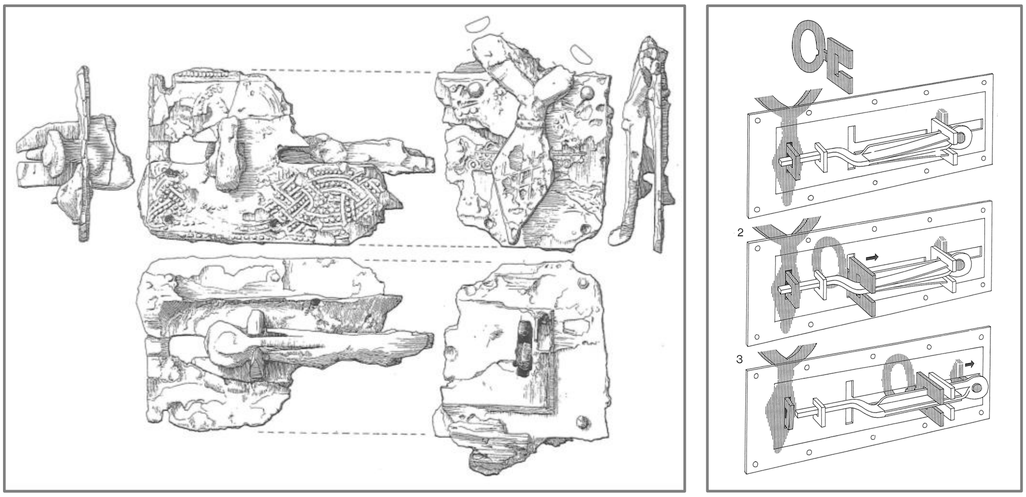


Figure 6.81. The CC2.1 lock mechanism from Grave 4 at Fyrkat with illustration of its operational sequence (Roesdahl 1977, Figs. 124 and 131).

As presented by Jeppesen and Schwartz (2007) in their study of the Haldum casket (see 5.1.3), the CC2.2 variant is used on square caskets with a bolted lids. This arrangement involves some constructional and operational differences from the first variant. One difference is that it is mounted in the lid rather than in the front, and secures the lid by bolts rather than by a hasp (Figure 6.82 and Figure 6.83). The lock is oriented vertically with the bolt arm pointed towards the front, protruding into a perforated arch fixed onto the casket case. At the other sides of the lid are three additional sliding bolts protruding into similar arches. Another difference is that the bolt seemingly lacks the flat back that would otherwise conceal the spring, indicating that it was less secure than the former. This also means that the key's aperture was rectangular rather than T-shaped, as illustrated in Figure 6.83 below.

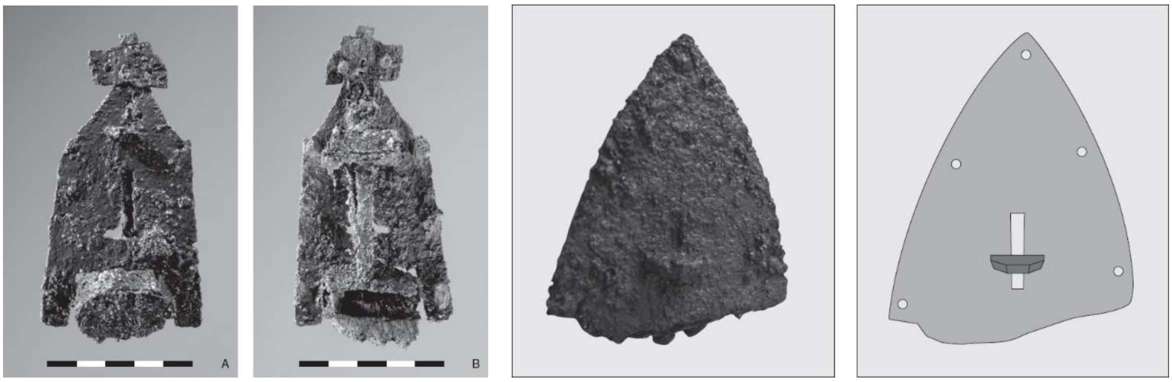


Figure 6.82. The CC2.2 type lock remains and bolts from Haldum (Jeppesen and Schwartz 2007, Figs. 4 and 7).

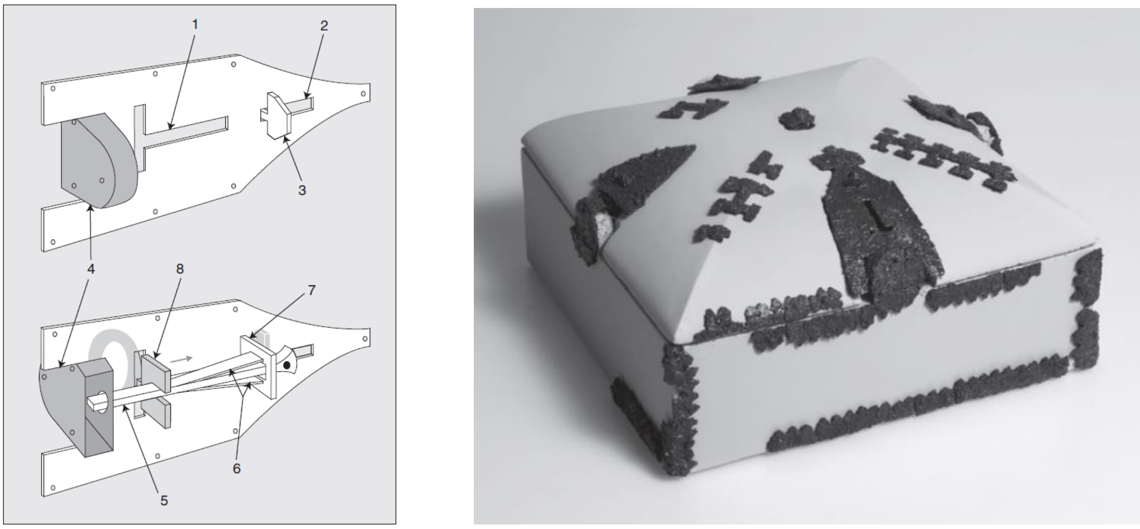


Figure 6.83. Lock construction and reconstructed mounting of CC2.2 lock from Haldum (Jeppesen and Schwartz 2007, Figs. 5 and 10).

Following the CC2 operative sequence depicted in Figure 6.81, this is basically the same as in type CC1. The pushing movement of the key would cause the sides of the key bit to compress the arrow-shaped spring leaves, allowing the bolt to be slid. In the CC2.1 variant, these movements would be conducted sideways, while the orientation of the CC2.2 variant would require a pushing and sliding movement backwards. In the first variant, removing the hasp would release the lid, and in the other, the three additional bolts would be slid out from the arches before removing the lid. Upon closing and locking, the hasp or the small bolts would be reinserted before sliding the main lock bolt into locked position.

The parameters governing the variation in this lock type are mainly the dimensions of the bolt and spring. There is little difference between the two variants in terms of security, the only point being the lack of a warding back plate on the bolt in the latter, which could make it easier to pick than the former. Otherwise, the distinction between the variants is more one concerning mounting than technical variation and uniqueness.

6.3.4 Type D: Lift locks

The last main type of locks in this classification is lift locks, or tumbler locks, as they are commonly called (6.1.1). This is a type that currently is not documented in the Norwegian material from the period in question. It is included here because it has been identified in early 11th century layers in Lund, and in medieval contexts in Norway, such as Trondheim. Here, the earliest evidence of their use is a lock bolt dated 1050–1100 AD (Cadamarteri 2011:22, Fig. 5). Although one should be cautious about making retrogressive inferences, the fact that these locks are documented just around the periodic divide I consider an indication that they could have been present in Norway earlier, most probably in the late Viking Age. Based on current evidence, these locks were exclusively made from wood and their keys were likely also wooden or made of bone or antler. Norway has few settlement sites with good preservation conditions for artefacts of organic materials and building remains, which I consider the main possible reason why they have not been documented within the Norwegian area.

Locks with lifting mechanisms make up the earliest lock type in existence, the first finds deriving from Ancient Mesopotamia (e.g. Potts 1990; Radner 2010). In Norway, they are documented from the 11th to the 14th century (Berg 1989, 1998; Cadamarteri 2011), and in Sweden until the modern day (e.g. Erixon 1946, Fig. 2). Throughout its long history, lifting locks with tumblers have exclusively been used to secure doors. To my knowledge, the principle has never been applied to chests or portable locks. Metal tumblers have been applied in such locks, but with a turning principle (see BB2 and BB3 above).

The tumbler locks are named so because the inner mechanism is based on internal pins that fall – tumble – down into respective notches in the lock bolt when closed (Pitt Rivers 1883:6). Thus, these locks do not have lock springs; they simply rely on gravitational force working on the tumblers. These hold the bolt secure and the key needs to lift the tumblers in order to free the bolt. There is only one sub-type within this main type at present, which may change in the future. This sub-type is governed by a lifting and subsequent sliding motion of the bolt, and is thus considered a lift-and-slide lock, signified by the double-lettered label DD.

Sub-type DD1: Mounted lift lock with wooden tumblers

The sub-type DD1 is based on the known wooden and bone lift keys, here classified as a 4A type key, in correlation with the construction and operation of ancient and medieval mechanisms. As presented by Berg (1989:109–110) for the medieval examples from Norway, the DD1 lock is a door lock entirely made of wood, placed on the outside of the door. Like B3, it was enclosed in a wooden case that held and concealed the mechanism. Similarly, it could not be operated from the inside.

A DD1 lock consist of a horizontal bolt, tumblers, and a rectangular wooden lock case (Figure 6.84). The case has two horizontal channels, one for the key and another below for the lock bolt, and vertical channels for the tumblers. The tumblers are narrow, rectangular pins, with a cut in one side corresponding to the dimensions of the key channel and key bit. The bolt has shallow cuts in the top, accommodating the ends of each tumbler. In locked position, the bolt would protrude through the lock case into the door post, with the tumblers resting in each cut. In this position, the cut in the tumblers allowed the key to be inserted into the channel.

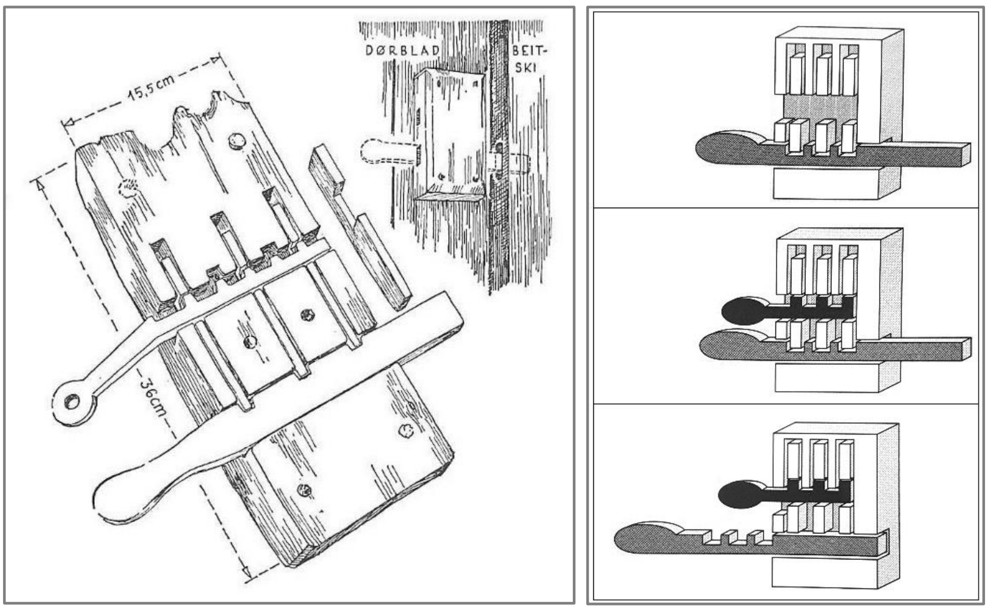


Figure 6.84. A 14th century lift lock of DD1 type from Rauland in Telemark (Berg et al. 1966, Fig. 13) and DD1 operational sequence (after A3 type in Reinsnos 2013, Fig. 3.10).

In unlocking a DD1 lock (Figure 6.84, right), the key would be inserted into the key channel so that the tips of the key aligned with the tumblers. Lifting the key upwards would cause the tumblers to move up and out from the cuts in the bolt, allowing the bolt to be removed from the case and the door to be opened. Once the bolt was withdrawn, the key could not be removed from the case. If the bolt was still inside the case, it would hold the tumblers elevated and the key could not be lowered and extracted. If the bolt was removed entirely, attempting to remove the key would cause the tumblers to catch on the tips. To lock, the bolt would be slid back into the door post and the tumblers would fall back into their respective cuts, allowing the key to be extracted. Thus, the door could not be left unlocked without also leaving the key. By very simple means, it provided efficient safeguards against unauthorised access as well as theft or loss of the key while the door was open.

There is room for variation in DD1 locks, like in many of the other lock types presented. By varying the number of tumblers, their length and width, the size of the notches and the distance between each tumbler, it was relatively easy to create a unique lock and key – and it was similarly difficult to pick (Pitt-Rivers 1883:7). The only way to open the lock (without simply breaking it) would be to gain sufficient access to the key in order to copy it. Simply put, the higher the number of tumblers and the more variation in the dimensions of the different lock parts, the more secure it was. This flexibility goes a long way to explain the long history of tumbler locks and the success of the tumbler locking principle (e.g. modern pin tumbler locks of Yale type).

6.3.5 Portable locks on containers

In addition to the lock arrangements presented here, padlocks could be used in a mounted manner on caskets and chests with hinged lids, and likely also doors. To secure a container with a padlock required that the lid was fitted with a hinged clasp, or clasp hasp, placed over a protruding loop fixed in the front. This is demonstrated by fittings found in burial Bj 639 at Birka. These were reconstructed by Holger Arbman (1943, Abb. 177) on a rectangular casket, illustrated below (Figure 6.85). The burial contained two caskets, this small one without lock or key, and a larger one with a turn lock and key (see Figure 5.17). From Arbman’s reconstruction, a padlock could be attached to the loop, securing the clasp mount and prohibiting the lid from being opened. This form of locking is not considered a type in itself, but a way of facilitating mounted use of portable locks. The lock used could involve all of the above-mentioned padlock types, except C5 and C6. In the Norwegian material, a

C1 padlock and 3A key was found with a resembling clasp hasp (C37550r, t), illustrating that these were among the mechanisms used in such a way. There is currently no evidence for the use of padlocks on doors in the Iron Age, but if they were used in such a manner, a clasp and a cramp would have been mounted respectively on the door or on the door post, as is known from modern times.

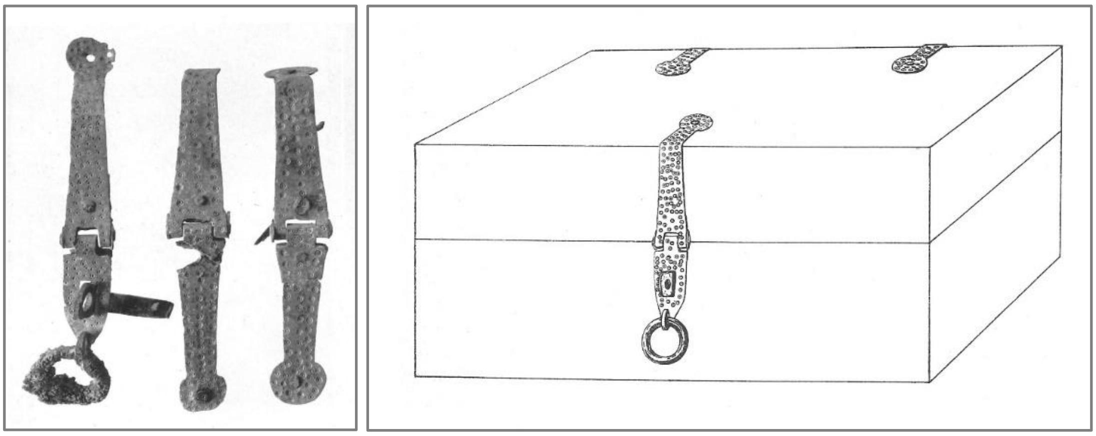


Figure 6.85. Clasp hasp and hinges from grave Bj 639 at Birka and a reconstructive drawing of how they were mounted on a casket (Arbman 1940:Taf. 261 no. 261a, Grab 639; 1943, Abb. 177).

This concludes the classification of lock and key forms present – or likely present –within Scandinavia in the Iron Age. It demonstrates a wide range in how the making of devices has been approached and executed throughout the period. The majority are metal mechanisms incorporated into or attachable to wooden or metal artefacts. The overview illustrates how they were built and operated with considerations to their materials and to what they secured. The following section will place emphasis on this latter point, connecting the lockable 'things' from Chapter 5 with the lock and key types presented above. Seeing the relationship between locking device and locked device is necessary to understand the developments analysed in the coming chapters. Locks and keys did not change in isolation, but in relation to what they locked and for what purpose. Therefore, the following makes up a basis for contextualising the analytical results to come and their interpretations.

6.4 Locked devices and locking devices

I stated in Chapter 5 that locks and keys can be seen as proxies for the 'thing' that was locked. This means that what locking devices were made to secure physically, which may be largely disintegrated or no longer visible, is observable in the mechanisms' construction. The invisible parts are, in principle, just as much under study here as the material ones. Hence, this study is actually one of lockable boxes, caskets, chests, doors, and fetters, and all other things that could be locked, how they were locked, and why.

Locked device	**Dimensions (cm) (length, width, height)**	**Lock type**	**Key type**
Rectangular boxes – sliding lids	15–22 x 6–10 x 6–10	A1, A3	1A, 1C
Rectangular caskets – sliding lids	*c.* 20–?	A2 + A5?	1A + 1D, 1E?
Bucket-shaped caskets – bolted lids	30–35 x 30–35 x 20–25	A4	1A + 1B?
Square caskets – bolted lids	*c.* 25 x *c.* 25 x 10?	CC2.2	3F
Oval caskets – lifting lids	*c.* 30–50? x 20–30?	AA2	1A, 1B
Rectangular casket – lifting lids	25–50 x 18–30 x 17+	A6, AA1, AA2, BB1, C1, CC1, CC2.1 + AA3, B1, B3, BB2, BB4?	1A, 1B, 1C, 2A, 2B, 2C, 3A, 3E, 3F
Rectangular chest, flat – lifting lids	120–140 x 65–75 x 30+	AA3, BB2	1C, 2A
Rectangular chest, legs – lifting lids	50/60–110 x 30–40? x *c.* 20	B1, BB1, BB3 + BB2?	2A, 2B
Doors – turning inwards	*c.* 70 x 50	AA4, B4, B5, DD1	1A, 1B, 1C, 2C, 2D, 4A
Fetters and chains		C5, C6 + other padlocks?	3C

Table 6.3. Overview of locked devices, their approximated measurements, and the lock and key types that secured them.

The table above presents the lock and key types in relation to the lockable devices they secured. It does not include the padlock types A7, B2, C2, C3, and C4 and their respective key types, as I have not been able to relate these to specific lockable units in the archaeological material. However, they could have been used for all containers with lifting lids in combination with clasp hasps, and for purposes that may have included securing things with chains or other forms of binding. A use on doors or gates is considered unlikely based on their small size, but is not outright rejected from lack of evidence.

6.4.1 Containers

The rectangular boxes with sliding lids were secured with A1 or A3 locks, while the caskets had locks of A2 or possibly A5 type. A1 and A3 are both small and simple in construction, suitable for light and narrow containers, while the A2 and A5 lock parts are larger and arguably make up more robust mechanisms suitable for casket-sized containers. The boxes are characterised by not having handles, while the latter may have had one handle on the lid for sliding the lid and moving the casket.

The bucket-shaped and square caskets make up a characteristic group of containers with bolted lids, operated by very different locking mechanisms, the pure pull lock A4 and the push-and-slide mechanism CC2.2, respectively. In both container forms, the lock is set into the lid, fastening it to the case. This is a feature that unites the containers with sliding and bolted lids and separates them from those with lifting lids, where the lock is situated on the case. The bucket-shaped caskets could be lifted by a ring or loop in the lid, while the Næsby casket is the only indication that this was possible for the square ones.

There is much broader variation in what types and sub-types of lock were applied to rectangular caskets with lifting lids. None of the aforementioned containers were secured by turn locks, meaning that these locks are diagnostic for containers with lids turning on hinges. Apart from the lock types that belonged to the particular containers mentioned above and the locks that operated doors and fetters (see below), all other forms of mechanisms, both mounted and portable, could have been applied. Of those confirmed is the pure-motion mechanism A6 and secondary sliding mechanisms of types AA1, AA2, BB1, and CC1 and CC2.1, as well as padlocks of C1 type combined with clasp hasps. Potential locks include B1, B3, and BB4, in addition to the padlock types mentioned above. In the sliding types, hasps secured the lid to the case. Rectangular caskets and chests have one or two hasps, while three hasps have currently only been documented in chests (i.e. containers over 50 cm in length). The dimensions of each hasp provides information regarding the shape of the lid, the likely thickness of the lid, and the distance from the lid to the placement of the lock. Thus, the hasp form gives an impression of the shape and size of the casket or chest.

Rectangular chests with lifting lids are determined to have been secured by the pure-motion lock B1, and by the secondary sliding mechanisms AA3, BB1, BB2, and BB3. Thus, turn locks are the predominant locking principle in chests, but are not diagnostic of chest-sized containers. Most of the lockable containers in this material cannot be size-determined due to lacking preservation and/or documentation. There may therefore be other lock types used on chests than what is currently documented, and the range may have been as wide as that of caskets, or close to. To identify chests based on lock remains, the number and space between hasps may offer an indication. The length of the lock plate is a more reliable parameter, plates measuring *c.* 40–50 cm representing a good indication of a chest. This means that the front of the container that the lock plate was attached to was approx. or above 50 cm long. Whether the chest was of the kind with legs or a flat base is not discernible from the lock itself. However, based on well-preserved finds, B1, BB1, and BB3 locks have hitherto only been documented on chests with legs, and AA3 and BB2 on flat-bottomed chests. Hence, there may be a connection between lock type and chest form, but the material foundation is sparse at present.

If one were to consider the level of the containers' security based on constructional features of the container and the lock combined, the containers with large lock plate, two or three hasps, and metal fittings present the most robust and 'protected' impression. If broken into, these would offer the most resistance physically. However, these are not in majority in this material, as will be demonstrated in the next chapter. Most of the container locks and padlocks presented appear relatively fragile from a constructional perspective, primarily made from thin metal plates and bars. I am not aware of any experimental tests of how much force it would take to break open various Iron Age mechanisms, but from a consideration of their different parts, it seems reasonable to estimate that one person could have managed to pull or break them apart by hand, and most definitely by using a tool for leverage.

6.4.2 Doors and fetters

The constructional 'frailty' observed in most container and padlocks is not mirrored in the locks for doors and fetters. While mainly tentative at present, the locks on doors were entirely made of wood or a combination of wood and iron: AA4, B4, B5, and DD1. These were all centred on blocking a door from being opened inwards by a sliding bolt protruding into the door post. The first three lock types were mounted on the inside of the door, securing a relatively large bolt, while the latter was situated on the outside and blocked the door by a smaller bolt. B4 and DD1 were arranged within a wooden case, while AA4 and B5 were seemingly open and visible from the inside. The variant AA4.1 and B5 seem to have been possible to open and close from the inside, while the AA4.2, AA4.3, B4 and DD1 were only operable from the outside. This means that the two former locks mainly regulated entrance from the outside, while the others prohibited movement through the door from the inside as well as the outside. As for resistance, the suggested door locks would not have been stronger than a common wooden door bolt, unlike modern-day mechanisms which make breaking in difficult. They did not enforce the door, but regulated access through it.

As for the fetter locks C5 and C6, these are of a very different construction and use than the other portable locks in the material. Generally, they appear more physically secure. They have thick shackles attached to compact and sturdy lock cases, with springs that are not possible to grip and pull by hand. In the other padlocks, pulling forcibly on the shackle could cause the internal springs to break, while this seems near impossible in these two types. Thus, their use as fetters on humans and possibly animals, as indicated by their association with neck rings and hand/foot fetters, is strengthened from a constructional point of view.

6.5 Classifications summary

This chapter has presented a framework for classifying locking mechanisms from the Iron Age and for understanding the way people locked and unlocked them in relation to what they secured. Following the conceptual outline (3.8), the basis for this ordering is one of movement and operation, facilitated and made material by the producers, i.e. locksmiths, and applied and executed by users, i.e. carriers and carriers-out of practice. It centres on Latour's (2000a) view that how locks and keys are formed and constructed affect how human agents use them and behave in relation to the mechanism and the locked thing or space. It also actualises Robb's (2015) connection between design features, social tasks, and standard setting, where particular physical properties relate to particular uses and 'ways of doing'.

The presentation of how each lock type was constructed and arranged on containers, doors, and fetters illustrate which behaviours or gestures were necessary and in what order, and which were not possible or prohibited by the mechanism and the thing it secured. The relative fragility in lock and key construction show to which degree their operation required a certain level of care and control of pressure and movement. The keys and lock parts could be damaged and broken if misused. These aspects demonstrate one way that locking is centred on discipline, here in how the locking is performed rather than how the lock is to be respected. It also illustrates the knowledge and know-how required to lock and unlock, to manipulate the internal and hidden device through feeling, hearing, and embodied experience. Observed levels of complexity and variation between and within the various types demonstrate that they were consciously made different and individual, also making the intention, agency, knowledge, and know-how of locksmiths visible and tangible.

In studying and ordering locks and keys from a perspective of security and practical application, it is shown that locking devices are inseparable from what they locked as well as separate entities in their own right. They can be added to and removed from things, thus changing the nature of the thing and what it does. It is also by being added to and removed from things that locks and keys can do what they do, making and unmaking boundaries. The types of locks and types of things show that these boundaries took different forms, indicating that the boundaries that locking made and managed in the Iron Age were different physically and likely also socially. When and where these differences took place and how they changed is the topic of the next chapter, which is an analysis of how locks and keys were introduced to the Norwegian area and how they were distributed and transformed in the ensuing thousand years.

7. Technical function and technological development: types in time and space

In this chapter, I investigate how locks and keys developed functionally over time and space, and how these developments related to the introduction and transformation of locking practices through the first millennium AD. The first set of analyses (7.1) investigates the temporal, quantitative, and geographical aspects of locking without considerations of types, broadly outlining the scale of introduction and distribution in the period. The types are investigated in the second part (7.2). Here, I first study the quantity and particular durations of the types and establish a functionally based typology from the produced patterns. Subsequently, the types are investigated geographically to address how particular types appeared, stayed, and moved across the Norwegian area. The resulting patterns provide an impression of how locking became a socially embedded practice; to what degree people practiced locking and what lockable things and mechanisms were available to them at different times and places.

From these results, I go into a comparative discussion in the third part of the chapter (7.3). I consider similarities and differences with known locking materials outside Norway and consider the potential connections between them. Certain elements in the technology that may inform about the wider social context of locking development are highlighted, opening for factors such as craft innovation, production, and knowledge exchange as well as human and material mobility.

7.1 Temporal distribution of locks and keys

This first set of analyses involve investigating the number of locks and keys in the Iron Age with sufficient chronological nuance to provide insight into the introduction and spread of locking practices. This requires studying the finds by periods, sub-periods, and phases. Determining at which scale locking occurred is an important basis for understanding its social preconditions, significances, and effects on Iron Age life and society. The inherent presumption of this approach is that the observable ‘tempo’ of occurrences in archaeological contexts can provide an estimate for its general presence and impact, and for how familiar people of the Iron Age were with the technology. This latter point will also be investigated further in the contextual analyses in Chapter 8.

These initial analyses include the all of the 832 lock and key finds in the material, both those of definite and indefinite artefact determination. The objective is to present the fullest potential view of when and where locking devices were present in Norway. Only the definite finds are included in the typological analyses in 7.2, the objective of which is to determine the temporal and spatial placement of types as securely as possible. In both analytical stages, most emphasis will be placed on finds with dates that enable them to be designated to sub-periods and phases. Those with wider dates are considered and used as a comparative backdrop for the tendencies outlined by the more precisely dated finds.

7.1.1 Quantitative analysis

In the following and the subsequent analyses, the material is always considered and illustrated in chronological order. When numbers of finds are listed, the additional indefinite finds are generally presented in parentheses unless specified otherwise.

Early Iron Age

There are 109 keys and 29 locks dated to the Early Iron Age, as presented earlier in Table 4.2. Of these, 17 (4) keys and 16 (1) locks are from the Roman Period (Table 7.1), and 74 (5) keys and 6 (2) locks are from the Migration Period. The remaining 8 (1) keys and 4 locks are generally dated to the period (Table 7.2).

RP	B1/B2	B2	C1a	C1b	C2	C3	C1-C3	B1-C3	*Total*
Keys	1	2	2		1	5	5	1	*17*
Keys?						2	2		*4*
Locks	2	2	3		1	3	1	4	*16*
Locks?						1			*1*
Total	*3*	*4*	*5*	*0*	*2*	*11*	*8*	*5*	38

Table 7.1. Chronological distribution of locks and keys in the Roman Period.

The first finds occur in the Early Roman Period (B1-B2). These are few in number, counting three keys and four locks. Exactly when the first mechanisms are in place cannot be determined precisely, but they seem to be present around the end of the 1st or early 2nd century AD. There is a small increase in the Late Roman Period (C1-C3), numbering 13 (4) keys and 8 (1) locks. One key and four locks are generally dated to the period. The indications are of a slow introduction of mechanisms from the 1st to the 4th century, with a nearly even occurrence of keys and locks. The number of locks are relatively steady, with a small dip in C1b–C2 and a slight rise in keys towards C3. The low differentiation between the number of keys and locks is noteworthy, as will be evident from the later periods.

The general impression is that locking devices were a rarity at this early stage, which covers *c.* 350 years. How many there were in circulation during the period is uncertain, but judging from their low deposition rate they seem to have been few and far between. How far between they were geographically will be addressed in 7.1.2.

MP	D1	D2a	D1-D2a	D2b	D2	D1-D2	*Total*	EIA
Keys	7	12	3	35	4	13	*74*	8
Keys?	1	3		1			*5*	1
Locks		3		3			*6*	4
Locks?			1	1			*2*	
Total	8	18	4	40	4	13	*87*	13

Table 7.2. Chronological distribution of locks and keys in the Migration Period, with finds generally dated to the EIA on the right.

Moving on to the Migration Period, there are gradual signs of change in the 5th century. One of the main points is the increased difference between the occurrences of keys compared to locks, a tendency that grows throughout the period. In D1, there are 7 (1) keys and no locks; in D2a, there are 12 (3) keys and 3 locks. Towards the end of the period, in D2b, there are 35 (1) keys and 3 (1) locks. The ratio between keys and locks are reflected in the finds more widely dated within the period. The indications are that the number of keys stay on the same level in the Early Migration Period (D1) as in the Roman Period, later to increase significantly in numbers from the late 5th to the mid-6th century (D2). Still, the locks do not show the same increase. They are seemingly absent in D1, and when they reappear in D2 they are fewer in numbers than in the Roman Period.

In general, it seems that keys to a larger degree are deposited without locks in the Migration Period compared to the previous period. Whether the discrepancy between keys and locks reflects the ratio of those that circulated in society is uncertain, however, and likely doubtful. As will be discussed in the contextual analysis, these finds mainly come from burials and considerations of funerary rituals as well as social customs come into play. In terms of quantity, the main impression is that keys and locks were becoming gradually more common in the Early Iron Age, but had yet to become widespread at the end of the Migration Period. For the *c.* 500 years following their first appearances, there are only 99 certain keys and 26 certain locks registered. Even if the archaeological record holds only a part of those in circulation, it seems safe to say that having a lock and key was not commonplace. This point will be further addressed in later discussions of what purposes and effects locking had in this period.

Late Iron Age

There are 472 keys and 201 locks from the Late Iron Age, which already demonstrates a marked shift from the Early Iron Age. Of these, there are 50 (1) keys and 12 (3) locks dated securely to the Merovingian Period. Additionally, there are so-called transitional finds, 7 (1) keys and 4 (2) locks dated from the 8th to the 9th century (Table 7.3).[2] Dated to the Viking Age are 337 (26) keys and 154 (9) locks. In addition to these are 37 (6) keys and 11 (1) locks dated within the Late Iron Age, 5 keys and 2 locks dated to the transition between the Late Viking Age and the medieval period, and 1 (1) key and 3 locks dated from the Late Iron Age to the medieval period (Table 7.4). Lastly, there are 15 keys and 3 (1) locks that have a general date to the Iron Age, and 2 keys that may reach into the medieval period (Table 7.5).

MVP	Ph. 1	Ph. 2	Ph. 2-3	Ph. 3	Ph. 1-3	Total	8th-9th
Keys	8	4	15	17	6	*50*	7
Keys?			1			*1*	1
Locks		1	4	5	2	*12*	4
Locks?	2			1		*3*	2
Total	10	5	20	23	8	*66*	14

Table 7.3. Chronological distribution of locks and keys in the Merovingian Period, with transitional finds on the right.

Notably, the number of keys from the Merovingian Period is lower than in the Migration Period, but the number of locks is somewhat higher. Still, the difference in occurrence between the two objects continues. As in D1, there are no definite locks securely dated to Phase 1, only two potential ones. There are only eight keys, a marked drop from D2b. In Phase 2, there are also very few finds, four keys and one lock, although some of the finds dated to Phase 2-3 may belong here. These include 15 (1) keys and 4 locks, with 17 keys and 5 (1) locks dated to Phase 3. Similar to the patterns from the Early Iron Age, the rise in keys appears towards the end of the period. The locks are seemingly not present until 650 AD, when they return and increase slightly in numbers from *c.* 700 AD and onwards. In general, the increase in both keys and locks seems to happen particularly in the 8th century. This is also reflected in the transitional finds, numbering 7 (1) keys and 4 (2) locks.

[2] The transitional finds constitute the following contexts: C21531k; B5150k, n; B7833t; B9203k, S844; T1975; T7721; T18817v, æ; Ts6663a.

The developments in the Merovingian Period are comparable to those of the Migration Period, but the difference between occurrences of locks versus keys is not as marked as before. Whether this is related to keys and locks being deposited together more often will be investigated in 8.1.3. Altogether, the number of finds from the Merovingian Period does not give an impression of widespread locking activity, with only 83 finds spanning *c.* 225–250 years. Again, it is not straight-forward to regard the fluctuations in occurrences as mirroring fluctuations of locking in society. Explanations for the fluctuations, such as the drop in Phase 1 and the rise towards 800 AD will be discussed with regard to technological development (7.3) and contextual considerations such as burial practice (8.1).

VA	9th	9-10th	10th	10-11th	11th	9-11th	Total	LIA	VA-MA	LIA-MA
Keys	124	25	68	3	3	114	*337*	37	5	1
Keys?	10	5	5	1		5	*26*	6		1
Locks	53	22	49	4	3	23	*154*	11	2	3
Locks?	4	1	3			1	*9*	1		
Total	191	53	125	8	6	143	*526*	55	7	5

Table 7.4. Chronological distribution of locks and keys in the Viking Age, with finds for the LIA, VA-MA and LIA-MA on the right.

Entering into the Viking Age, the patterns that appear diverge from the former periods. Where each former period began with a low number of occurrences followed by an increase, the curve is reversed here. The slight increase visible in the 8th century grows abruptly in the 9th century, later to fall towards the end of the first millennium (Table 7.4). With a total of 124 (10) keys and 53 (4) locks, the 9th century has the highest level of finds for the entire Iron Age. Of these, 53 keys and 26 locks are dated to 800–850 AD, which illustrates the rate and scale of the developments happening from the very start of the period. Adding the finds dated to 900–950 AD to those from the 9th century, thus covering the Early Viking Age, these 150 years have 160 (16) keys and 87 (8) locks (see Table 7.6). Comparatively, the Late Viking Age has 55 (4) keys and 42 (1) locks, of which only 3 keys and 2 locks are dated to the early 11th century. Additionally, 114 (5) keys and 23 (1) locks are generally dated to the period (Table 7.4). Judging from the established find distribution between the two sub-periods, the majority of these may likely also belong to the Early Viking Age, emphasising the already significant increase in finds.

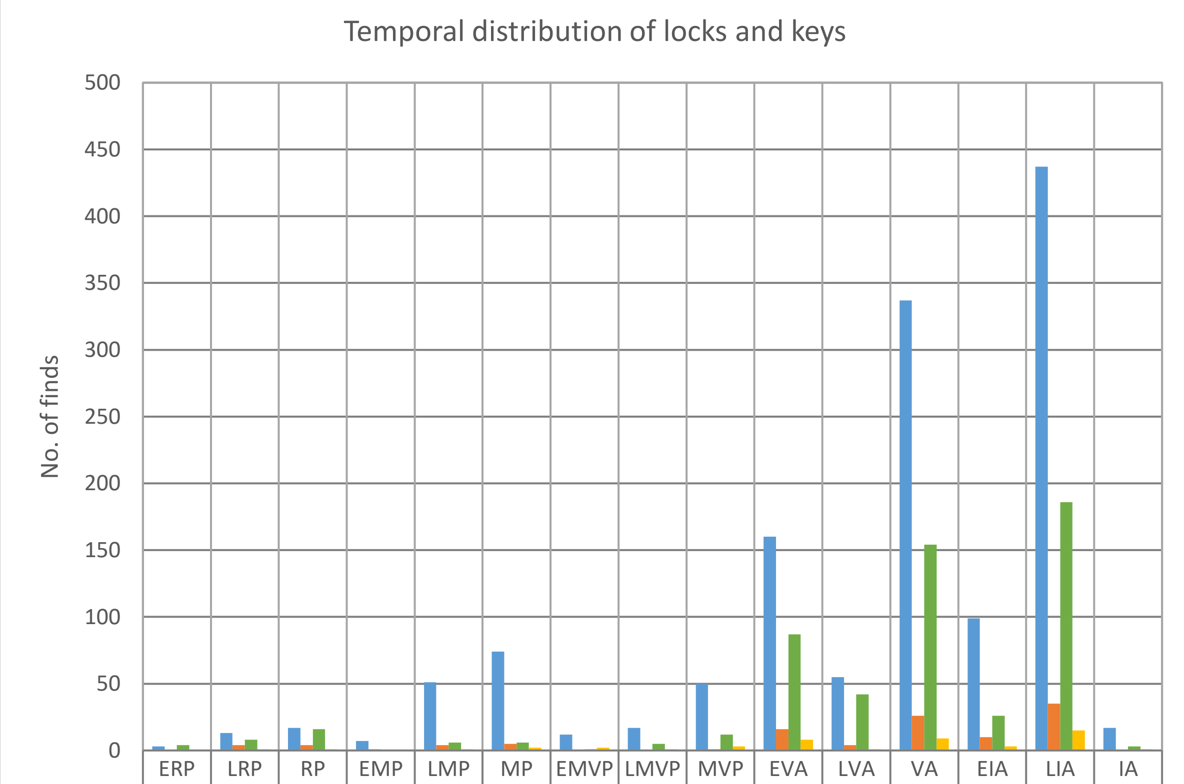
The occurrences of locks and keys indicate that locking was beginning to spread more widely in society in the Viking Age. They seem to be becoming more commonplace, if not yet something every person had. This will be more elaborated upon in later discussions concerning context and social differentiation. Another marked development is that there is almost half as many locks as keys. The keys are still in majority, but the difference was significantly larger in the Migration and Merovingian periods. In principle, there is a lock for every second key. Whether the significant growth in mechanisms in the 9th century reflects a similar increase in society is worth questioning, as it may well be strongly influenced by depositional practices, burial rituals in particular. As such, the transition from the Merovingian Period to the Early Viking Age may not have been as marked as the empirical material suggests. This is indicated by the finds generally dated to the Late Iron Age (see Table 7.4). Furthermore, the indication that locks and keys fall in numbers towards the 11th century is also likely dependent on burial customs, as finds from the Middle Ages show few signs that locks and keys declined significantly (e.g. Cadamarteri 2011; Reinsnos 2006, 2013). As presented in 4.3, the majority of finds from the Viking Age and the previous periods are predominantly burial finds. Thus, rather than a break in technology and locking practices, changes in socio-religious structures may well be the most significant factor behind the lower numbers of registered finds.

	IA	IA-MA	Total
Keys	15	2	*17*
Keys?			
Locks	3		*3*
Locks?	1		*1*
Total	*19*	*2*	*21*

Table 7.5. Chronological distribution of locks and keys generally dated to the Iron Age or from the Iron Age into the medieval period.

The finds more generally dated to the Iron Age are few in number (Table 7.5). This means that there is not a large group of finds that may impinge on the tendencies established by the more precisely dated finds. While some of these may belong in the Early Iron Age, it is still clear that the distribution of locks and keys in that period was limited. In most respects, the Viking Age and possibly the latest phase of the Merovingian Period represents the time when locking became widespread in the Iron Age, both in archaeological contexts and in the societies in question.

The results of the temporal analysis are summarised in Table 7.6, which shows the numbers accumulated by period and within the Early and Late Iron Age. It gives an indication of the scale locking may have taken from its believed introduction in the 1st century to the middle of the 11th century. The fluctuations in occurrences show that the development of locking mechanisms and their use may not have been a linear and evolutionary transformation, but highly dependent and intertwined with the social conditions and developments of the Iron Age, depositional practices in particular. The lower occurrences of locks over keys may be partly due to lower preservation and identification of lock parts (4.1), but is likely also a result of deposition, primarily in burial rituals. Understanding the fluctuations in distribution over time as well as the relationship between keys and the locks they operated will be brought into later discussions of technological development, locking practices, and social conditions and transformations. Of particular interest is to gain insight into the seemingly slow process of distribution during the Early Iron Age and the contrastingly rapid distribution around 800 AD, and whether these correspond to similarly slow and rapid processes in technological development and social organisation.



	ERP	LRP	RP	EMP	LMP	MP	EMVP	LMVP	MVP	EVA	LVA	VA	EIA	LIA	IA
Keys	3	13	17	7	51	74	12	17	50	160	55	337	99	437	17
Keys?		4	4	1	4	5			1	16	4	26	10	35	
Locks	4	8	16		6	6	1	5	12	87	42	154	26	186	3
Locks?		1	1		1	2	2	1	3	8	1	9	3	15	1

Table 7.6. Temporal distribution of locks and keys in the Iron Age. The number of finds within the early and late phases are added together in the respective periods (e.g. RP), which include the generally dated finds. Correspondingly, the number of finds per period are added to the EIA and the LIA, respectively, which also include generally dated finds. The IA numbers also include finds with dates reaching into the MA.

7.1.2 Geographical, spatial analysis

The number of locks and keys in Norway indicate that their introduction and use was small-scale from the Roman Period to the mid-Merovingian Period, followed by a seemingly rapid and large-scale development in the Early Viking Age. The impression is that the technology and, thus, the practice of locking was not commonplace but rather performed by the few for about 600–700 years. It is now necessary to consider these assumptions against the spatial distribution, and whether it provides insight into the presumed rarity and limited use of locking devices until *c.* 800 AD and the increase that may have taken place at this time. The map in Figure 7.1 below offers a backdrop for the geographical analyses here and in 7.2, illustrating the topographical preconditions in Norway for agricultural settlements and, hence, the rough parameters for where locks and keys may be expected to occur as parts of burials, settlements, depositions, and single finds.

The quantitative analysis presented 549 (46) keys and 215 (19) locks. The emphasis in the following will be placed on 740 of the 764 definite finds, numbering 531 keys and 209 locks. The VA-MA finds are included (5 keys and 2 locks), while the finds dated broadly to the IA/IA-MA/LIA-MA (18 keys, 6 locks) provide little new insight into the particular developments over time and space, and are therefore not presented geographically here. Notably, the LIA-MA finds (1 keys and 3 locks) are included in the typological analyses (7.2). The 68 indefinite finds are relevant in broadening the area of where locking may have spread, but they are not considered reliable indicators.

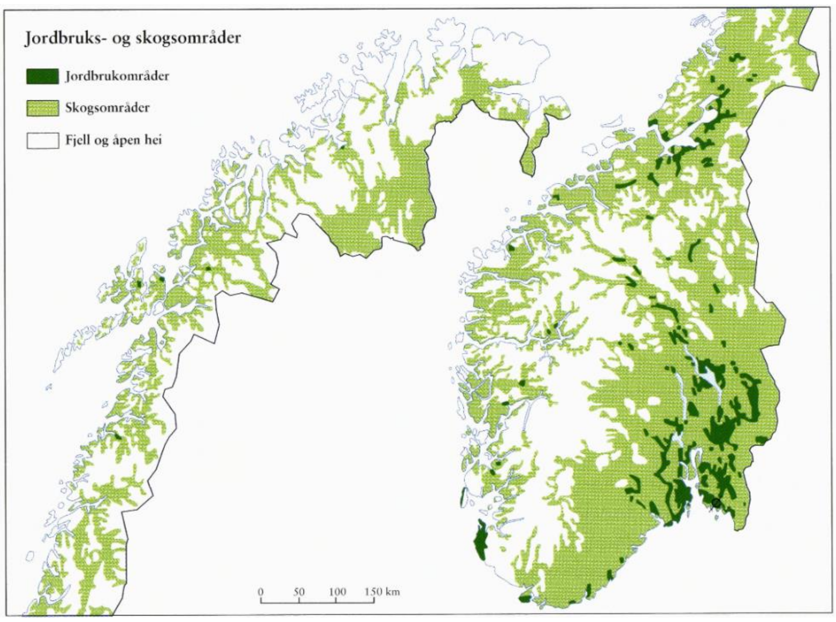


Figure 7.1. Map of agricultural (dark green) and forested areas (light green) versus mountains and moor land (white) in present-day Norway (from Øye 2002, Fig. 2).

Early Iron Age

Beginning with the Roman Period, the geography of these finds is illustrated in Figure 7.2. The Early Roman Period finds show that locks and keys first appear in Eastern Norway, in two main areas. Five of the seven finds are found by Lake Mjøsa in Hedmark, located on the Nes peninsula to the north and at Lena in Østre Toten to the west. The other two are from the southern coast of Østfold, at Sarpsborg by the estuary of the Glomma River. What seems to be the first locking mechanisms were used here between *c.* 0–150/160 AD, and the two areas are topographically connected. Glomma is joined with Mjøsa through the river Vorma further north. The find places indicate that the initial introduction of locking mechanisms occurred among people settled along the Mjøsa/Glomma water system, and may also illustrate the route these artefacts first took when introduced (7.3.1).

The locks and keys are much more broadly distributed in the Late Roman Period, spatially as well as quantitatively, although their numbers remain relatively low (26 in total). There are more finds in Eastern Norway, around Mjøsa as well as Gran by Lake Randsfjorden in Oppland, while no more finds occur in Østfold. In other regions of the country they occur along the outer coasts as well as the inner fjords: in Western Norway at Nærbø, Jæren in Rogaland, on Osterøy Island in Hordaland, at Luster in the innermost part of the Sognefjord, and on the island of Vigra in Sunnmøre; in Central Norway at Ørland and Levanger by the Trondheimsfjord in Trøndelag; as well as on Hinnøya by Harstad in Troms, Northern Norway. When considering the detailed chronology, the distribution is shown to be more gradual. The finds dated to C1a occur in Gran and Levanger, and finds from Gran are also dated to C2 and more broadly to the Late Roman Period. The remaining appear in the late 3rd to 4th centuries, indicating that the broadest distribution westwards and northwards happened towards the end of the period. The continuity and concentration in the inner parts of Eastern Norway indicate that locking devices were somewhat more widespread in that area after being introduced.

Looking at the five finds more broadly dated to the Roman Period, these seem to confirm the concentration in the eastern inland areas. They are close to the other known find places at Gran and north of Mjøsa, as well as the lake's eastern side, near Hamar and Løten. Another addition are finds southwest of Gran, close to Hønefoss by Tyrifjorden.

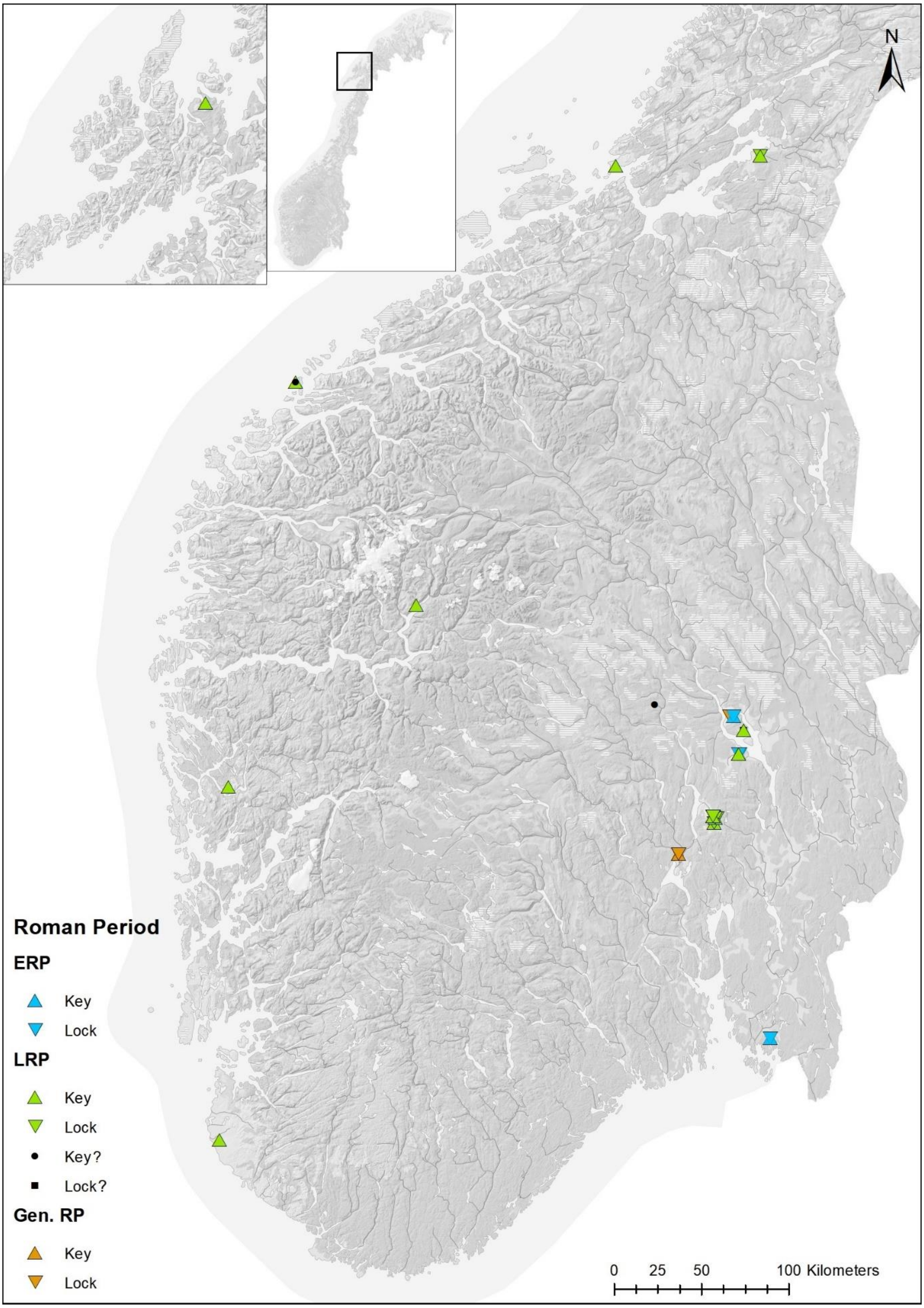


Figure 7.2. Geographical distribution of locks and keys in the Roman Period (Map: H. L. Berg).

Considering the Roman Period distribution gathered, there is one interesting pattern that presents itself. The sites where locks are found alone or alongside keys are predominantly in Eastern Norway, as well as one case in Levanger. Elsewhere, there are only keys. This raises the question whether locking was spread to these areas. There may be differences in depositional practices where locks are not included, or the keys may also have been brought there due to other forms of activities.

The emergence and concentration of Roman Period locks and keys in Eastern Norway is also a starting point for understanding not only how the early technology spread within Norway, but also where these locks and keys may have derived or been inspired from. This latter point will be discussed further in 7.3, where I compare the Norwegian types to mechanisms found elsewhere in Scandinavia and beyond.

At the beginning of the Migration Period locks and keys have been present for between 300–400 years, slowly spreading from Eastern Norway to the north and west. In the 5th and 6th centuries they continue to reach new areas, as illustrated in Figure 7.3. Following the quantitative conditions, the earliest phase is characterised by locks seemingly disappearing while the keys stay at approximately the same level as in the previous period. Geographically, the D1 finds do not follow the same eastern concentration as displayed in the Roman Period. Rather, the weight of finds lie in Western Norway, in much the same areas as in the Late Roman Period and without any one area of concentration. There are two finds in Rogaland, at Klepp by the coast and at Hjelmeland further in the Boknafjord; two finds at Hafslo in Sogn, and one in Norddal further into the Sulefjord and Storfjord systems from Vigra. In Eastern Norway, there is only one find dated this early, from Gausdal further up the Gudbrandsdal valley from Mjøsa.

Moving into D2a, some areas with Late Roman Period finds are again being represented and new areas without previous finds appear. In Southern Norway the first finds appear, all in Vest-Agder, by the coast at Farsund and at Stoveland up the Mandal valley. In Eastern Norway, a find from Grenland in Skien, lower Telemark, is of D2a date, while finds from Gran and at Frogn west of the Oslo Fjord are dated to D2. The concentration increases in Western Norway, particularly in inner Rogaland and southern Hordaland, in Dirdal, Suldal, Vindafjord, as well as the island of Stord in the outer Hardangerfjord. Here, other D2 finds from Hjelmeland and Borgundøy Island add to the picture, although they may be later. There are also a couple more finds in inner Sogn, now in Sogndal. Further north, there is one find from Inderøy, Trøndelag, and one from the island Vega in Nordland.

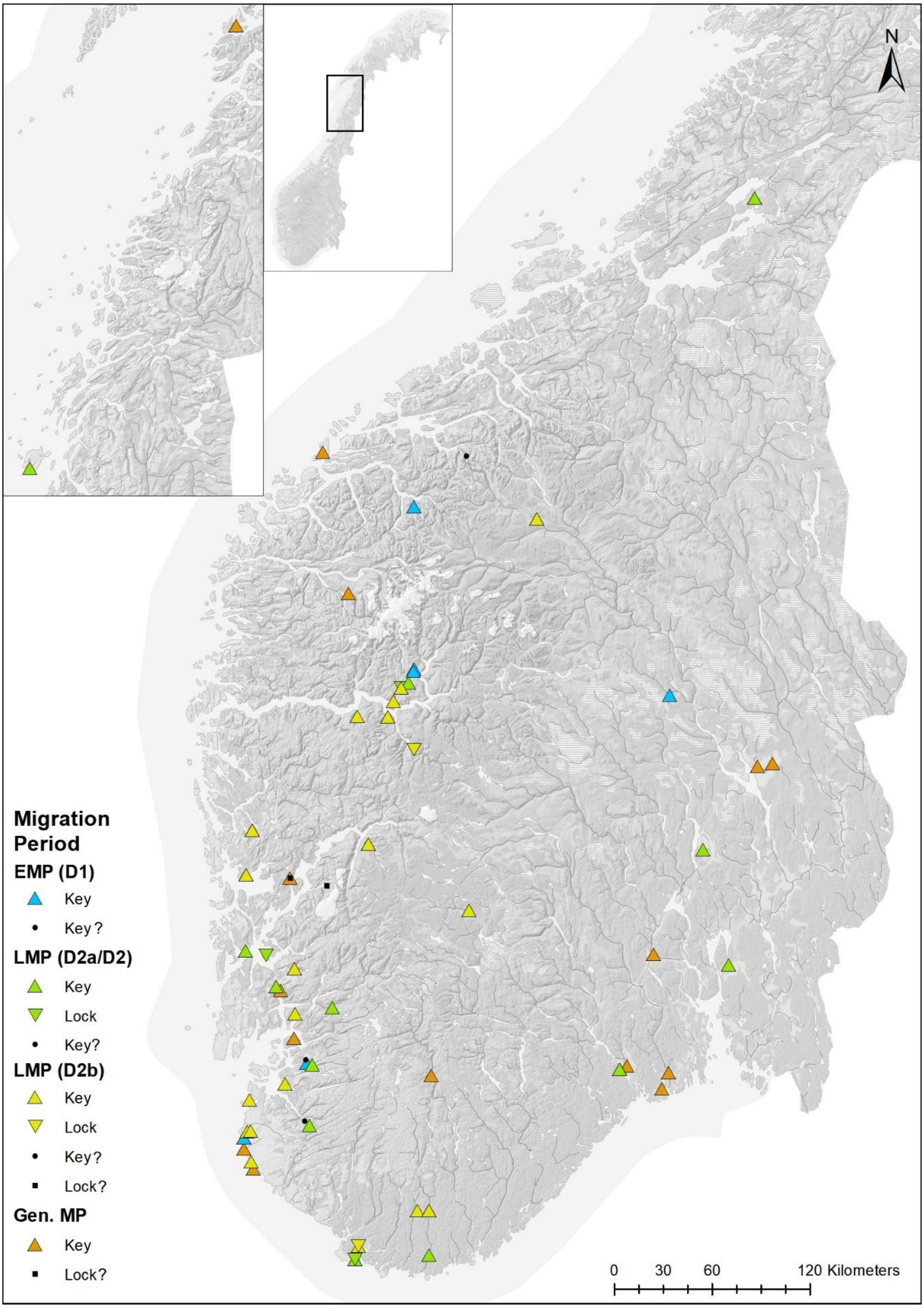


Figure 7.3. Geographical distribution of locks and keys in the Migration Period (Map: H. L. Berg).

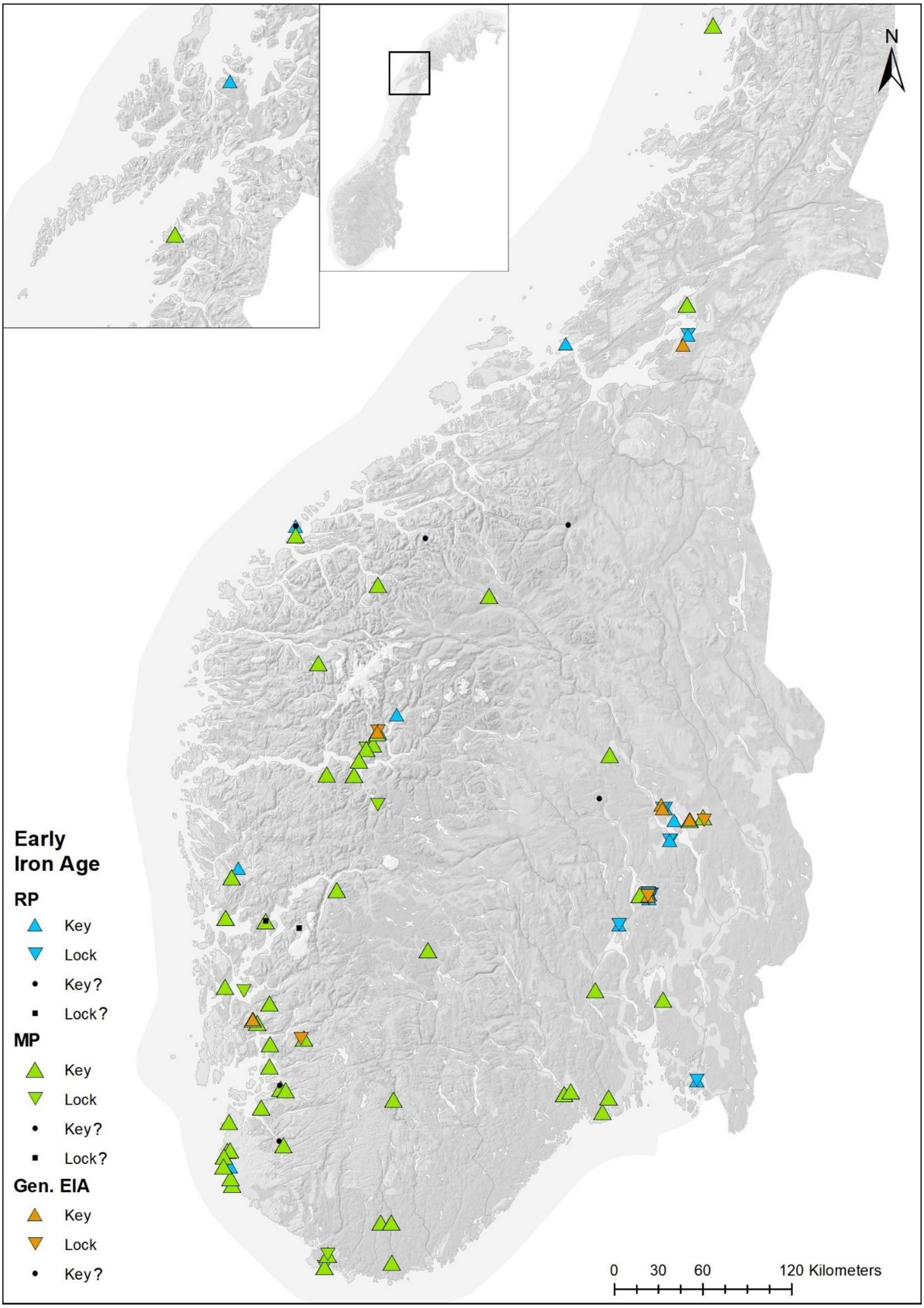


Figure 7.4. Geographical distribution of locks and keys in the Early Iron Age (Map: H. L. Berg).

The Western dominance is even more apparent in D2b. There are only two finds from Eastern Norway, both in the mountainous areas bordering the east and west: one at Lesja, an inland valley in Oppland that reaches from Gudbrandsdalen towards Romsdal along Rauma River; and one at Lake Møsvatn in Telemark, by the Hardangervidda plateau. In Southern Norway, there are finds in Vest-Agder, at Farsund as well as further inland at Marnardal and Audnedal. Other than these, the rest are from Rogaland, Hordaland, and Sogn og Fjordane, with a predominance in the latter two counties. In Rogaland, most finds are along the outer coast of Jæren, with two further in the Boknafjord. The finds from Hordaland are at Etne in the south, at Os and Arna in the outer fjords, and at Ullensvang in the inner Hardangerfjord, close to the mountain plateau. In Sogn, like before, the concentration is in the inner areas: at Sogndal on the north side, and at Vik, Fresvik, and up the Aurland Valley on the south side.

The finds more generally dated to the Migration Period do add to the picture somewhat. For Eastern Norway, the sparse finds in this region are added to by inland finds at Hamar and by Hokksund in Øvre Eiker, and in coastal places at Grenland in Telemark and Larvik in Vestfold. In Southern Norway, there is one inland find at Valle in the Setesdal Valley, which includes Aust-Agder in the distribution. As for Western Norway, the additional finds in Rogaland fall in line with the others, while new places are represented by finds in Kvam in Kvinnherad, Gloppen in Nordfjord, and at Giske Island close to Vigra in Sunnmøre. Furthermore, Northern Norway is represented by one find, from the island Engeløya in Steigen, Nordland.

Lastly, there is a small group of finds without closer dates than the Early Iron Age (Figure 7.4). Compared to the finds from the Roman Period and the Migration Period, these follow the main pattern, placing themselves around the respective clusters around the Trondheimsfjord, central Eastern Norway, inner Sogn, and northern Rogaland.

Summing up the Migration Period, three main observations can be made from the picture that emerges. The first is that locks and keys were likely becoming more commonly known compared to the Roman Period, at least in the areas with high find density and continuity. The keys are more widely distributed than locks, but so far there is no reason for believing that these were not used in locking activity. This is tied to the second observation that the few locks (six certain ones) only occur in D2 and in three areas: the inner Sognefjord at Sogndal and Aurland, the outer Hardangerfjord at Borgundøy, and at the southern coast at Lista. These two may be related to the third observation, which is that the fluctuations in numbers through the period manifests itself in somewhat more dynamic variations geographically. The gradual increase in finds presented in Table 7.2 is not mirrored in a gradual spatial increase. Rather, it demonstrates a widening and a subsequent narrowing of the geographical distribution. In D1, the finds are few and occur generally in the same areas as in the Late Roman Period. Then, the distribution increases to its widest span in D2a, before becoming more tightly centred in the West, from the Sognefjord to Jæren, Lista, and Mandal in D2b. The generally dated finds are more spread out, and there may be late finds among them that soften the impression. Still, most of the finds in the East, North-West, and North Norway are in line with patterns from the Late Roman Period, D1, and D2a. Thus, it may be that locking largely disappeared from these areas around 500–550 AD, or that their depositional practices changed. In light of these indications, the patterns in the Merovingian Period are all the more interesting.

Late Iron Age

In the first phase of the Merovingian Period, the drop in numbers presented earlier (Table 7.3) is accompanied by a near complete reversal of the distribution patterns from the Late Migration Period (Figure 7.5). The western domination is not only lessened, but appears completely disappeared. The same is true for Southern Norway and the Oslofjord area, as well as inner Telemark and Buskerud. There are no finds from Romsdal all the way around to Østfold, in outer as well as inner areas. The presence around the Trondheimsfjord and along the coast in Nordland is also gone. The few finds registered occur in Eastern Norway, at Hamar and Løten in Hedmark (though the Løten find may be later, see 7.2.1), near Jessheim in Ullensaker, Akershus, and Vang in the district of Valdres, Oppland; in North-Western and South-Central Norway, at Sunndalsøra in Møre og Romsdal, and Snillfjord in Trøndelag; and far north on Hinnøya near Harstad in Troms.

The finds dated to Phase 2 derive from two contexts: one at Skjolden in Luster, Sogn og Fjordane, and one at Nordfjordeid, in Sunnmøre, Møre og Romsdal. While the finds from Luster are close to the old concentration area from D2b, these are outside the perimeter for where locks and keys occurred the most densely a century earlier. Thus, from 550 to *c.* 700 AD, locking mechanisms only occur in a diagonal line from lower Eastern Norway across the mountain region Jotunheimen to inner Sogn and Sunnmøre, and in the inner northwestern coast in Nordmøre and southern Trøndelag.

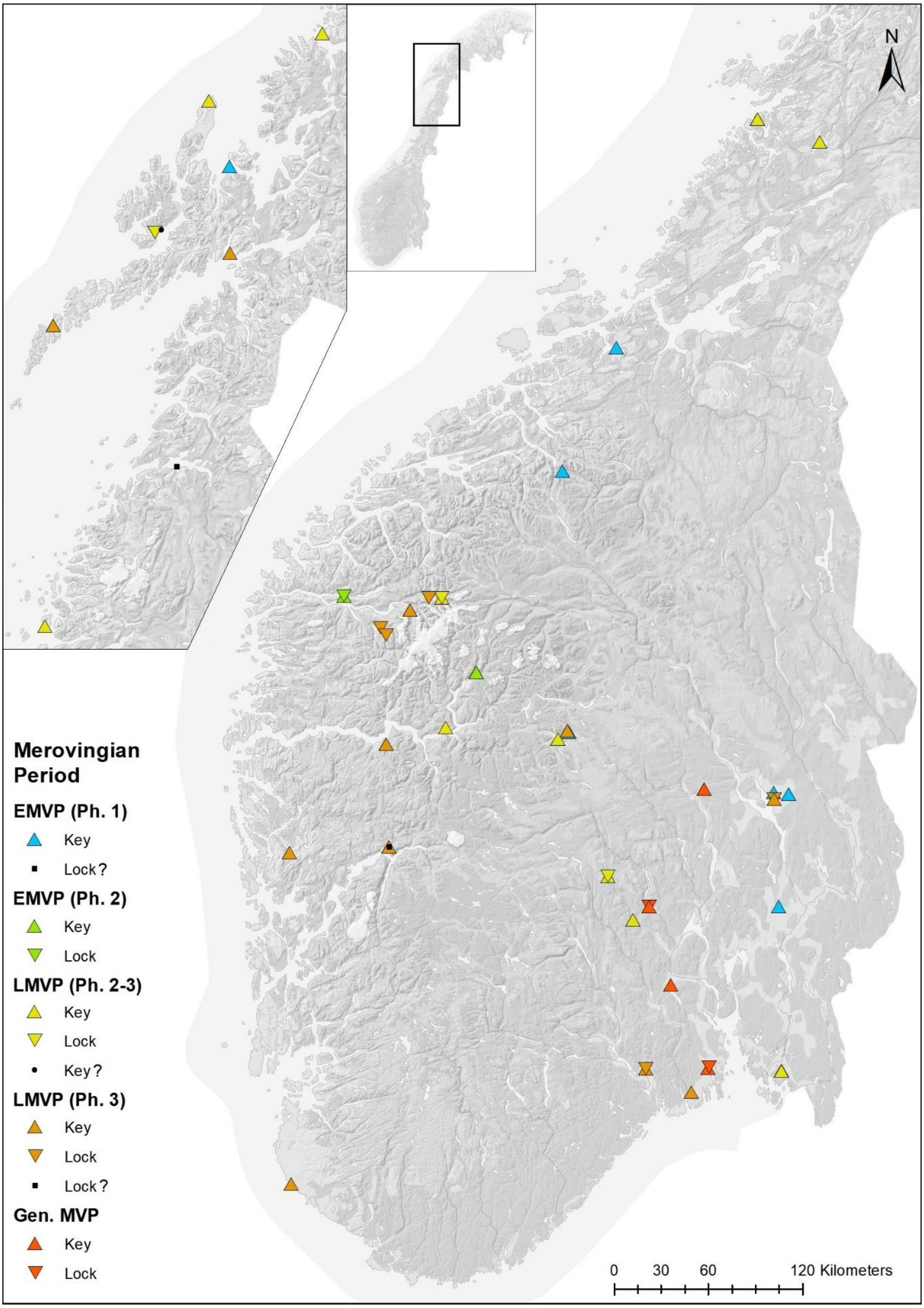


Figure 7.5. Geographical distribution of locks and keys in the Merovingian Period (Map: H. L. Berg).

This limited distribution changes significantly after around 700 AD. The finds dated between 700–800 AD (Phases 2–3) and 725–800 AD (Phase 3) demonstrate a rather rapid expansion, primarily from the mentioned diagonal line and southwards to northern Hordaland, inner Buskerud, and Vestfold, and from northern Trøndelag up to Nordland and Troms. The new patterns show scattered finds and small concentrations. In Western Norway, they are in the inner parts of Sogn og Fjordane, in upper Stryn, Olden, and Byrkjelo, as well as Vik and Kaupanger at the Sognefjord, and in Hordaland at Arna and Granvin, Hardanger. Rogaland has one find, by the southern coast of Jæren. In Eastern Norway, there are finds again in Grenland, Larvik, and Sarpsborg, along the coast of the outer Oslofjord area. Further inland are more finds at Hamar and at Vang in Valdres, and new occurrences in along the valley Eggedal in Buskerud. Moving northwards, locks and keys in Central Norway are now appearing in northern Trøndelag for the first time, at Overhalla near the Namsen River and on the island of Jøa on the outer coast. In Nordland there is a find on the island of Lurøy on the Helgeland coast, and on Flakstadøya in Lofoten. Close by in the Vesterålen area there are finds on Langøya, Andøya, and Tjeldøya. There is also one on Senja in Troms, which is the northernmost confirmed presence of locking in this study. While earlier finds have occurred as far as Harstad, this is the firmest indication that locks and keys become more widespread and established in Northern Norway, despite a low frequency in Central Norway.

The finds with general dates to the Merovingian Period all fall within the low-lying parts of Eastern Norway: in Søndre Land north of Lake Randsfjorden, at Lake Sperillen in Begnadalen, at Vestfossen in Øvre Eiker, at Stokke by the Tønsbergfjord in Vestfold, and one more find at the same site in Sarpsborg, Østfold. Overall, the patterns show a somewhat different impression compared to the previous periods. Most notable are the large lacunae from Nordfjord/Sunnmøre and north of Hamar up to Namsos in D2, and from most of Telemark across the Agder counties to Rogaland (albeit with one find) and southern Hordaland. From the sparse beginnings in Phase 1, locks and keys reappear in areas in which they occurred earlier, particularly the central West and lower East, and have a stronger presence in northern Trøndelag and Northern Norway.

With these aspects in mind, it is necessary to look at the transitional finds. These are shown in Figure 7.6, alongside the Merovingian Period finds. Interestingly, these largely correspond to the general picture while indicating a slight increase in distribution. These are finds from Oppdal in southern Trøndelag, the coastal area of Møre og Romsdal, at Dale in Sunnfjord, at Lærdal in inner Sogn, Ullensvang by the Hardangerfjord, and Lund in southern

Rogaland. There are also additional occurrences at sites with previous finds, such as Sarpsborg in Østfold, Stryn in Sunnmøre, Overhalla in Trøndelag, and Tjeldøya in Nordland.

Overall, the impression at *c.* 800 AD is that locks and keys are distributed in a largely different pattern than in the Early Iron Age. There are three main clusters in respectively Eastern Norway from Valdres and the Mjøsa areas to the outer Oslofjord, in Western Norway between Sunnmøre and northern Hordaland, and in Northern Norway between Lofoten and Senja. The find density of locks and keys suggest that locking has become a more established practice, and potentially emphasised in depositional practices. The areas between Sunndal and Oppdal towards northern Trøndelag and southern Nordland, as well as southern Hordaland, Rogaland and Agder are characterised by scattered finds. Here, the presence of locks and keys point to a less prominent relationship to locking, at least from their deposition. As suggested by the quantitative analysis, these patterns are likely to change in the Early Viking Age, which are presented in the following.

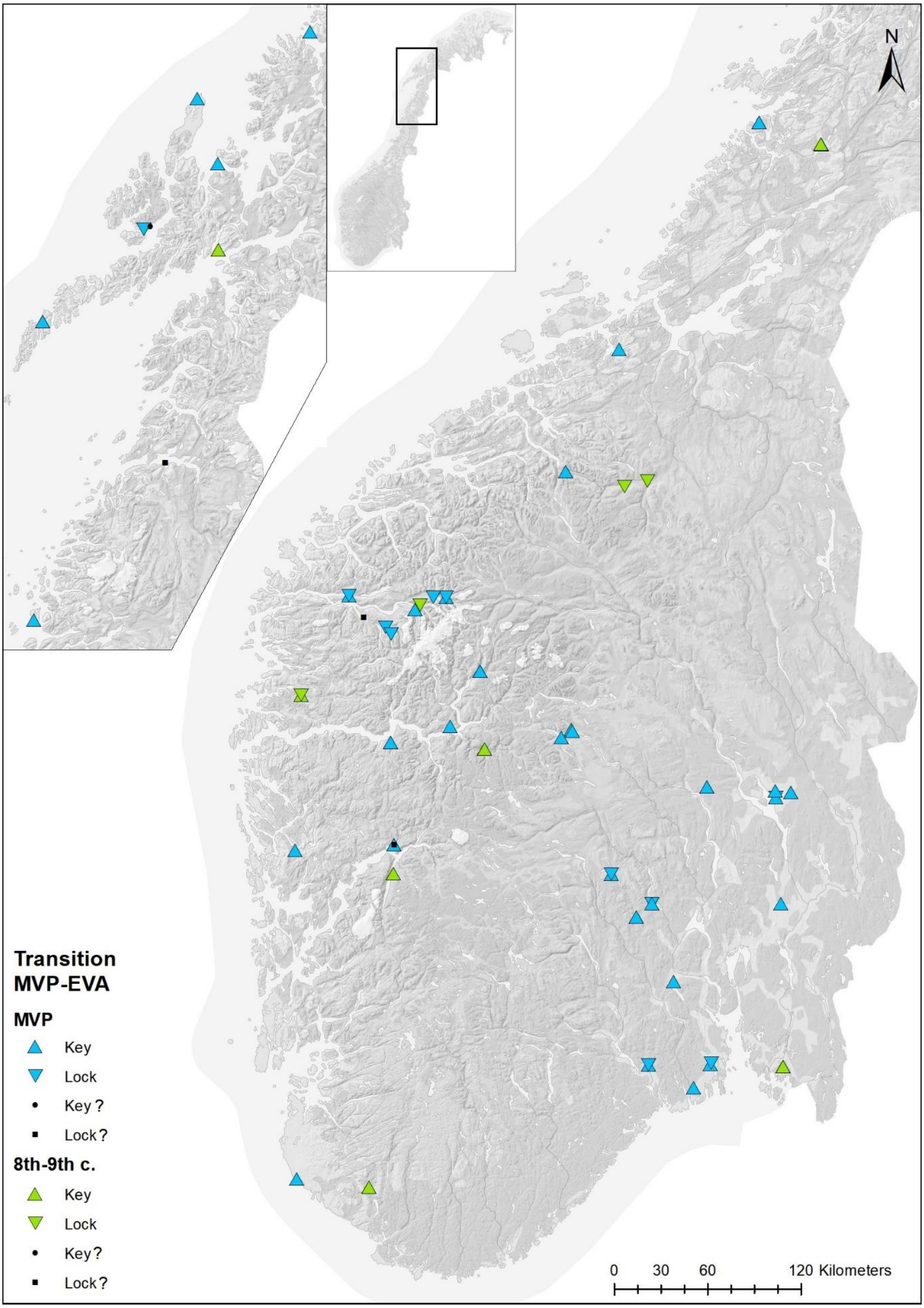


Figure 7.6. Geographical distribution of transitional finds between the 8th and 9th century. along with the Merovingian Period finds (Map: H. L. Berg).

The amount of finds from the Viking Age makes for some challenges with presenting them visually and understanding their spatial development. The distribution is therefore presented in separate chronological sections, dealing first with the Early Viking Age (800–950 AD), then the Late Viking Age (950–1050 AD), later adding the finds with general Viking Age and Late Iron Age dates and with dates reaching into the early Middle Ages.

As presented earlier (Table 7.4), the number of finds in the Early Viking Age is significant and indicate a large and rapid increase in locking devices in the Norwegian area. Attempting to grasp how these developments occurred spatially, the most narrowly dated finds are emphasised (Figure 7.7). The distribution presented here must be considered against the more generally dated Viking Age finds presented below.

Starting with the time span 800–850 AD, the lock and key finds occur largely in the same areas as in the Late Merovingian Period, with minor additions. In Eastern Norway, there are finds around Mjøsa, in Gran, and along the Oslofjord coast from Sarpsborg via Hurum in Buskerud to Larvik in Vestfold, with additions in the Tønsberg area, at Bø and Seljord in inner Telemark, and a sole find north in Kvikne, Hedmark. In Western Norway, there are finds in the Sandnes and Stavanger area in Rogaland; in Granvin, Voss, and Arna in Hordaland; at Sogndal and Hafslo in inner Sogn, in Gloppen, Stryn, and Nordfjordeid in inner Nordfjord; in Ørsta and Gurskøya Island in Sunnmøre, and in Sunndal in Nordmøre. Central Norway is represented by more finds in this phase, at Ørlandet, in Stjørdal, and Levanger near the Trondheimsfjord, as well as in Høylandet further north. There are no finds from Northern and Southern Norway among these finds, but their presence here should not be excluded (see below).

The finds dated between 850–900 AD generally follow the same pattern. The new additions are from Krødsherad in lower Hallingdal valley, Buskerud, in Kviteseid in Telemark, at Vik and Aurland in inner Sogn, and in Dale, Sunnfjord. Some of these places have finds from earlier periods, others are represented for the first time.

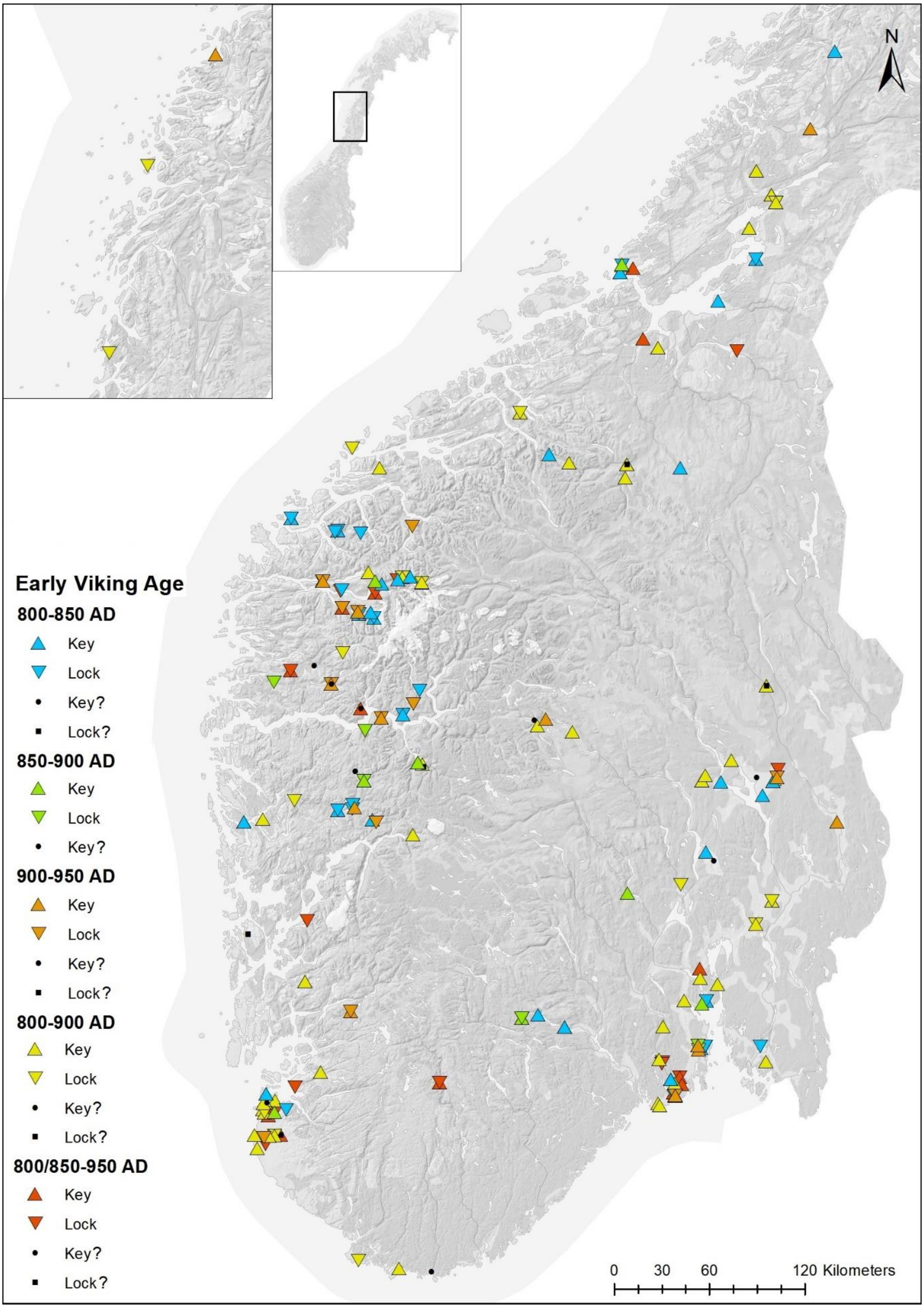


Figure 7.7. Geographical distribution of locks and keys in the Early Viking Age (Map: H. L. Berg).

The finds dated between 800–900 AD add considerably to the picture. In Eastern Norway, the area around Mjøsa becomes more pronounced, with finds also at Opphus in Østerdalen valley, in Østre Slidre and Vang in Valdres, in Nannestad and Skedsmo in Akershus. Additionally, Hurum and Vestfold is displaying a relatively dense number of finds, both along the coast and further inland. Vest-Agder in Southern Norway and Rogaland in the southwest are now represented by finds on a scale unprecedented since the Late Migration Period. In Hordaland, the dominance in the north is strengthened by finds around Osterøy and Stanghelle, and in Eidfjord, Hardanger, with one solitary find down by Etne in Kvinnherad. In Sogn og Fjordane, the Nordfjord area around Stryn and Gloppen are further emphasised, in addition to one find at Jølster in Sunnfjord. In comparison, Møre og Romsdal has few finds, occurring at Skuløya and Vatne in Haram, Romsdal, and in Tingvoll and Sunndal in Nordmøre. Central Norway is also more visible in this group of finds, on the southern end of the Trondheimsfjord at Skaun, and at Inderøy and Steinkjær in the northern end. In Northern Norway, Nordland is represented by finds on the Sømna peninsula in Brønnøy and on Lurøy on the Helgeland coast.

Considering the finds from 900–950 AD, these generally follow the established pattern. New occurrences are seen at Flisa in southeastern Hedmark; in Suldal, Rogaland; in Gaular, Sunnfjord; Norddal in Sunnmøre, Overhalla in northern Trøndelag, and on the island of Femris in Gildeskål, Nordland. Thus, largely by 900 AD and towards 950 AD, locks and keys are occurring over large parts of Norway. From the Late Merovingian Period, the strongest presence is still in Eastern Norway and the northern part of Western Norway, but with clusters appearing in Rogaland and Trøndelag. While there were occasional finds far inland and in mountainous areas in the Migration and Merovingian Periods, locks and keys now appear in these areas in higher numbers and more densely than before. This is confirmed by the finds generally dated between 800/850–950 AD, some of which appear in Valle, far up the Setesdal Valley in Aust-Agder and at Selbu in inner parts of southern Trøndelag. Another solitary find is by Rosendal in Kvinnherad by the Hardangerfjord.

Moving into the Late Viking Age, the quantitative analysis showed a lowered number of lock and key finds, which in principle could indicate a decrease in spatial distribution. However, as illustrated in Figure 7.8, the geographical extent remains largely the same despite the drop in finds. There are only a few finds dated between 950–1000 AD, located at Arna in Hordaland and close to Hønefoss in lower Ringerike, Buskerud. The majority of the finds are dated between 900–1000 AD and generally follow the same pattern as in the Early Viking Age. In Eastern Norway, the concentration now predominantly in two areas: inland between Hamar at Lake Mjøsa to Romerike and eastwards to Grue and Solør along Glomma, and around the outer Oslofjord north of Sarpsborg, in Hurum, in Øvre Eiker east of Kongsberg, and down to the Tønsberg, Sandefjord, and Larvik areas. Scattered finds appear in inner Telemark, in Kviteseid and Tinn, and in Gudbrandsdalen Valley. In Western Norway and Rogaland, there are still finds in northern Jæren, but the heavy concentration from the previous phase is reduced. Further in the Boknafjord, there are finds on Finnøy Island and in Hjelmeland, but none up towards Hordaland or south towards Vest-Agder. Hordaland still has a northern concentration in the upper Hardangerfjord, on Austevoll Island, at Arna, and in the Voss area. In Sogn and Fjordane, much like before, the concentration is in inner Sogn, now in Vik, Sogndal, and Skjolden, and in Nordfjord, at Stryn, Gloppen, and in and around Nordfjordeid. Møre og Romsdal have scattered finds, as in the Early Viking Age, at Hellesylt in Sunnmøre and Åndalsnes in Romsdal. Lastly, in Central Norway, there are finds inland at Oppdal in the south and at Overhalla in the north, and at Trondheim and Frosta. There are no finds within Northern Norway, nor in Southern Norway within this group of 10th century finds. How many of these finds that belong to the first half of the century, and therefore to the Early Viking Age cannot be determined, however, it is possible that many of them do, which should be kept in mind.

Finds dated to 1000–1050 AD are from only two contexts, one in the Setesdal Valley at Bygland in Aust-Agder, and one at Løten in Hedmark. Thus, the latest well-dated finds are only in the southern and easternmost parts of Norway, which does not mean that deposition of locks and keys cease elsewhere, as more broadly dated finds also may cover this time span (see below). The finds dated between 900/950–1050 AD provide three additions to this picture, at Lake Storsjøen in Sør-Odal, lower Hedmark, at Geilo in upper Hallingdal, Buskerud, and in Norddal in Sunnmøre, Møre og Romsdal.

Lastly, there is a small group of finds that are dated from 1000 AD to 1100 or 1350 AD. These have dates into the Middle Ages, but are included because they may belong within or around the periodic divide of 1050 AD. These are found mainly in Eastern Norway, in Sarpsborg, in the Kisa area in Ullensaker, Akershus, in Vestre Slidre in Valdres, Oppland, and in Sogndal, Sogn og Fjordane in Western Norway. Considered with the other 11th century finds, the occurrence of locks and keys seems to be very low in this late phase, and is mainly oriented to the southeastern areas. However, late finds may be included within the group of finds dated more broadly to the Viking Age, which are presented next.

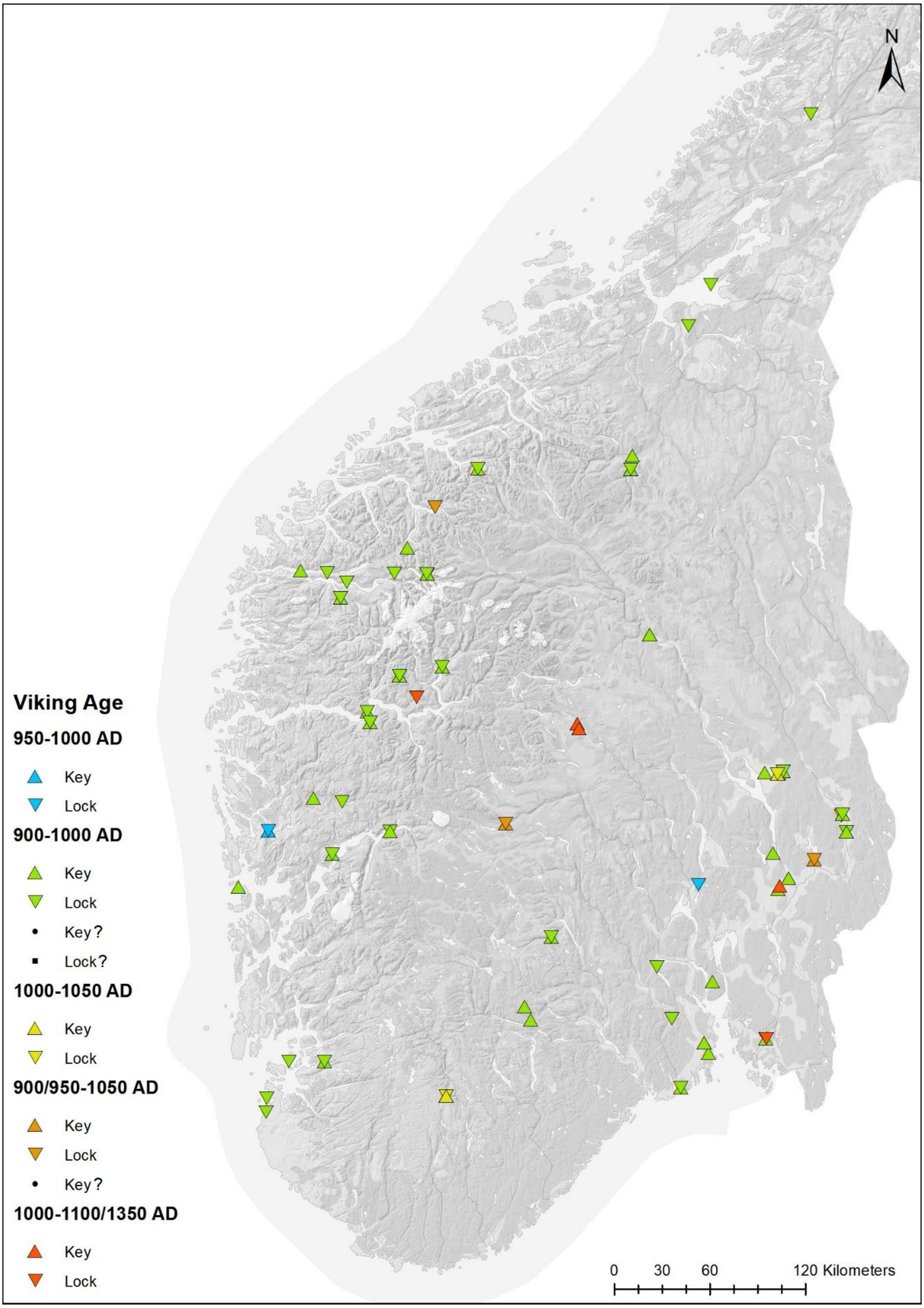


Figure 7.8. Geographical distribution of locks and keys in the Late Viking Age (Map: H. L. Berg).

The phase-related finds are presented collectively against the finds generally dated to the Viking Age in Figure 7.9. When considering the more closely dated contexts alone, there is a predominance of locks and keys in Western Norway. However, the picture is more balanced when the general finds are added, as the majority of these are from Eastern, Central, and Northern Norway. This temporal 'correction' may relate to the contexts, the majority of which are burials (467 of 503, Table 4.2). The date of the finds is largely reliant upon the composition of burial assemblages and the presence of closely datable artefacts, which are often characterised as 'elite' (4.4). Thus, wider dates indicate that few such artefacts were present in those respective contexts. There could therefore be aspects to the spatial patterning that relate to social stratification and organisation, which is relevant for considering the social context of locking.

The 'amended' patterns show areas that hitherto have appeared empty or with few finds to be more strongly represented. In Eastern Norway, these are in central to inner Telemark from Nome to Seljord and Vinje, the Valdres district from Nord-Aurdal to Slidre and Vang, the Gudbrandsdal Valley from Lillehammer to Hundorp, as well as Sjåk in Ottadalen Valley. In Nordland, they occur from Rødøy via Beiarn and Engeløy in Salten district, to Andøy and Tjeldøy in Vesterålen, and on western Kvaløy in Troms. These latter finds show that the seeming disappearance of locks and keys north of Bodø after the Merovingian period is due to chronological resolution rather than actual discontinuity, as most appear in the same areas as in the previous period. In addition, strongly represented areas are strengthened further by the generally dated finds, such as around Mjøsa, the Hadeland, Ringerike and Romerike districts, and the Vestfold coast in Eastern Norway, and around the Trondheimsfjord and at Oppdal in Central Norway. Romsdal and northern Rogaland are also somewhat more represented, while Hordaland, Sogn og Fjordane, and Agder are largely the same.

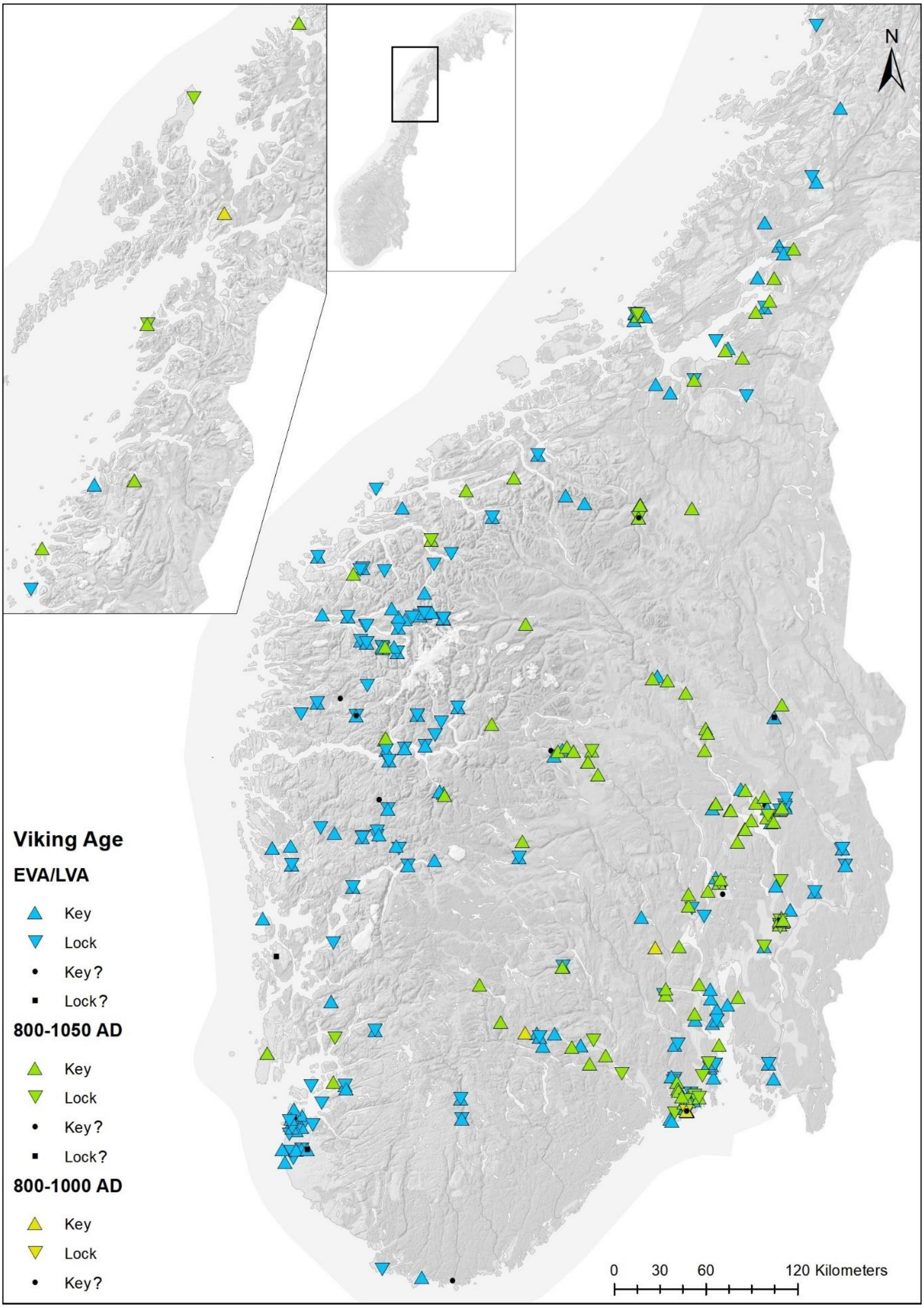


Figure 7.9. Geographical distribution of locks and keys in the Viking Age (Map: H. L. Berg).

Considering the spatial relations presented for the Viking Age, there are three main observations to be made. The first observation, which was indicated by the quantitative analysis and strengthened with the spatial analysis, is that locks and keys likely were a relatively commonplace and well-known form of technology, and locking a widespread practice in this period. This is indicated by the second observation, which is that locks and keys seem to be most widely distributed in the Early Viking Age, possibly by 900 AD. The period 800–950 AD saw a massive increase and deposition of locks and keys across Norway. If the 10th century finds are considered to mainly belong within the first half of the century, the difference between the early and late part of the Viking Age is even more marked. This point is also exemplified by Figure 7.10, which illustrates the Late Iron Age developments. It shows how the Merovingian Period finds seem to spread from smaller clusters outwards along the coasts and inland along rivers and valleys. The third observation is that although the number of finds drop towards the end of the Viking Age, their distribution and use was likely not reduced. In light of studies of medieval locks and keys, they were still very present and further developed functionally and technologically. These later finds are predominantly from the early towns, while the Iron Age finds are mainly from burials. Thus, the lower number from *c.* 950/1000 AD, may be due to a reduced practice of depositing locks and keys in burials, and the observed peak in the Early Iron Age is therefore likely due to deposition rather than an indication of actual numbers in circulation. It may also be related to a change in application, perhaps the introduction of locking doors on houses and other buildings. This is further addressed in 7.3 and 8.1.

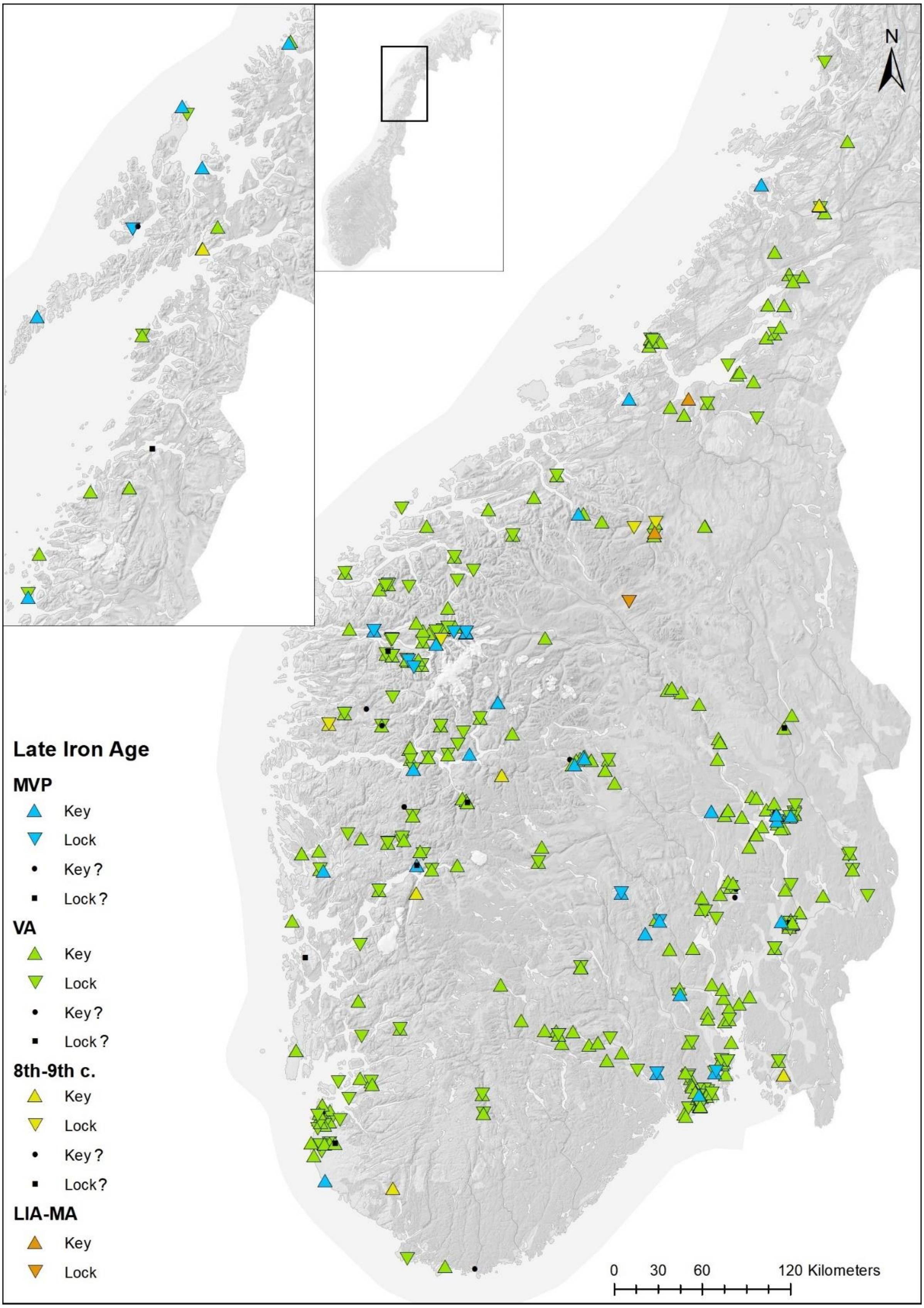


Figure 7.10. Geographical distribution of locks and keys in the Late Iron Age (Map: H. L. Berg).

7.2 Type distribution and techni-functional typologies

The second set of analyses are aimed at establishing what kinds of mechanisms – and, thus, what ways of locking – were present within Norway during the first millennium. As outlined in 3.8.1, the study centres on illuminating the dynamics of continuity and change, of variability and coexistence through studying types; which ones appear first and later; how similar or different they were in terms of function; whether they were stable or transformed over time; discontinued or forgotten; accompanied by other related and unrelated innovations or replaced by them; and how the range of locked things developed over time. The results will provide insights useful for considering the technological development in a wider social and craft-related context (7.3), and for outlining the possibilities and limitations for locking in terms of use (8.2).

Thus, in the following, the types of locks and keys are investigated in a similar fashion as above by periods, sub-periods, and phases. The types are first analysed temporally and quantitatively and gathered into resulting typologies for the respective artefacts. These are then analysed geographically, investigating where the particular lock and key types were deposited and likely used. Notably, the occurrence of a 'new' type at a particular time or in a particular area is not taken as indication that said type originated there or at that time. The analyses address the existence of types, not their place or time of invention, which is discussed separately in the last part of the chapter.

7.2.1 Typological analysis

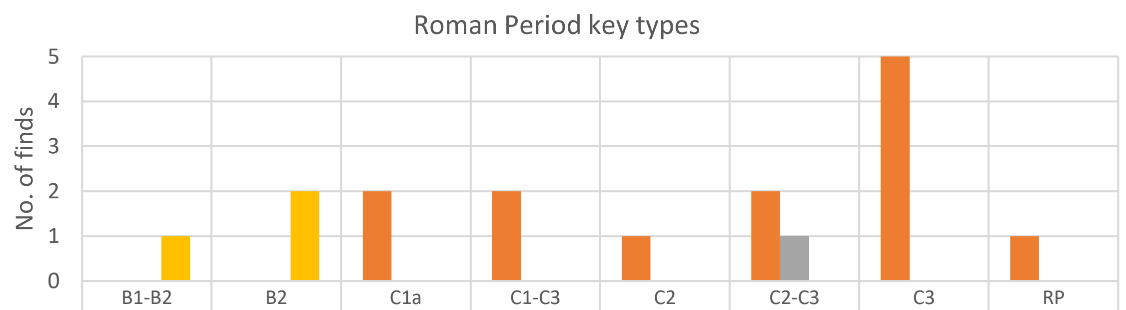
Having established the quantitative and spatial conditions of the introduction and spread of locks and keys in 7.1, the next stage is to relate these data to specific technological and use-related developments represented by types. The following analysis is based on the definite finds from each period. Keys and locks may be designated to main type, sub-type, and variant following the classifications. While the finds are considered to be keys and locks with certainty, the subsequent determinations may be uncertain at different levels. Thus, each find is set to its closest determinable classification level. For example, if a key is clearly of type 1A, but only one of potentially two or more tips are preserved, the 1A.1 variant is considered uncertain. Thus, the key is set at sub-type 1A in the analysis. Also, if the determination of a key or lock is split between two sub-types, say a lock cover belonging to either the pure pull lock sub-type A6 or the pull-and-slide sub-type AA2, it is set to A6/AA2, because this is more precise than just setting it at A/AA. Type A locks could be used for a range of container forms, while A6 and AA2 locks are indicative of caskets with lifting lids, providing an understanding of container type and possibly of use. This way, the lock and key types are placed as close to a determinable type, sub-type, and variant as possible, enabling the most proximate overview of techni-functional development and application of locking.

Roman Period mechanisms

Beginning with the Roman Period, there are 17 keys and 16 locks that are determined as certain. The typological occurrence of key and lock types by phase is illustrated in respectively Table 7.7 and Table 7.8 below. The first mechanisms to occur in the Early Roman Period consist of three keys and four locks. The locks are all A1.1 variants, with the characteristically blunt, angled lock spring. The keys are iron of 1A type, and all have missing bits, so their variants may not be determined by the key alone. However, they were accompanied by their respective A1.1 locks, meaning that they in all likelihood had one-tipped bits of the 1A.1 kind. A1 locks were used for boxes with sliding lids, no longer than *c.* 20 cm (5.1.1). Thus, the first mechanisms to appear in low numbers around the 1st century AD were for small wooden boxes that could be locked by one-tipped iron pull keys with arched hooks.

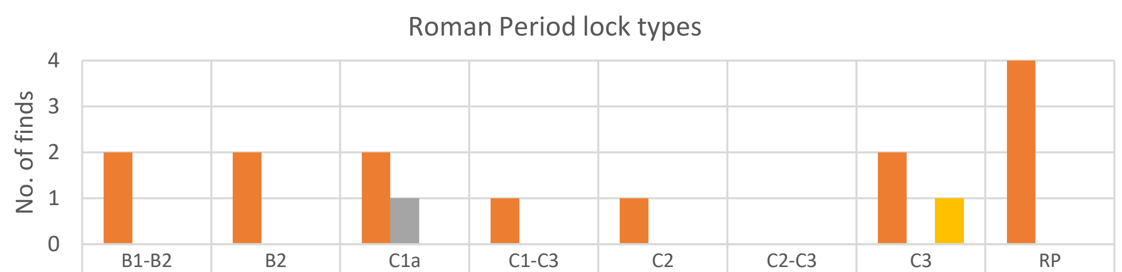
In the Late Roman Period, iron 1A.1 keys and A1.1 locks continue in C1a and the A2.1 lock makes a brief appearance in one find. The A2 type is characterised by arched lock covers mounted under sliding lids secured by riveted leaf springs. Based on parallel finds from Gotland (5.1.1), this mechanism indicates the locking of containers larger than boxes, i.e. caskets. This particular lock was accompanied by a type 1A.1 key, which also operated such mechanisms, showing that a new form of lock occurred that facilitated the use of a known key type. There are no finds dated to C1b, but as there are other finds with wider dates within the Late Roman Period this *c.* 30–50 year long lacunae may not be particularly significant. This is illustrated by the continuation of 1A.1 keys and A1.1 locks in C2 and C3. The A1.1 locks occur on the approximately same level in C3 as in the previous phases, while 1A.1 keys show a slight increase. A new addition is an A5 type lock, with the unusual external lock cover mounted on the outside of caskets with sliding lids. These are not locked by 1A.1 keys, and the potential candidate 1E (or a key form yet unknown) has not been securely dated to the Roman Period. A 1E key is dated to the Early Iron Age (Table 7.9), but these also operated A7 padlocks, so its use in A5 locks is not certain (see also 8.1.2 concerning the date of the 1E key). Still, the presence of the A5 lock shows that there have been three kinds of mechanisms present during the course of the Roman Period, respectively securing boxes and caskets with sliding lids. The A1 locks for boxes show a steady presence, while the A2 and A5 appear in different phases and in only one case each, thus it cannot be determined whether casket-sized containers were present to any degree in this period.

The finds with more general dates within the Roman Period support the tendency determined by the above. These are predominantly 1A.1 keys and A1.1 locks, with the exception of one 1A.2 type key, which has a suggested date to the 4th century AD but may also be early Migration Period. This means that pure pulling mechanisms were the only kind documented in this earliest part of the Iron Age. They were primarily used for small boxes with sliding lids, with two examples of locks fitted on caskets with sliding lids. The keys were very uniform in type, nearly exclusively with one tip, and the locks had only one lock spring – contrary to the example from Early Roman Period Juellinge (Müller 1911), which is the basis for the A1.2 variant.



	B1-B2	B2	C1a	C1-C3	C2	C2-C3	C3	RP
1A.1			2	2	1	2	5	1
1A.2						1		
1A	1	2						

Table 7.7. Key types in the Roman Period by phase.



	B1-B2	B2	C1a	C1-C3	C2	C2-C3	C3	RP
A1.1	2	2	2	1	1		2	4
A2.1			1					
A5							1	

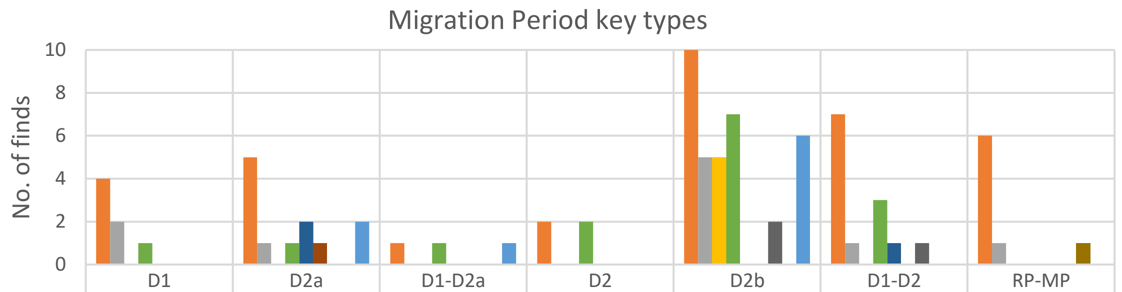
Table 7.8. Lock types in the Roman Period by phase.

Migration Period mechanisms

There are pronounced differences in the number of keys and locks in the Migration Period; counting certain finds, there are 74 keys and six locks, meaning that the number of keys from the former period is more than quadrupled, while the number of locks is reduced rather than increased (cf. Table 7.2). There is both continuity and change in terms of types, as presented in Table 7.9 and Table 10. In phase D1, there are no lock finds, but seven iron keys, four of which are 1A.1 type, two are 1A.2 type, and the latter two may only be determined as type 1.

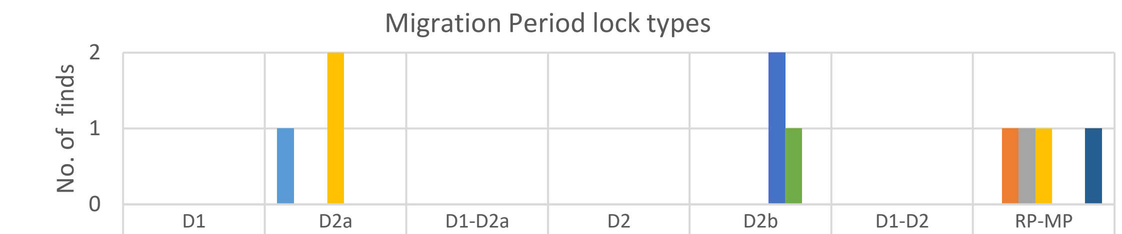
Within the Late Migration Period here are 12 keys and three locks in phase D2a. The keys are all pull keys, predominantly of the arched form 1A (five 1A.1 and one 1A.2), but with the first appearance of the angled 1B type, although missing its bit. This is also the phase where copper alloy pull keys appear – all keys before this phase were iron, with one exception (B4643c, dated to C3). Six of the twelve keys from D2a are copper alloy, of both 1A and 1B type. Two of the three locks are type A6.1, characterised by a vertically mounted lock spring used for caskets with lifting lids. The third lock is only represented by a keyhole fitting resembling those used for A2 locks from Gotland (Almgren and Nerman 1914, 1923), found alongside a 1A.1 key. Three keys derive from D1-D2a, all 1A keys, one of which is 1A.1. Worth mentioning from this phase is a potential lock spring for an A2 lock. This, and the aforementioned keyhole fitting are slight indications that caskets with sliding lids are still in use, but the one A2 lock from C1a remains the only certain occurrence of this type in the Norwegian material. Along with the appearance of A6 locks, there are indications of a move away from containers with sliding lids to lids that could be lifted, at least for containers that were locked.

There are 35 keys and 4 locks dated to D2b. Of the keys that can be determined into sub-type, there are 27 1A keys (ten 1A.1, five 1A.2, and five 1A.3). There are also three 1B keys, two of which are type 1B.2, the last without preserved bit. Here, 23 of 35 keys are copper alloy. Two locks are type A6.2 and one type AA1.2, which is the first pull-and-slide lock to appear. These are characterised by having so-called cover bolts overlying a short, leaved lock spring, and a hasp. Similar to A6 locks, these are used for caskets with lifting lids. The key accompanying the AA1.2 lock was a 1A.2 key with corresponding dimensions showing that they belonged together. Thus, one can determine that another lock mechanism appeared for which existing key types were used. A6 locks have not been found alongside keys, nor have 1B keys been found alongside locks, so it is not firmly established whether a specific type belonged to each of them. However, it is likely that A6 could be operated by both 1A and 1B keys, and 1B keys could in principle have been used in AA1 locks as well.



	D1	D2a	D1-D2a	D2	D2b	D1-D2	RP-MP
1A.1	4	5	1	2	10	7	6
1A.2	2	1			5	1	1
1A.3					5		
1A	1	1	1	2	7	3	
1A/1B		2				1	
1B		1					
1B.2					2	1	
1E							1
Type 1		2	1		6		

Table 7.9. Key types in the Migration Period by phase. Finds dated to the Early Iron Age on the right.



	D1	D2a	D1-D2a	D2	D2b	D1-D2	RP-MP
Type A		1					
A1.1							1
A5.1/A6.1							1
A6.1		2					1
A6.2					2		
AA1.2					1		
Lock Unkn.							1

Table 7.10. Lock types in the Migration Period by phase. Finds dated to the Early Iron Age on the right.

Finds dated to D2 support the general tendency presented above. These are four keys, all of 1A type, two of which can be identified as 1A.1 keys. The same goes for the finds with a general date to the Migration Period. These are also exclusively keys, 13 in total, of either 1A or 1B type (seven 1A.1, one 1A.2, and one 1B.2). Thus, in the Migration Period, the single-tipped 1A key is still the dominant form, but now accompanied by variants with two or three tips, as well as angled 1B keys with one or two tips towards the later part of the period. The keys indicate the presence of locking mechanisms with springs having one or two leaves, and occasionally three. The lock material, however, does not fully correspond to this impression. Single and double-springed mechanisms are present, fitting the 1A and 1B keys with one or two tips, but locks for the 1A keys with three tips are not present. This may be due to the general low number of locks, which likely results from depositional practices and potentially also preservation and identification. The possibility that locks for three-tipped keys did not exist, and that such keys were not functional cannot be excluded, but is so far difficult to determine. In terms of technical function, the main change is that mechanisms for sliding lids seem to disappear and those for lifting lids are introduced. The first pure pulling mechanism for hinged lids, A6, appears around the late 5th century and the first pull-and-slide mechanism applying the use of a hasp occurs at the end of the period.

When looking at the finds generally dated to the Early Iron Age, there are no finds that break with the established patterns, with one exception. There is one key of 1E type, the short and two-tipped kind that operates A7 padlocks and potentially also A5 locks, mentioned under the Roman Period finds. This is the earliest indication of padlocks from the Iron Age, and its date is unfortunately imprecise, and possibly too early (see 8.1.2). Apart from this unusual trait, the other finds correspond to the general development. Of the eight certain keys there are six 1A.1, one 1A.2, and one pull key of indeterminable sub-type. The four locks contain one certain A6.1 type, one of either A5.1 or A6.1 type, one A1.1 type, and the last one is unknown. Judging from the well-dated finds, the first one is likely of Migration Period date, the second may be Late Roman or Migration Period, and the third probably belongs to the Roman Period. The key types occur in both periods and do not give any closer indications of date.

In summation, the developments in the Early Iron Age is characterised by novelties, continuities, and transformations. From the point of introduction, there is relative continuity in key types with some increasing elaboration in hook and bit form in the Migration Period, as well as introduction of copper alloy in key manufacture and lock embellishment. The lock mechanisms are all of iron, the only use of copper alloy is seen on the AA1.2 lock hasp. This is contrary to examples of Danish and Gotlandic finds, where copper alloy is used in lock parts for both A1 and A2 mechanisms with double springs (Müller 1911; Almgren and Nerman 1914, 1923). The mechanisms of the Roman Period seem to stay relatively the same throughout the period, at least concerning A1 locks. These are all of the A1.1 variant, operated by single tipped 1A keys. Examples of the A2 and A5 lock types make brief and partly uncertain appearances. Because of this, it is unclear whether caskets with sliding lids were ever particularly present in the Norwegian area. The primary locked containers seem to have been small boxes, although they were few in number. These seem to disappear around 400 AD and mechanisms for caskets with lifting lids appear around the late 5th century.

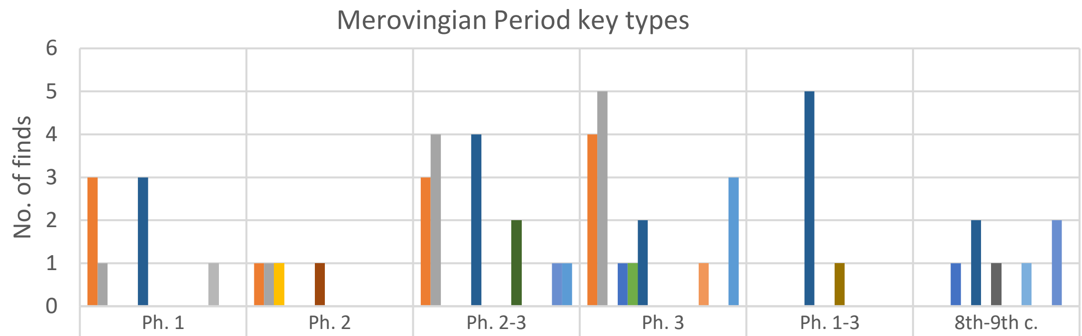
The introduction of caskets with lifting lids was necessarily accompanied by the application of metal hinges, either in the form of simple cramps or larger fittings. In practical terms, this facilitated the construction and use of larger containers such as caskets. This was also a prerequisite for making chests. In the Roman Period, the sliding-lid boxes secured by A1 locks would likely not exceed 20 cm in length and 10 cm in width, which was a practical size in terms of using a sliding motion to open and close. The size of the caskets secured by A2 locks is not known, but sliding a lid exceeding 30–40 cm would likely be cumbersome. As the lid would either be removed entirely from the case or hang partly inserted, a length around 40 cm seems unlikely. As mentioned in Chapter 5, a sliding lid would have been susceptible to warping, making sliding difficult and potentially requiring the lid to be replaced. Thus, introducing lifting lids would have made opening and closing easier. The lid would remain attached to the case by the hinges when open and could easily be lowered back in place. Being able to increase the size of caskets in both length and breadth may also have been desirable, as it would allow for locking away a larger amount and size of things. This is exemplified by a casket dated to D2b from Sande in Farsund (C55731/9), which the one AA1.2 lock belongs to. It probably measured *c.* 40 cm in length and 30 cm in width (5.1.5), and is the only Early Iron Age casket in the Norwegian material with discernible dimensions, to my knowledge. Comparably, the known boxes from the Roman Period with sliding lids are considerably narrower, which those secured by A2 and A5 locks may also have been.

In the Early Migration Period, locks are not visible in the material record, only keys. These are primarily arched pull keys of the one-tipped variant, but 1A.2 keys with two tips have a more firm presence. As such, the Early Migration Period is more in line with the Roman period than the later part and may be regarded as a technologically transformative period, where boxes and caskets with sliding lids seem to go out of use, while more elaborate keys are starting to appear. In the Late Migration period, pull keys continue to develop more varied bit forms bearing two as well as three tips, being produced in both iron and copper alloy. Alongside this development, two new lock types designed for securing caskets with lifting lids appear, the A6 and the AA1. These changes are most prominent in the last phase, D2b, and may illustrate the start of another transformative stage. This development will be considered against the Merovingian Period patterns presented in the next section.

Merovingian Period mechanisms

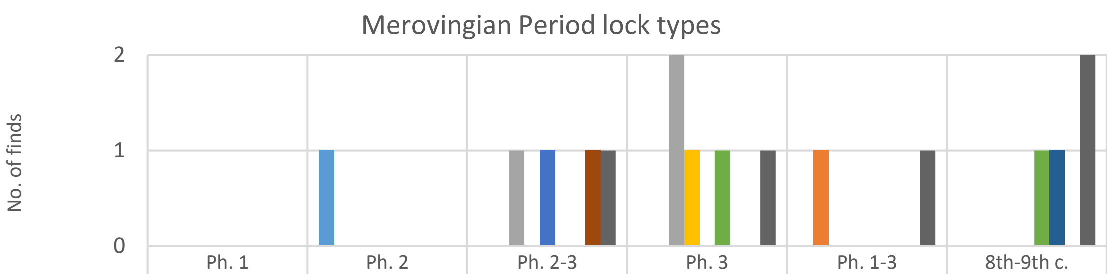
There are 50 keys and 12 locks dated to the Merovingian Period, and seven keys and four locks fall across the 8th to 9th century divide (Table 7.11 and Table 7.12). In Phase 1, there are eight keys, seven of which are 1A keys – three 1A.1 and one 1A.2. The last one is a 2B.2 turn key, which is the earliest indication that turning mechanisms had been introduced. Being a late 19th century find from a presumed double grave, its date may be uncertain (further details are presented in the spatial analysis). Still, the occurrence of other turn keys from *c.* 700 AD onwards is an indication that turn locks are slowly appearing (see below). The locks do not mirror this development, though, which may be explained by their markedly few finds. There are no locks from Phase 1, and none from the later phases may be safely determined as turn locks. The only possible candidate is a two-leaved lock spring from Phase 2, which may be either of A6.2 or B1 type. However, judging from the existence of A6 locks from the Late Migration period and no secure B1 type until the Viking Age (Table 7.17), it is most likely of the former type. This is the only lock from Phase 2. The keys from Phase 2 are four in number, three of the respective variants 1A.1, 1A.2, and 1A.3, in addition to one 1B.2 key.

In Phase 3, there are five locks, four of which are pull-and-slide locks: two AA1.2, one AA1.3, and one AA2. This is the first appearance of AA2 locks, which are characterised by having springed bolts with a handle for sliding. The last of the five is determined by two hasps, which are only indicative of mechanisms with secondary sliding motion, not allowing a closer determination than AA/BB/CC. However, judging from the other locks from the period, the hasps deriving from a pull-and-slide lock is the most proximate. The keys from Phase 3 are 17 in number and are predominantly pull keys, with one exception: a turn key of either 2A or 2B type. This represents a more firm indication that turning keys and locks are being introduced, despite the lack of certain B-type locks. Of the other keys, eleven are type 1A (four 1A.1, five 1A.2, and two without preserved bits), and two are either type 1A or 1B.



	Ph. 1	Ph. 2	Ph. 2-3	Ph. 3	Ph. 1-3	8th-9th c.
1A.1	3	1	3	4		
1A.2	1	1	4	5		
1A.3		1				
1A/1B				1		1
1A.4/1B.4				1		
1A	3		4	2	5	2
1B.2		1				
1B						1
1E					1	
Type 1			2			
2A.1						1
2A/2B				1		
2B.2	1					
2B.3			1			2
Key Unkn			1	3		

Table 7.11. Key types in the Merovingian Period by phase. Transitional finds on the right.



	Ph. 1	Ph. 2	Ph. 2-3	Ph. 3	Ph. 1-3	8th-9th c.
A6.2/B1		1				
A7					1	
AA1.2			1	2		
AA1.3				1		
AA1.2/CC1			1			
AA2				1		1
AA2.2						1
A6/AA1/AA2			1			
AA/BB/CC			1	1	1	2

Table 7.12. Lock types in the Merovingian Period by phase. Transitional finds on the right.

The finds with wider dates show a general correspondence with the established patterns, but also some indications of developments that the well-dated finds do not reflect. Among finds dated to the Late Merovingian Period (Phases 2-3), there are 15 keys and four locks. The keys are, again, commonly of 1A.1 and 1A.2 type, but one 2B.3 key strengthens the tentative indication from Phase 1 that turn mechanisms are appearing before the Viking Age. This is also the earliest turn key made from copper alloy. The locks, though, are all certain or likely pull locks. The most precisely determined one is of AA1.2 type, and another is determined to either A6 or AA1/AA2 type. The third is most likely another AA1.2 lock, but an early push-and-slide lock of type CC1 cannot be excluded. The fourth is a hasp, adding another find to the general sliding mechanisms grouped into AA/BB/CC. Of the general Merovingian Period finds there are five 1A keys of indiscernible variant and another hasp. More interestingly, the first confirmed A7 lock with corresponding 1E key is documented, providing the most firm indication that padlocks had come into use. Thus, the earliest padlocks were centred on the same locking principle as in mounted locks, a pulling motion facilitated by a pull key. This particular key type was or may have closely resembled an already known type used to open mounted locks of A5 type. Nonetheless, there are so few finds to go on that this latter point is so far only a suggestion.

Lastly, there are the transitional finds. These include four pull keys (two 1A, one 1A/1B, and one 1B), and three turn keys (one 2A.1 and two 2B.3). As turn keys are especially common in the Viking Age, the three may belong here. That such keys appear in Norway before 800 AD is possible, but the lock material provides little support for their introduction in the Merovingian period. The four locks are two pull-and-slide locks (one probable AA2 and one AA2.2), and two that cannot be determined closer than AA/BB/CC based on the presence of hasps.

Summarising the findings from the Merovingian period, there are – again – signs of continuity and change. Based on the best-dated finds, there are three main observations. Firstly, relying strictly on key form there seems to be a relative continuity from D2b into Phase 1. The dominating type is still the 1A sub-type with either one or two tips. However, the decorated copper-alloy keys disappear completely around 550 AD, and keys in Phase 1 are iron, both the 1A keys and the singular 2B.2 key. The numbers also drop significantly, from 35 to eight. The drop in keys is mirrored by a fall from three locks to none in the same time span. The patterns indicate that changes in both depositional practices and manufacture is taking place. Unfortunately, the absence of locks from this phase means that it cannot be determined whether there is also a change in locking mechanisms themselves. Nevertheless, the mechanisms dated to Phase 2 and 3 indicate that something did happen, which may be described as the second observation.

The locks show signs of a move towards predominantly pull-and-slide mechanisms, seemingly abandoning the use of A6 locks, or at least their deposition, around 650/700 AD. Furthermore, the pull-and-slide locks are displaying increased variation, marked by the possible introduction of AA2 locks, of triple-leaved springs in AA1 locks, and the first presence of two hasps in AA1.2 locks. More than one hasp is not a set indication of a large container in itself, but a casket approaching 50 cm or a small chest is possible. In comparison, the AA1.2 lock from Sande mentioned earlier had only one hasp. The AA1 and AA2 locks are more technologically complex than the A6 lock, consisting of multiple parts including hasps. As explained in Chapter 6, the former requires a longer series of movements to open and close than the latter. Thus, caskets seem to get larger, potentially reaching chest size, and are fitted with more varied and elaborate locks than in the previous period. This last point is particularly true if turn locks and push padlocks did arrive around the end of the period. However, firmly placing these developments in the Merovingian Period is challenging, as most of the locks are transitional finds. Still, broadening the range of locking devices is ongoing through this period, which is also illustrated by the third observation: the first appearance of padlocks. The arrival of the A7 lock sometime in this period represents the first sign of truly mobile and versatile locking mechanisms. Padlocks could well be used on caskets and chests (and were demonstrably so, in the Viking Age), but the lock form indicates that locking in principle was no longer restricted to containers.

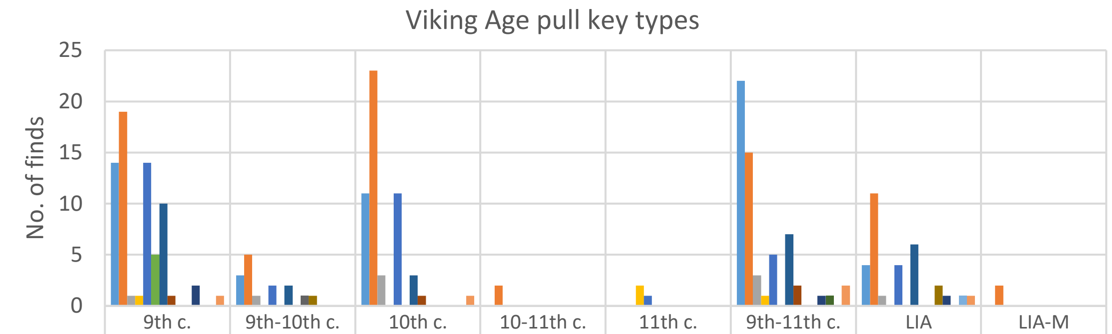
The Merovingian Period displays a locking technology in development despite the low number of finds. The pull keys are relatively similar to those of the previous period, but there is a discontinuity with regards to material use. The main indications of technological change is visible in the locks, which display increasing diversification towards the 8th century, while remaining within the bounds of pulling mechanisms. The introduction of turning and pushing mechanisms is suggested by keys, but is otherwise uncertain. In this respect, it is interesting to consider the Viking Age developments, and to which degree they are foreshadowed by the developments in the Merovingian Period.

Viking Age mechanisms

There are 337 keys and 154 locks from the Viking Age that are considered to be certain. As the following will illustrate, the high number of finds presented in 7.1.1 is manifested in a wide variability of types in this period. From *c.* 800 AD, the pull locks are joined by both turn locks and push locks of various kinds. To show how these three main types develop through the Viking Age, they are visualised separately. The respective key types are presented in Table 7.13, Table 7.14, and Table 7.15, and the lock types in Table 7.16, Table 7.17, and Table 7.18. This is done to avoid confusion, as dealing with a high number of sub-types and variants risks muddling the relevant details.

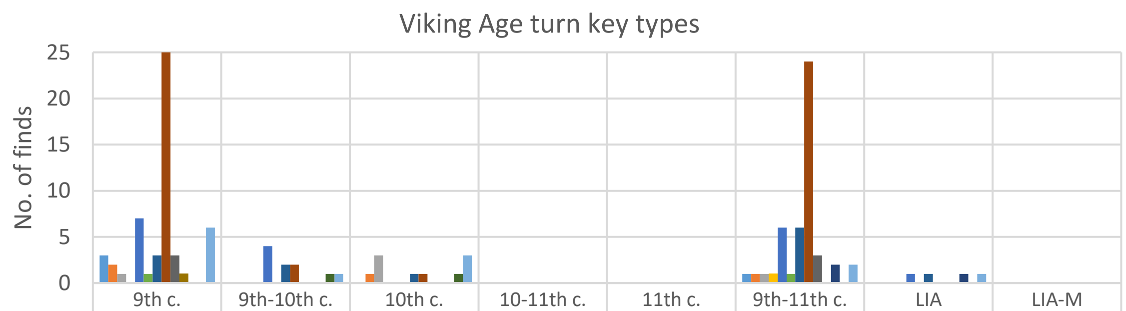
The 9th century finds consist of 124 keys and 53 locks. Of the keys, 68 are pull keys, 52 turn keys, two push keys, and two of indeterminable type. The pull keys are mainly of 1A.1 and 1A.2 variants, with one 1A.3. There are 16 1B type keys, with commonly one or two tips, and one with three tips. These mainly conform to the patterns of the two former periods. A novelty, however, are the T-shaped keys of type 1C, which is represented by two finds. Apart from the singular examples from the Merovingian Period and the transitional finds, turn keys seem to be widely introduced at this early stage, with three of four sub-types in place – the 2D does not occur in the material apart from an indefinite find. Types 2A and 2B are represented by all of their respective variants except 2A.4. Variant 2B.2 is particularly prominent with 25 finds, while only one 2C.2 is dated to this phase. The two push keys are one 3A.2 type and one 3E. The 3A.2 key belongs to the padlock type C1, while the other is for the mounted CC1 lock. Thus, all keys apart from one are for mounted locks spanning all three main types. This is reflected in the lock material from the same time.

The pull locks dominate with 23 locks, making up about half the number, followed by 17 turn locks and four push locks. Additionally, 8 locks are documented by hasps, and one clasp hasp indicate mounted locking by padlock. The pull locks are mostly of already established types, such as the A6, AA1 and AA2, but the latter two now occur in variants with three-leaved lock springs. As for new additions, the AA3 type is introduced, operated by 1C keys. Type A4 is operated by the same key type, which also makes its first (and only) appearance alongside type A3. As presented in Chapter 6, the A3 lock was used on a small bone/antler box with a sliding lid from Oseberg, making it the first documented container of this kind since the Roman Period. The A4 is only known from the bucket-shaped caskets from Oseberg, thus, both the lock type and the containers are currently unique. The turn locks make up another new feature at this time, and they seem to arrive in most of the presented sub-types, with two exceptions. The BB3 type is not documented within the Norwegian area and the existence of padlock type B2 is not dated more precisely than the Viking Age, and only by one find. The mounted pure turn lock B1 is represented by two finds in the 9th century, whereas the turn-and-slide locks are 15 in number. Type BB1 is present in four finds with primarily two- but also three-leaved springs, BB2 in two finds, seven are either type BB1 or BB2, and one is BB4. Lastly, the push locks are represented by three padlocks of respectively C1, C3.1, and C4.l type, as well as one CC1 lock.



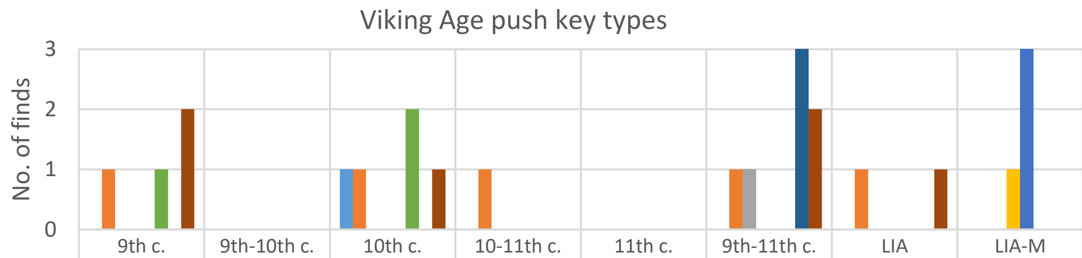
	9th c.	9th-10th c.	10th c.	10-11th c.	11th c.	9th-11th c.	LIA	LIA-M
1A.1	14	3	11			22	4	
1A.2	19	5	23	2		15	11	2
1A.3	1	1	3			3	1	
1A/1B	1				2	1		
1A	14	2	11		1	5	4	
1B.1	5							
1B.2	10	2	3			7	6	
1B.3	1		1			2		
1B.1/1B.2		1						
1B		1					2	
1C	2					1	1	
1D						1		
1E							1	
Type 1	1		1			2	1	

Table 7.13. Pull keys in the Viking Age by phase. The finds from the Late Iron Age and with dates reaching into the medieval period to the right.



	9th c.	9th-10th c.	10th c.	10-11th c.	11th c.	9th-11th c.	LIA	LIA-M
2A.1	3					1		
2A.2	2		1			1		
2A.3	1		3			1		
2A						1		
2A/2B	7	4				6	1	
2B.1	1					1		
2B.2	3	2	1			6	1	
2B.3	25	2	1			24		
2B	3					3		
2C.2	1							
2C.3						2	1	
2C		1	1					
Type 2	6	1	3			2	1	

Table 7.14. Turn keys in the Viking Age by phase. The finds from the Late Iron Age and with dates reaching into the medieval period to the right.

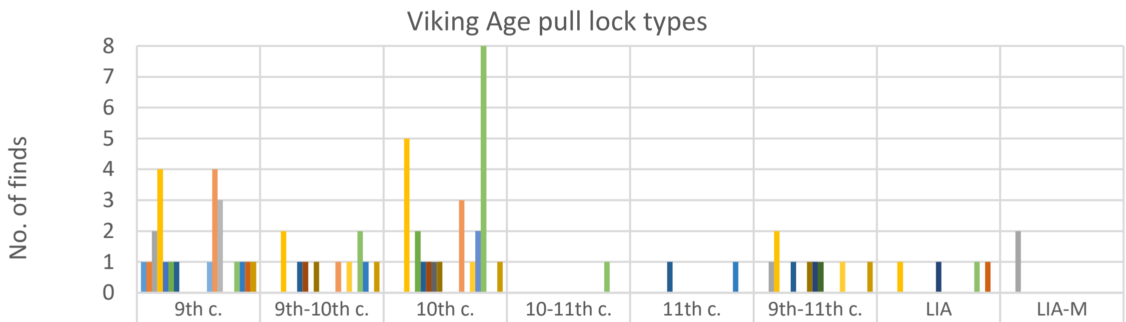


	9th c.	9th-10th c.	10th c.	10-11th c.	11th c.	9th-11th c.	LIA	LIA-M
3A			1					
3A.2	1		1	1		1	1	
3A.3						1		
3B.2								1
3C.2								3
3E	1		2					
3F						3		
Key Unkn	2		1			2	1	

Table 7.15. Push keys in the Viking Age by phase. Finds from the Late Iron Age and with dates reaching into the medieval period to the right.

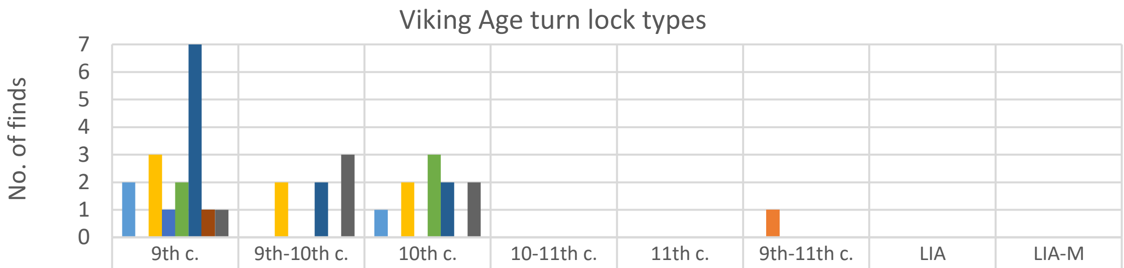
Moving into the 10th century, there are 68 keys and 49 locks. The pull keys are in significant majority with 51 finds, against ten turn keys, and three push keys, in addition to one of indeterminable type. The pull keys are, again, mainly of the 1A type with 11 1A.1, 23 1A.2, and three 1A.3. There are only four 1B keys, three 1B.2 and one 1B.3. No other pull key sub-types are dated to the 10th century. The turn keys are also displaying changes from the previous phase. There are no 2C keys and the 2A keys are represented by one 2A.2 and three 2A.3, and there is only one 2B.2 and one 2B.3. However, the finds more generally dated to the Viking Age may alleviate this seemingly dramatic drop in turn key numbers (see below). The three push keys are respectively two 3A type (one 3A.2) and one 3E, which is largely in line with the 9th century.

The locks are not as unevenly distributed by type as the keys, but the pull locks are in majority with 26 finds, against ten turn locks, and seven push locks. Additionally, five locks are determined by hasps as mounted sliding locks. Among the pull locks, the A3 and A4 are no longer represented, and the A6 type is present by five of the two-leaved variant. However, as shown in Table 7.16, vertically oriented two-leaved lock springs found alone are indicative of either A6 or B1 locks, so the number may be slightly higher. The AA1 and AA2 are still present, while the AA3 is no longer visible, except by one find dated to the Late Iron Age. The AA1 is only continued in its two-leaved variant, and the AA2 by two one-leaved and eight two-leaved variants. The three-leaved ones only occur once more in an 11th century find, although lock covers with one, two, and three key apertures indicate either A6 or AA2 locks with one to three-leaved springs. The lower occurrence of pull locks with three-leaved springs are corresponding to the low numbers of three-tipped pull keys illustrated above. As for the turn locks, these are the same number as the keys. There is one B1 lock, otherwise the rest are turn-and-slide locks: two BB1.2, three BB2, two BB1/BB2, and two that cannot be determined closer than BB. These indicate that there are no determinable single- or triple-leaved mechanisms in the 10th century, although the keys indicate that they probably were present. As for the push locks, these are represented by five C1 locks (two C1.1 and one C1.2), and two CC1 locks.



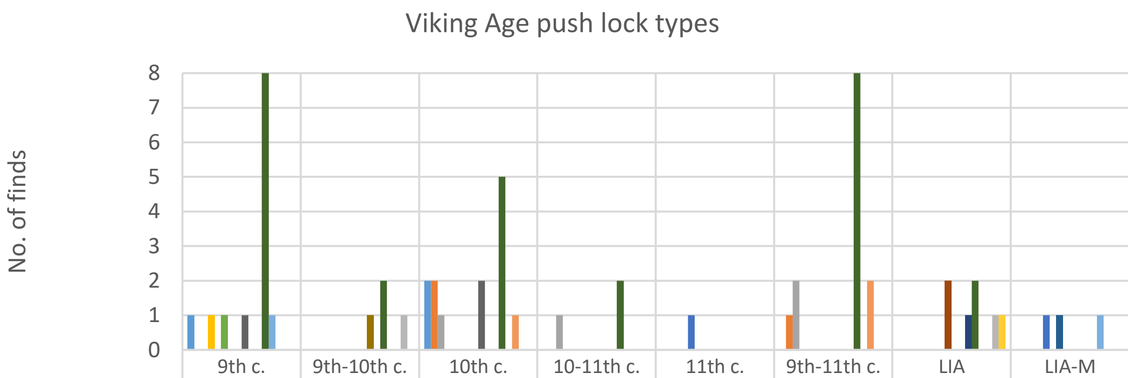
	9th c.	9th-10th c.	10th c.	10-11th c.	11th c.	9th-11th c.	LIA	LIA-M
A3	1							
A4	1							
A6.1	2					1		2
A6.2	4	2	5			2	1	
A6	1							
A6.1/AA2.1	1		2					
A6.2/AA2.2	1	1	1		1	1		
A6.3/AA2.3		1	1					
A6/B1			1					
A6.2/B1		1	1			1		
A7						1	1	
A7/C3						1		
AA1.1	1							
AA1.2	4	1	3					
AA1.3	3							
AA2		1	1			1		
AA2.1			2					
AA2.2	1	2	8	1			1	
AA2.3	1	1			1			
AA3	1						1	
A/AA	1	1	1			1		

Table 7.16. Pull locks in the Viking Age by phase. Finds from the Late Iron Age and with dates reaching into the medieval period to the right.



	9th c.	9th-10th c.	10th c.	10-11th c.	11th c.	9th-11th c.	LIA	LIA-M
B1	2		1					
B2						1		
BB1.2	3	2	2					
BB1.3	1							
BB2	2		3					
BB1/BB2	7	2	2					
BB4	1							
BB	1	3	2					

Table 7.17. Turn locks in the Viking Age by phase. Finds from the Late Iron Age and with dates reaching into the medieval period to the right.



	9th c.	9th-10th c.	10th c.	10-11th c.	11th c.	9th-11th c.	LIA	LIA-M
C1	1		2					
C1.1			2			1		
C1.2			1	1		2		
C3.1	1							
C3.2					1			1
C4	1							
C5/C6								1
C							2	
CC1	1		2					
AA/CC		1						
BB/CC1							1	
AA/BB/CC	8	2	5	2		8	2	
Padl. Clasp hasp	1							1
Mounted Lock			1			2		
Padlock		1					1	
Lock Unknown							1	

Table 7.18. Push locks in the Viking Age by phase. Finds from the Late Iron Age and with dates reaching into the medieval period to the right.

Considering the finds dated between the 9th and 10th centuries, these do no add much to the impression given by the phase-specific finds. They consist of 25 keys and 22 locks. There are 15 pull keys, ten turn keys, and no push keys. The pull keys are of either 1A or 1B type. The 1A are in majority with 11 finds against four 1B keys. Of the turn keys, four are type 2B, four 2A/2B, one 2C, and the last of indeterminable sub-type. There are eleven pull locks, mainly of A6.2, AA1.2, AA2.2, and AA2.3 types; seven turn locks are all in the BB group, the determinable of which are either BB1.2 or BB2 types; lastly, there is one lock of either AA or CC type, two locks determined by hasps, and one indeterminable padlock.

Moving into the finds dated 1000–1050 AD, these are very few. There are only three keys, all of which are pull keys, two 1A/1B type and one 1A. The locks are three in number, one A6.2 or AA2.2, one AA2.3, and one potential C3.2. The picture changes little when looking at the finds dated between the 10th to 11th centuries, of which there are two pull keys (1A.2) and one push key (3A.2), one pull lock (AA2.2), one push lock (C1.2), and two hasp finds (AA/BB/CC). However, there are late finds reaching into the early medieval period that may add to the developments in the 11th century. There are six keys and five locks that are grouped together, variously dated from the Late Iron Age into the medieval period. The keys consist of one 3B.2 key and three 3C keys dated from 1000–1300 AD, and two 1A.2 keys dated respectively to 750–1100 AD and 800–1350 AD. The 1A.2 keys are known from the 5th century onwards and thus do not contribute significantly to the general picture, but the 3B and 3C keys are new additions. These seem to be late types occurring at the same time as C2, C3, C5, and C6 locks around the early-mid-11th century (see below). The locks within this group include two A6.1 locks dated 550–1350 AD, a C3.2 lock dated 1000–1100 AD, a possible C5 or C6 lock dated 1000–1350 AD, and one clasp hasp for mounted padlock dated 550–1350 AD. Based on the lock type, the A6 locks probably belong to the period before 1050/1100, as I am not aware of such locks occurring further into the medieval period (e.g. the York finds in Ottaway 1992). The C3 and C5/C6 are likely types that occur around the period transition, as with the keys mentioned, with comparison to finds from Hedeby (Westphalen 2002) and York (Ottaway 2002). Notably, the potential C5/C6 find is currently the only tentative indication that fetter locks were in use in the Norwegian area.

The finds generally dated to the Viking Age largely correspond to the established pattern, but may serve to even out some of the marked tendencies. These finds amount to 114 keys and 23 locks. Pull keys are the most numerous with 59 finds. One 1C and one 1D key are the only additions to what has been established. The 1D is the only of its kind in the Norwegian material, and the closest parallels are to the Danish Roman Period finds from

Illerup Ådal (Ilkjær 1993). Whether the Viking Age key was used in a similar way to these, on caskets with sliding lids locked with A2-like locks is unlikely, but not impossible. Considering the documented use of sliding lids for the A3 lock from Oseberg, there is a possibility that other containers may have had locks suited for such a usage. The turn keys are 48 in number, not far behind the pull keys. Most notable are the 34 2B keys, which were so few in the 10th century. While many of these could belong in or derive from the 9th century, these finds may indicate that their decline was not as substantial as the well-dated finds indicate. The push keys are five in number, just as few as in previous phases. Apart from one 3A.2 key, there is a singular key of 3A.3 variant, which were for larger and more elaborate C1 padlocks. This may be a late form. Also, there are three occurrences of the 3F type, not previously documented. These were used for the push-and-slide lock CC2, of which there are no confirmed cases in Norway, but several in Denmark (e.g. Jeppesen and Schwartz 2007; Juhl 2012; Roesdahl 1977). The two variants of this lock were used for caskets of the rectangular form with lifting lids and the square form with bolted lids, respectively. The existence of these keys indicate the presence of such containers in the Norwegian area as well. As for the locks with general Viking Age date, the most notable are two padlocks of respectively A7 and B2 type. The A7 lock has occurred only once before, in the Merovingian Period, in addition to another dated to the Late Iron Age. Thus, this may be primarily a Merovingian or transitional-phase lock, which is supported by the complete lack of 1E keys from the Viking Age. As for the B2 lock, this is a singular form also appearing once in the Norwegian material. Its mechanism is relatable to the turn-motion padlocks from Swedish sites such as Helgö (e.g. Tomtlund 1970), but differs from these in form. Whether it corresponds to these in date is unclear.

Summing up, the amount and variation of the Viking Age finds make it challenging to discern and explain the complex patterns of development. Nevertheless, some general observations may be made. One observation is that the most common lock types in the Viking Age are the mounted ones: the pull locks A6, AA1, and AA2, and the turn locks BB1 and BB2. This is likely due to the predominance of burial finds in which caskets and chests were deposited. Padlocks are seemingly less represented, but the discrepancy may be not be reflective of the distribution and use in society. Still, it is likely that mounted locks were the most common form and that caskets and chests were the things most commonly locked, by both mounted and portable locks. There are keys in the material record of type and size that may indicate a use on doors, but the impression is that if doors were locked at all, it was likely not a common practice in this period and may have been restricted to particular buildings and central settlements (further discussed in 8.1.2).

Another observation is that the keys and locks occurring in the 9th century were compatible and follow the same trajectory. Even though keys outnumber locks, their types match the lock types, which is a strong indication that they were used as functional artefacts. This point is also generally valid for the previous periods. Their eventual uses for other than lock-related purposes will be considered in light of this observation at a later stage. Furthermore, the variation in the mechanisms that appear in the 9th century attests to a craft that seems to have diversified quite rapidly. At the very least, people are getting access to a broader variety of locks and keys than before. Not only are two new locking principles introduced alongside developments in the first, but they all vary in complexity, by numbers of leaves in the springs, size and shape of lock parts, their assembly and orientation on various containers and artefacts.

Generally, the patterns indicate that a seeming arsenal of new locking devices appear alongside existing and developing devices around 800 AD. The impression is of a 'finished set' of mechanisms, which needs some refinement. The developments so visible in the Early Viking Age may have begun earlier, around 700/750 AD. Circulation time is a factor that needs to be accounted for, and it is possible that the mechanisms being deposited in the early to mid-9th century had been around for a generation or two, as in the case of jewellery (e.g. Glørstad and Røstad 2015). If so, the technological development may not have taken place as explosively as the material record suggests. Referring back to the turn keys from the Merovingian Period, it is at least necessary to emphasize that turn locks need not have been exclusive to the Viking Age. Additionally, the push padlocks are examples demonstrating that changes and new additions were appearing up until the end of the period. Thus, the pace of transformations in technology and use may have been more gradual than they appear. The deposition of locks and keys falling significantly towards 1000/1050 AD may have a part to play in how these patterns manifest themselves, and there may be other lock and key forms that have evaded the material record for those reasons. Nevertheless, at present, there is little ground for suspecting that there are unknown mechanisms from this period, apart from those that may have been used in buildings.

Going into such considerations requires further knowledge about the spatial distribution of locks and keys, making it possible to discern not only when, but also where the developments presented here took place and their social background. The spatial investigation will be presented below. First, it is necessary to present the last and main result of this analysis, namely the key and lock typologies.

7.2.2 The typologies

Having studied the occurrence of key and lock types in the Iron Age with as high chronological resolution as possible, the findings are assembled into two respective and compatible typologies for the two categories. These are presented in Figure 7.11 and Figure 7.12 below, visualising the chronological fluctuations of locking mechanisms that occur throughout the first millennium.

One important point that has not been addressed in the above is the possible technological relationships between types and sub-types – whether they are developed from one another or make up independent trajectories. This is a complicated matter to address, as tracing technological 'lineages' like this is not necessarily possible nor fruitful. While the classifications demonstrate functional similarities and differences between the lock and key types, they have no inherent presumption of evolutionary interrelatedness. Following the theoretical perspective of this study, things and how they were made and used were culturally and contextually dependent. Thus, any estimation of how specific lock and key types were related need to consider such conditions. This is discussed in section 7.3.

The order of types in the typologies follow that of the classifications, which are based on technical function and security and with minor regards to chronology. As representations of lock-and-key developments they do not demonstrate an interconnected and unified process of improvement or progress, but simply change, duration, and variation over time. Naturally, the variants are considered as elaborations within a sub-type, and are therefore seen as likely to be related, but the sub-types may or may not be related to each other technologically. Being locks and keys, by all accounts springing from the very first Mesopotamian mechanisms, there is inherently an aspect of technological relatedness. How that family tree looks around the birth of Christ and towards 1000 AD, however, is largely unknown. Thus, the typologies below make up a gathering of mechanisms that may have origins and developments as varied as their forms and as the people that used them.

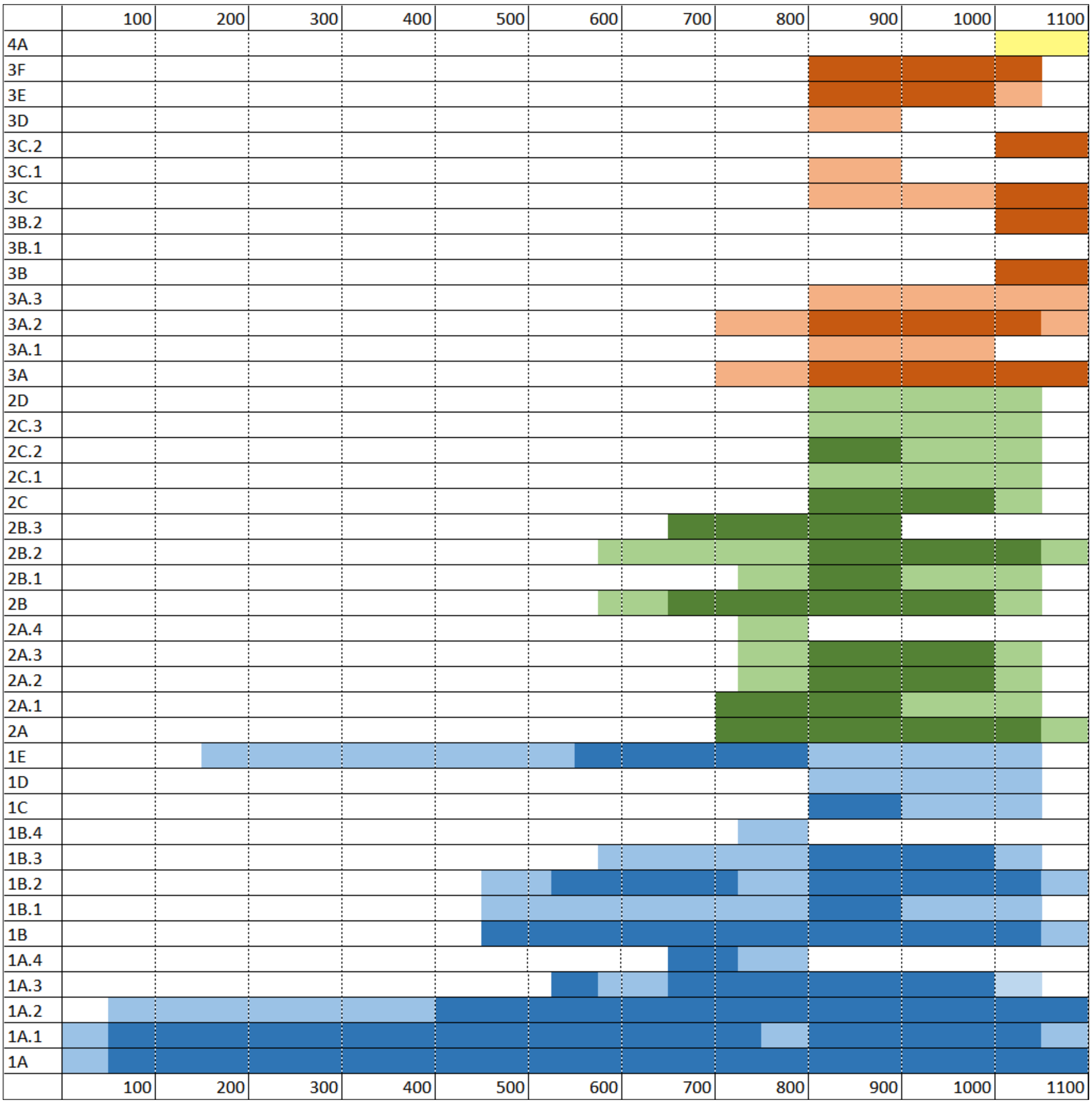


Figure 7.11. Typology of Iron Age keys, specified by sub-types and variants. Blue = Pull keys, main type 1; Green = Turn keys, main type 2, Red = Push keys, main type 3, Yellow = Lift keys, main type 4. Solid colour = confirmed presence; light colour = unconfirmed, potential presence.

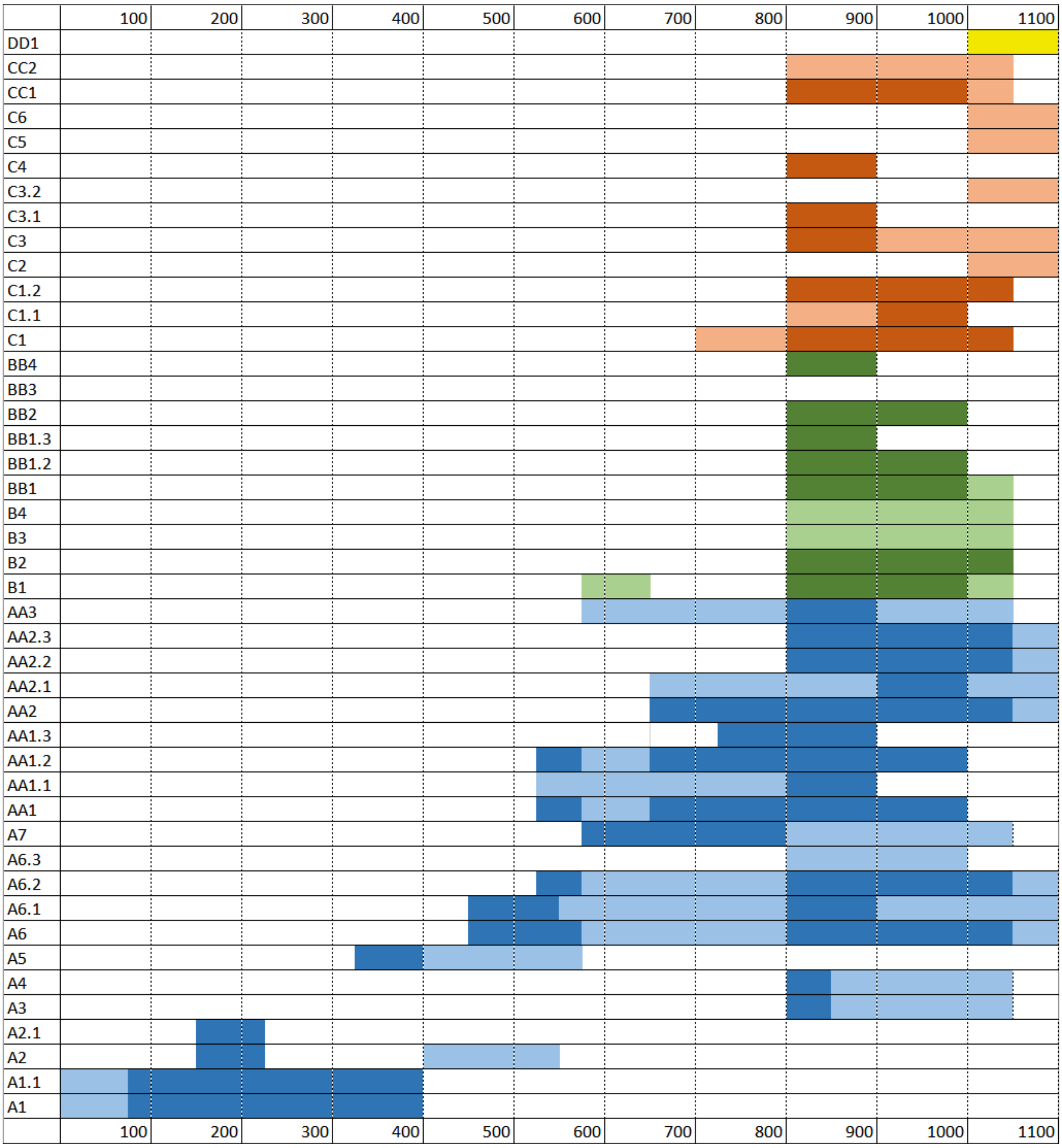


Figure 7.12. Typology of Iron Age locks, specified by sub-types and variants. Blue = Pull locks, main type A; Green = Turn locks, main type B, Red = Push locks, main type C, Yellow = Lift locks, main type D. Solid colour = confirmed presence; light colour = unconfirmed, potential presence.

7.2.3 Spatial distribution of types

Having presented how the developments within locks and keys occur temporally in the Norwegian Iron Age, these aspects will now be investigated spatially. The general spatial patterns from 7.1.2 is here studied at the typological level, seeing where the different types and variants occur, enabling understandings of how locking mechanisms changed and spread during the first millennium.

In the distribution maps, the respective main types are presented with uniform symbols. The pull locks and keys are marked with triangles, the keys with points oriented upwards and the locks with points oriented downwards. The turn locks and keys are marked with squares, oriented straight for the keys and at an angle for the locks. The push locks and keys are marked with pentagons, also here oriented upwards for the keys and downwards for the locks. Within the respective symbols, particular signs are added to differentiate between sub-types and variants. This is to establish a uniform expression of the main types across phases and periods, emphasising both continuity and change.

Important to note, when there are several keys or locks in the same context, their respective symbols will be placed over one another, and not all will be visible. Visibility of symbols is also lower in areas with dense concentration. These aspects must be kept in mind when considering the maps against the following description of the spatial developments.

Roman Period distribution

The geographical distribution of the lock and key types from the Roman period are illustrated in Figure 7.13 below. The Early Roman Period A1.1 locks and 1A keys appear around Lake Mjøsa, on the western side in Østre Toten, Oppland, and on the northern side in Ringsaker, Hedmark, as well as in southern Østfold near Sarpsborg. Both locks and keys appear in the same areas. In the Late Roman Period, however, keys are widely distributed, while locks have a more limited range. The A1 locks still only occur in Eastern Norway, by Lake Mjøsa and at Gran in the Hadeland district of Oppland. This is also where the A5 lock is found. The last lock, of A2.1 type, is from Levanger in Central Norway. Thus, there is a tentative geographical difference between A1 and A5 locks and the A2 lock.

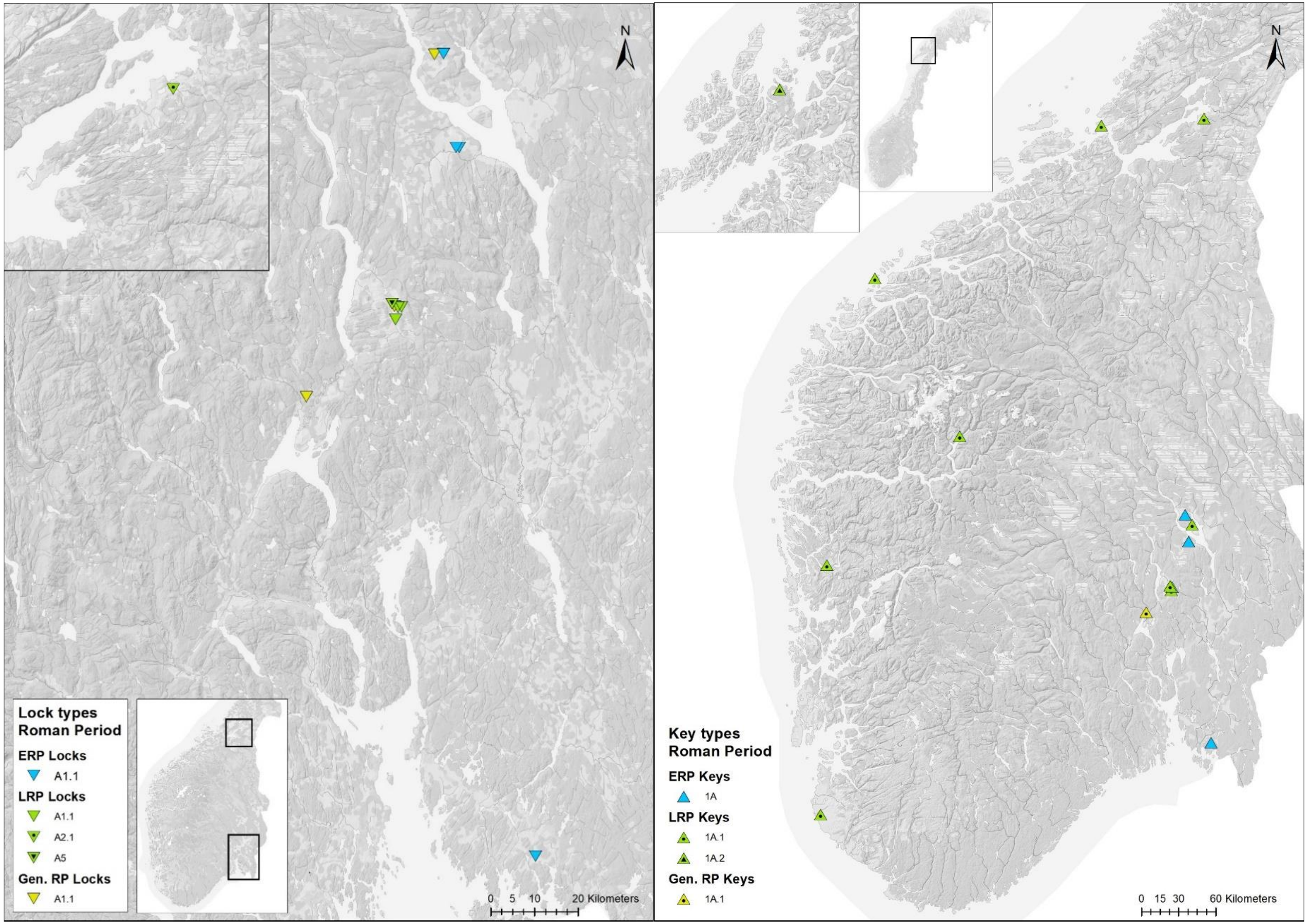


Figure 7.13. Geographical distribution of lock types (left) and key types (right) in the Roman Period (Map: H. L. Berg).

The 1A.1 keys are all found in the southern half of Norway, and outside the concentration in the Eastern region they occur far apart from Ørland and Levanger in Central Norway along the coast to Jæren in Rogaland. Even though no locks have been found with these keys, the closest estimate is that they were used for boxes or caskets with sliding lids, as this is the hitherto only documented form of container. The only 1A.2 key from this period is from Harstad in Northern Norway, and its date is somewhat uncertain – it may belong in the early Migration Period. However, as two-tipped pull keys have been documented on boxes with sliding lids outside Norway (e.g. Juellinge), it may represent the use of an A1.2 or A2.2 lock.

The four A1.1 locks and one 1A.1 key generally dated to the period are all in inland Eastern Norway, including a find in Ringerike north of Lake Tyrifjorden. These strengthen the pattern that this area was the main region where locking took place in the Roman Period, and may be the centre from which these mechanisms reached other areas. The main exception to this tendency is the A2.1 lock, which is somewhat of an anomaly. Apart from the A5 lock, it is the only indication of larger containers being locked at this time, in an area that is outside the main concentration. Furthermore, as will be discussed in 7.3.1, the A2 lock have parallels in different places outside Norway compared to the A1 and A5 types.

Migration Period distribution

In the Migration Period (Figure 7.14), there are no locks in D1, and when they reappear they do so in an entirely new area. Of the three locks from D2a/D2, the two A6.1 locks are from Sogndal in inner Sogn and Borgundøy in Kvinnherad, Hordaland, while the potential A2 keyhole fitting is from Farsund in Aust-Agder. The temporal and geographical distance from the A2 lock from Levanger does present some doubt regarding the classification of this fitting, and it may have belonged to a different lock type, possibly A6.1. The pattern is relatively similar in D2b, where the two A6.2 locks are also from inner Sogn, and the AA2.1 lock is also from Farsund. Thus, not only have the lock types changed from the Roman Period, but they have also moved from Eastern and Central Norway to Western and Southern Norway. The first evidence of locked containers with lifting lids do not appear in the area where locking was first introduced, but across the country in the Sognefjord and Hardangerfjord areas, later to spread southwards to Lista. However, when considering the keys, the patterns outline a broader distribution of locking in the period.

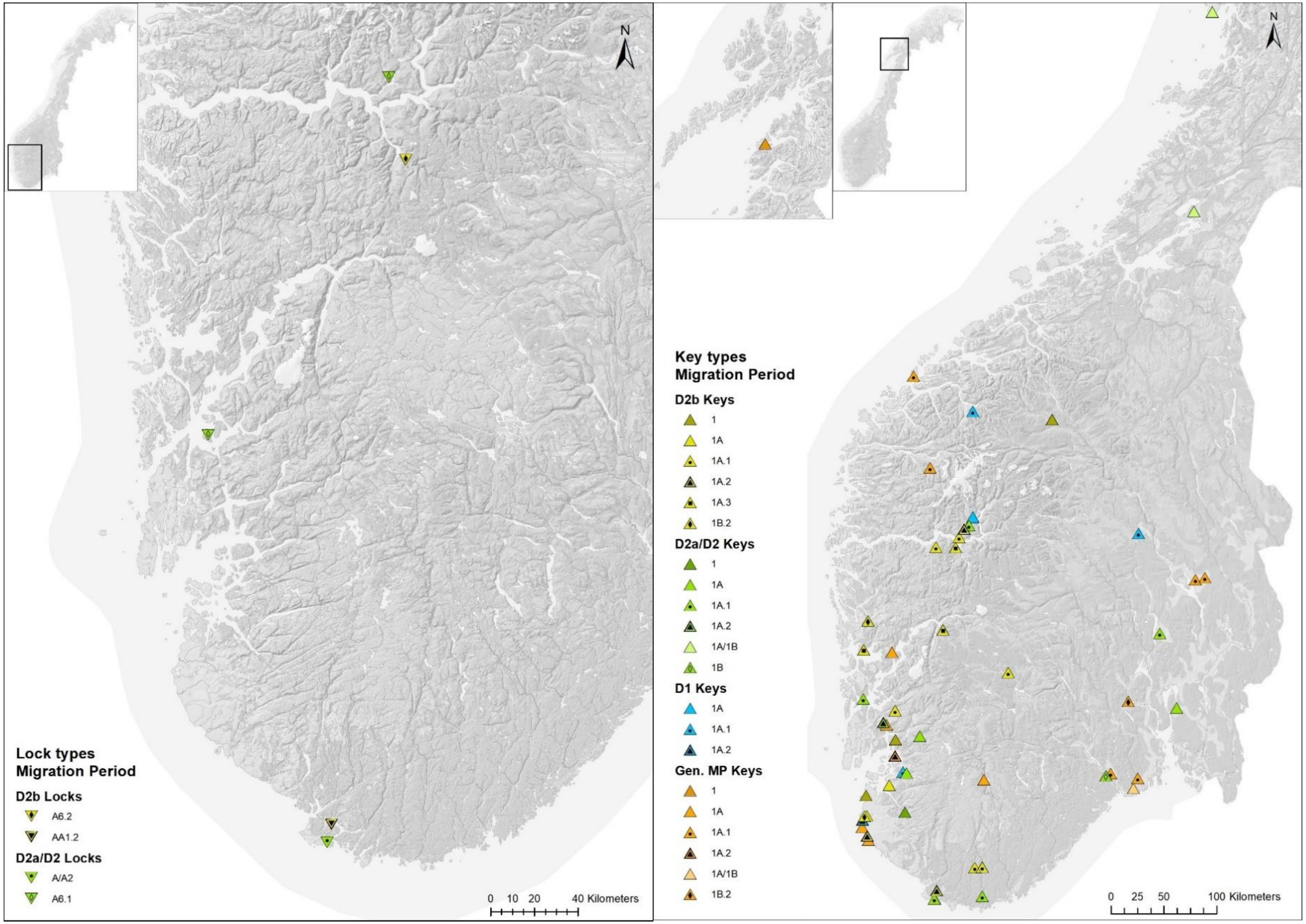


Figure 7.14. Geographical distribution of lock types (left) and key types (right) in the Migration Period (Map: H. L. Berg).

The seven keys from D1 provide some insight into what happens in the Early Migration Period when there are no locks to rely on. The only find in Eastern Norway, a 1A.1 key, is at Gausdal north of the former concentrations at Mjøsa. In the Western region, there is another 1A.1 key in Norddal, Møre og Romsdal, and a 1A.1 and a 1A key in Hafslo, Luster, Sogn og Fjordane – not far from the later lock finds in Sogndal. The other D1 keys are in Rogaland, a 1A.1 key from Hjelmeland and a 1A.2 key at Klepp in Jæren. Based on these early keys, it is possible that A1 or A2 locks for containers with sliding lids were still in use, but they may also have been used for A6 or AA1 locks, which appear in the next phases. Thus, containers with lifting and sliding lids may have coexisted, and the transition to lifting lids may have happened gradually between 400 and 450 AD. The keys could also indicate that the apparent move of locking westwards resembles more of a reduction in Eastern, Central, and Northern Norway from the Late Roman Period.

In D2a, there are a few scattered finds in these three regions. In Southern and Western Norway, keys occur from the coast of Vest-Agder, inner Rogaland to Stord in the outer Hardangerfjord, and in Sogndal. These are mainly 1A and 1A.1 keys, but there is one 1A.2 key in Vindafjord, Rogaland, and the first certain 1B key in Skien, Telemark. As A6.1 locks is present in this phase, it is probable that these keys were used for caskets with lifting lids, and the keys indicate that their use is spreading gradually, particularly in the South-West. This is also the area where the new key forms and variants are appearing, although few in number.

This impression is strengthened when considering the D2b keys. The presence of keys in Eastern, Central, and Northern Norway largely is non-existent. In the West and South, 1A.1 keys are the most widespread, from inner Sogn to outer and southern Hordaland, Jæren in Rogaland, and inland Vest-Agder. The 1A.2 keys seem to spread from Jæren to Farsund as well as northward to Os near Bergen and Ullensvang in Hardanger, and Sogndal in Sogn. The 1A.3 keys are now appearing, in Os and Ullensvang as well as Arna in Hordaland, and at Vik in Sogn. There are two 1B.2 keys, one in Arna, the other at Klepp in Jæren.

Lastly, the distribution of finds generally dated to the period provide information about the general distribution of keys. The 1A type is the most numerous and widely spread type. It occurs from Mandal in Southern Norway and north to Engeløy in Nordland, with sparse distribution in the Sognefjord and Mjøsa areas. A 1B.2 key close to Hokksund, Buskerud, illustrates that this type appears equally in lower Eastern Norway and lower

Western Norway in this period. This type seem to originate in the Late Migration Period, and remains a low-scale type in the following periods.

The finds generally dated to the Early Iron Age do add certain aspects to the patterns established by the periodically dated finds (Figure 7.15). An A1.1 lock is located by Hamar in Hedmark, indicating that it likely belongs in the Roman Period. The lock of either A5 or A6.1 type is located in Gran, Oppland, and could belong to the Roman or the Migration Period depending on the type. The A6.1 lock is from Hafslo, Sogn og Fjordane, which corresponds with the Migration Period locks from the same area. As for the keys, the 1A.1 types occur in Skogn in southern Trøndelag, Ringsaker in Hedmark, Gran in Oppland, and by Sandeid in Rogaland. The key type does not offer a closer date, nor does their material (iron) or their locations. Lastly, the new addition of a 1E key from Hamar corresponds with the occurrence of the A5 lock on the other side of Mjøsa, but it may belong in the Late Iron Age due to its documented use in A7 padlocks.

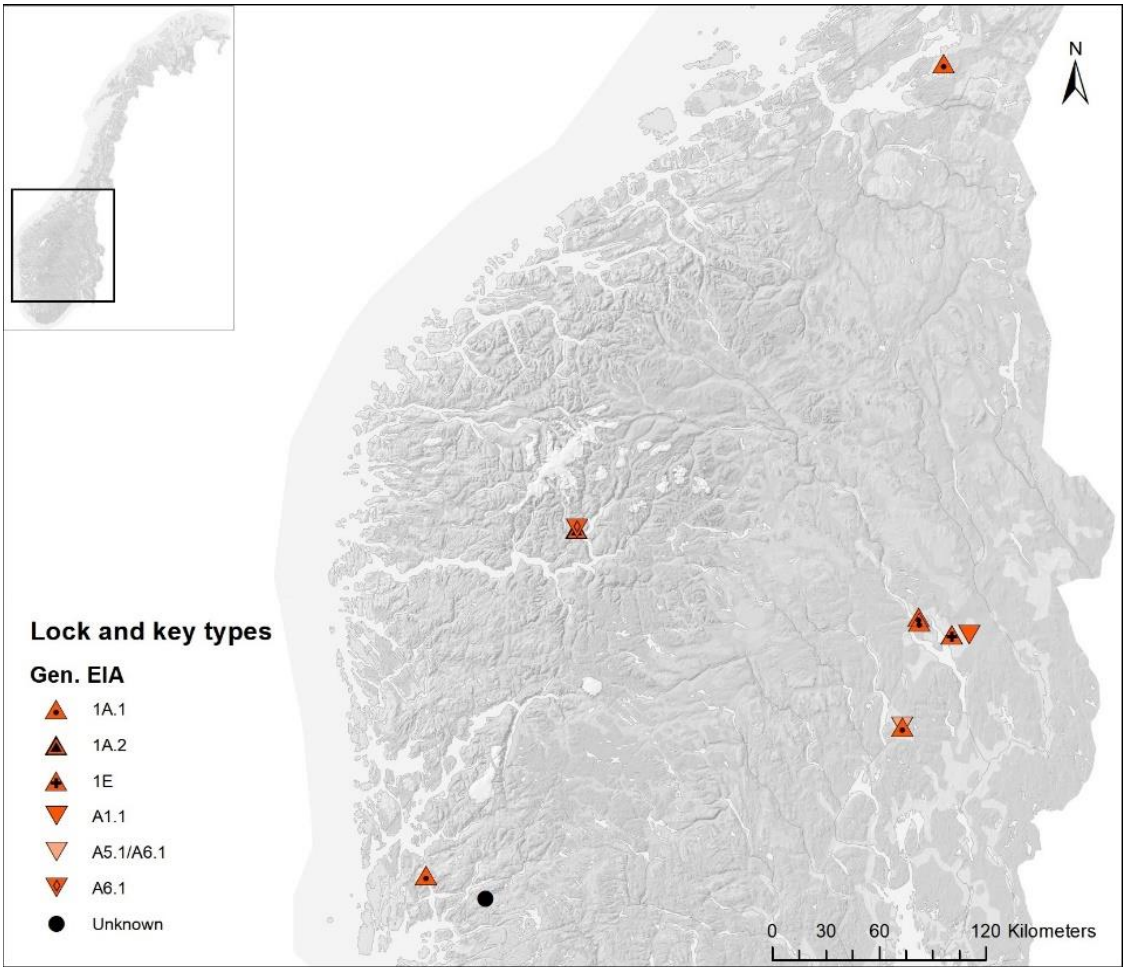


Figure 7.15. Geographical distribution of lock and key types dated generally to the Early Iron Age (Map: H. L. Berg).

Returning to the three-tipped 1A keys that appear in D2b, these deserve further mention because they are the most elaborate variants at this time, they are exclusively in copper alloy, and they appear solely on key chains (i.e. ring brooches or belt buckles) bearing other copper-alloy keys of different variants. There are seven key chains in the material of this period, four of which have 1A.3 keys. The 1A.3 key from Vik is accompanied by two 1A keys. The key chain from Os has two keys, one 1A.3 and one 1A.2 type; the chain from Ullensvang has three keys, one 1A.2 and two 1A.3 type; and the one from Arna has four keys, one pull key of indeterminable sub-type, a 1A.1, a 1A.3, and a 1B.2 key. The other three key chains are from Sogndal in Sogn, Marnardal in Vest-Agder, and Skien in Telemark. The first has a 1A.2 key and a 1B key, the second has two 1A.1 keys and two 1A keys without preserved bits, and the third has three keys, two of 1A.1 type and one 1B key with missing bit. Thus, the two latter may have held keys with more elaborate bits, but this cannot be determined. Based on these finds, northern Hordaland and inner Sogn in particular are notable as areas where complexity in keys is expressed – functionally and in terms of metal – and where the combination of different keys is a pronounced feature. No other 1A.1 keys are found together, and the 1A.2 keys in Rogaland appear alone; as does the key from Sande in Farsund, which is the only key found with the locked casket it belonged to.

Without the Sande find, it would have been natural to regard these copper-alloy keys as non-functional and the key chains as mainly representational (as has been suggested, e.g. Kristoffersen 2000). Nevertheless, keys of 1A.1 and 1A.2 type, both iron and copper alloy, have proven to be functional – as were the 1B keys in all probability and, by extension, 1A.3 ones. Carrying functional keys alongside non-functional keys seems impractical. However, these are burial finds and practicality may not have been an issue. Alternatively, it may be difficult to tell the difference between functional and non-functional keys because it was intended that way, as a form of display. Regardless, although corresponding locks have not been documented for 1A.3 keys, the main impression is that copper-alloy keys were practically applicable. Furthermore, they represent expressions of technological and practical development that occur in mainly Western Norway in the mid-6th century. These features, as has been suggested in the earlier analyses, seem to disappear when moving into the Merovingian Period.

Merovingian Period distribution

As demonstrated in 7.1.2, the spatial distributions of locks and keys change significantly from the Migration to the Merovingian Period. The earlier concentrations in the south-west all but disappear, as do the copper-alloy keys. Still, the lock and key types remain much the same, at least in be beginning (Figure 7.16)

There are no locks from the Early Merovingian Period, only keys. The one lock dated to Phase 2 is from Nordfjordeid in Sogn og Fjordane. It is either an A6.2 or B1 lock, but because it was found with a 1B.2 key, the former is the most likely. The A6 is a type that continued from the Late Migration Period, and can now be confirmed to have been operated by 1B keys, a link that had not previously been established. The finds generally dated to the period include an A7 padlock found alongside its 1E key in lower Hallingdal, Buskerud, and a mounted lock only determined by a hasp, from Stokke in Vestfold. The rest of the locks are dated to the 8th century, Phase 3, or are within the group of transitional finds. Being from Phase 2 (650–725 AD), the A6 lock and its key may also belong to the period after 700 AD, indicating that over a century passed before containers with lifting lids were deposited again. However, due to the key finds prior to 700 AD, this is currently a tentative suggestion.

The AA1.2 lock type that first appeared in D2b occurs in higher numbers after 700 AD, and more broadly: one close to Skien in Telemark, two in Stryn in Sunnmøre, and one possible example far north on Langøya in Vesterålen, Nordland (the CC1 determination is very tentative). There is also a transitional find in Loen, Stryn, which presents the first occurrence of two hasps on such locks. A more complex variant, the AA1.3, is a novelty that appears in Stange south of Hamar in Hedmark in Phase 3. Another new addition occurs in the same phase, but in a different area: an AA2 lock at Byrkjelo in Gloppen, Sogn og Fjordane, close to another hasp find. Because the only locks that used hasps in this period were AA-locks, single hasps are likely to belong to such mechanisms. However, as there are a few turn keys that seem to appear in this period, the possibility that they belong to BB-mechanisms cannot be ruled out. The introduction of AA2 locks in the north-west is strengthened by one transitional find from Lønset in Oppdal, Trøndelag. At Oppdal is also another single hasp find. Although the lock material is sparse, the tendency is that the first appearances of the A6.1 locks in Sogn and outer Hardanger in D2 have been equipped with a double spring and spread northwards along the coast in the Merovingian Period. The AA1 also moved northwards and eastwards, became more elaborated, and was joined by a new AA type in the northwest.

Turning towards the keys, there are several from Phase 1. The 1A keys are still the most distributed; the 1A.1 type occurs in Snillfjord in southern Trøndelag, Vang in Valdres, and at Hamar. The only 1A.2 key from this early phase is from Hovin in Ullensaker, Akershus. The less determinable 1A keys are from Harstad in southern Troms, Sunndal in Nordmøre, and from Løten in Hedmark. The latter was found alongside the anomalous 2B.2 key in iron mentioned above in section 7.1.2, deriving from a double grave in a mound. The date is based on an S-shaped brooch (Røstad 2016, Tab. 4.67), in addition to helmet fragments that may belong to the early 7th century, but their deposition may have occurred later (as discussed by Martens 1969:68–71). Hence, the turn key could represent the earliest sign of turning mechanisms in Norway sometime in the 7th century, or correspond with other turn keys appearing after 700 or around 800 AD.

The Phase 2 keys do not include any turn keys, but pull keys of 1A and 1B type. The 1B.2 key is already mentioned, found alongside the A6.2 lock from Nordfjordeid. The others are three keys from the same context, a 1A.1, a 1A.2 and a 1A.3, likely belonging to a key chain. It is from Skjolden in Luster, inner Sogn, thus the practice of having several keys of different variants has survived in this area from the Migration Period, although now in iron rather than copper alloy.

The keys from 700–800 AD and Phase 3 show that locking was spread somewhat wider than the locks demonstrated. In Northern Norway, a 1A.2 key is from near Hillesøy on Kvaløya in Troms, a 1A key from Tjeldøy in Nordland, and a copper-alloy 2B.3 key from Lurøy. In northern Trøndelag, one 1A key derives from Overhalla, and on the island of Jøa, three keys – one 1A and two other pull keys of indeterminable sub-type – demonstrate that key chains also occur outside Western Norway. Elsewhere, 1A.1 and 1A.2 keys occur in Sunnmøre, inner Sogn, inner Hardanger in the west, and in the east in Eggedal, Buskerud, by Sarpsborg in Østfold, and by Skien and Larvik in Telemark and Vestfold. The one other pull key with elaborate bit is a 1A.4 or 1B.4 key from Stange south of Hamar. One other turn key of copper alloy of either 2A or 2B type derives from Arna by Bergen in Hordaland.

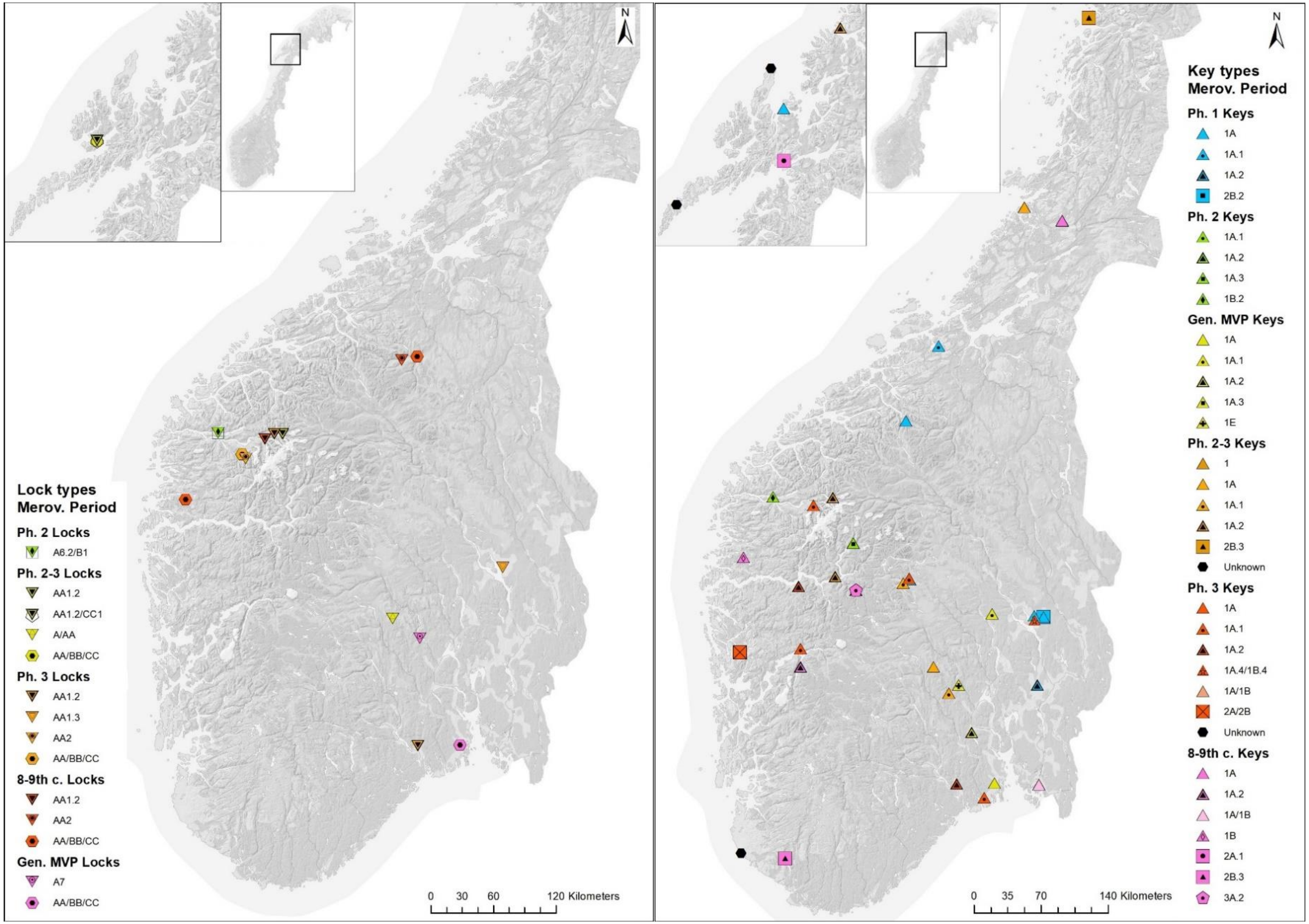


Figure 7.16. Geographical distribution of lock types (left) and key types (right) in the Merovingian Period (Map: H. L. Berg).

In terms of development, one main aspect is that turn keys seem to appear widely, albeit in few numbers. The three keys dated within the period are in iron as well as copper alloy, in the northern, eastern, and western regions. This is also indicated by the transitional finds, where a 2A.1 key is found at Tjeldøy in Nordland and two 2B.3 keys in Lund in Rogaland. While the former corresponds with earlier key finds in the region, the latter is marked in an area with no other finds present, and its date may belong to the period after 800 AD, when Rogaland experienced an influx of finds (see below). Another development is the first appearance of a 3A.2 key, located at Lærdal in Sogn. These keys are more common in the Viking Age, and it cannot be determined whether they and the C1 locks they belonged to appear before this time (discussed by Tomtlund 1972:25–28, 1978:10). Thus, whether or not the Lærdal key belongs in the 8th century cannot be determined. Lastly, 1A and 1B keys continue to be made in iron while copper alloy keys seem to disappear after *c.* 550 AD. This continuity happens alongside new locking mechanisms, again applying existing key types to new locks, now predominantly built with a sliding bolt secured by hasps. These pull-and-slide locks are larger and longer than the pure pull locks, and indicate that the caskets are of a size comparable to or exceeding the D2b Sande casket. This is illustrated by the AA1 locks, which had two hasps rather than one in a find from Loen. Two hasps could be indicative of chest-sized containers. Two hasps are also recorded in a find at Fjaler, Sogn og Fjordane, which was accompanied by a 1B key. Thus, it seems that this key type was used in both A6 and possibly AA1 locks. These finds are transitional, so it is unclear if the use of two hasps (and of chests) occurred before 800 AD. The A6 locks do not appear after Phase 2, but they do appear in the Viking Age.

Viking Age distribution

To present the complexity of the Viking Age finds with high chronological resolution is challenging. The finer details illustrated in the typological analysis indicate that the main differences exist between the Early and the Late Viking Age. Therefore, the finds dated to these sub-periods are studied in separately, with the generally dated finds added later.

Figure 7.17 shows that the large variety in locking mechanisms in this period is equally complex spatially. The broad range of lock variants that appear between 800 and 950 AD do so over large areas, without any one type having clear geographical demarcation. The pull locks are the most widely distributed, and are the dominant type in all regions. They are particularly clustered in the northern part of Western Norway, the southeastern part of

Eastern Norway, and around Jæren in Rogaland. The same is true for the turn locks. The push-locks only occur in the southern half of South Norway.

The areas of southern Nordland, Trøndelag, and Nordmøre show scattered distribution and low variation, with primarily pull locks and one turn lock. However, these encompass three of the four AA1.3 locks, and the only AA1.1 lock, in addition to an A6.2 and a BB1/BB2 lock. Southern Norway have few finds dated to this phase, an A6.2 lock and a CC1 type, the latter of which is rare.

Going more into detail on the three areas of concentration, the A6 lock is most numerous in the west and the majority are of the A6.2 variant. The AA1 locks show the same tendency. The AA2 locks only appear in the northwest and the east; in Gloppen, Stryn, Eid, and inner Sogn, and in Løten, Romerike and the inner Larvik area. The AA3, a novelty in this period, occurs once at Ylmheim by Sogndal. As is well known at this point, the A3 and A4 are from Oseberg in Vestfold. The turn locks are primarily of the turn-and-slide type, the three B1 locks appearing in Vestfold, at Kaupang and Oseberg, and at Byggland, Kviteseid in Telemark. This may be an indication of B1 being a local/regional lock type. This partly applies to type BB2 as well, which occurs at Kaupang, Byggland, and in Nordfjordeid in Sunnmøre. Type BB1 is more broadly distributed, occurring in Sunnmøre, Granvin in Hardanger, Tau in Rogaland, Ullensaker in Akershus, and at Sandefjord and Tønsberg in Vestfold. Type BB1.2 is by far the most common, and the only three-springed variant is from Myklebost in Nordfjordeid. However, as will be demonstrated by the 2B.3 keys, three-springed mechanisms were probably common than the lock material indicates. Those of either BB1 or BB2 type occur also in Sunnmøre around Ørsta, inner Sogn, Voss, lower Ringerike, Hurum, and at Kaupang – in addition to the aforementioned from Selbu, Trøndelag. Lastly, the only BB4 lock in the material is from Gloppen in Nordfjord. The push locks have a southern distribution. Apart from the one CC1 lock from Farsund, south in Vest-Agder, two others are from Suldal in Rogaland and Løten in Hedmark – both of which have their respective 3E keys. There may be other such push-and-slide locks among the undefined hasps, but this is uncertain as none coincide with 3E keys. Generally, these hasps probably belong to AA or BB locks. The other push locks are padlocks; two C1 locks are from Western Norway, at Klepp in Jæren and Vaksdal in Hordaland. The one C3.1 lock is from Tønsberg in Vestfold, and the one C4 lock is from Byggland in Kviteseid, from the same find as the turn locks mentioned above.

The distribution of key types illustrates the same mixed picture as the lock distribution, supporting the impression that different lock mechanisms coexisted in the same areas. They have mainly the same concentrations, but areas with few lock finds are also emphasised, such as Nordmøre, Trøndelag, lower Hedmark, and the eastern mountain valleys in Oppland, Buskerud, and Telemark.

The pull keys are still the most distributed main type. In general, they occur in the same areas as turn keys. This mainly applies to the 1A.2 type, while 1A.1 has some interesting patterns, being little represented where find density is high, such as Sunnmøre, inner Sogn, Jæren, and central Eastern Norway from Mjøsa to Larvik. Here, the 1A.2 and 1B.2 is more prominent, and seemingly, preferred. The 1B.1 is also more limited in distribution, occurring largely in Trøndelag, with one in Stryn, Sunnmøre. As for the newly appearing 1C keys, these are from Kvikne by Tynset in northern Hedmark and Ylmheim in Sogn. The turn keys have an equally broad distribution as the pull keys despite being fewer in number, and appear in areas where pull keys are absent, such as inner Telemark, Buskerud, Hadeland and Romerike, southern Hordaland, Sunnfjord, and Nordland. The most prominent type is the 2B, particularly 2B.3, which is most numerous in areas with high density of finds. The 2A type occurs more scattered and often outside the main concentrations. Those of either 2A or 2B type generally follow the main patterns, with a few outliers. As for type 2C, this is only represented by two finds, one in Sunndal, Nordmøre, and one at Kaupang, Vestfold. Lastly, the push keys outline a southern distribution similar to the locks, but there is also one 3A key from Overhalla in Trøndelag, indicating a wider application of push padlocks than the locks demonstrate. One other 3A key of the second variant is from Bø in Telemark. The three remaining keys are type 3E, two have already been mentioned with their respective CC1 locks, and the last is from Kaupang.

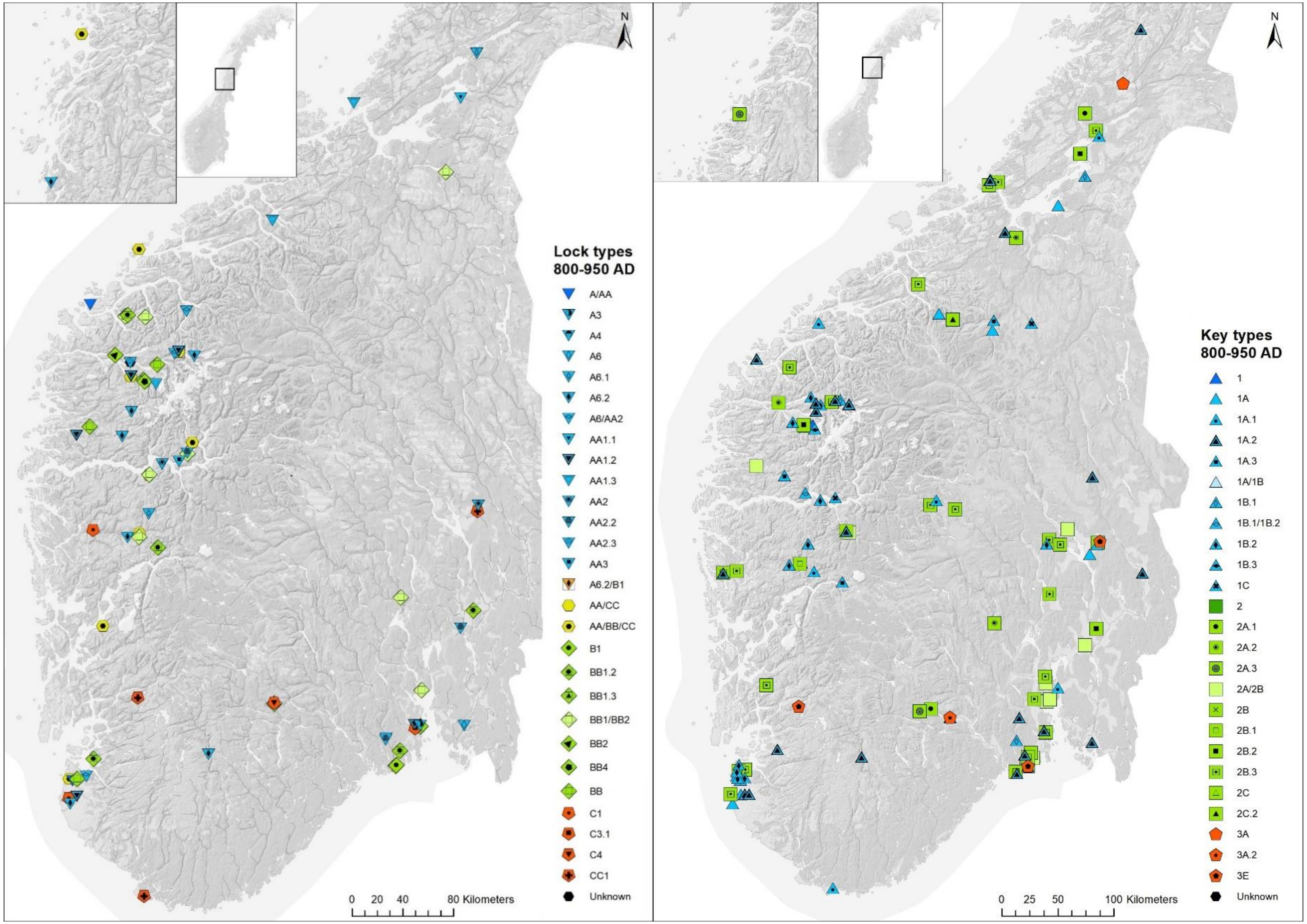


Figure 7.17. Geographical distribution of lock types (left) and key types (right) in the Early Viking Age (Map: H. L. Berg).

Moving on to the Late Viking Ag (Figure 7.18), one issue with the representation is that the majority of finds are dated between 900–1000 AD. This concerns 36 of the 44 locks and 46 of the 59 keys presented. How many of these finds that date before 950 AD – and how much that matters in terms of development – is not clear. Nevertheless, it should be taken into account when considering the distribution.

With this in mind, the distribution of locks is generally just as wide as in the previous phase, but fewer finds give a more sparse impression, which is emphasised when considering locks with dates after 950 AD, none of which occur south of the Sognefjord. The pull locks are mainly of the AA2 type, which is represented in all regions save Northern Norway, which has no finds with dates to this time span. The A6 type are few and only appear in Western Norway: in Sogn, by Bergen, and in Hjelmeland in Rogaland. The A6 locks that may alternatively be AA2 are also from Sogn and Rogaland, as well as Løten in Hedmark. The turn locks are exclusively of the BB group, and the only determined sub-type is BB2, with scattered finds in Oppdal, Nordfjord, Sogn, Sola at Jæren, and in Øvre Eiker. There are no turn locks among the finds dated after 950 AD. Those that are, are of the types A6.2, AA2.2 and AA2.3, C1.1 and C1.2. Thus, there is a possibility that turn locks were mainly in use in the Early Viking Age, and possibly in the 8th century. They are not found in medieval contexts to my knowledge, so it seems clear that they do not continue after the Viking Age. Tentatively, they may have been discontinued during the 10th century, and type BB1 may have gone out of use before the BB2. As for the push locks, the push-and-slide locks are no longer visible in this group of finds. The C1 is the dominant form, both variants occur. These are primarily concentrated in Eastern Norway, in Sør-Odal, Hedmark, at Ringerike by Tyrifjorden, in Vestfold and lower Østfold. There is one C1.2 lock from Sogndal, Western Norway, and a C1 lock from Overhalla, Central Norway. As for finds with dates from 1000–1100/1350 AD, there is one C3.2 lock and a possible C5/C6 fetter lock.

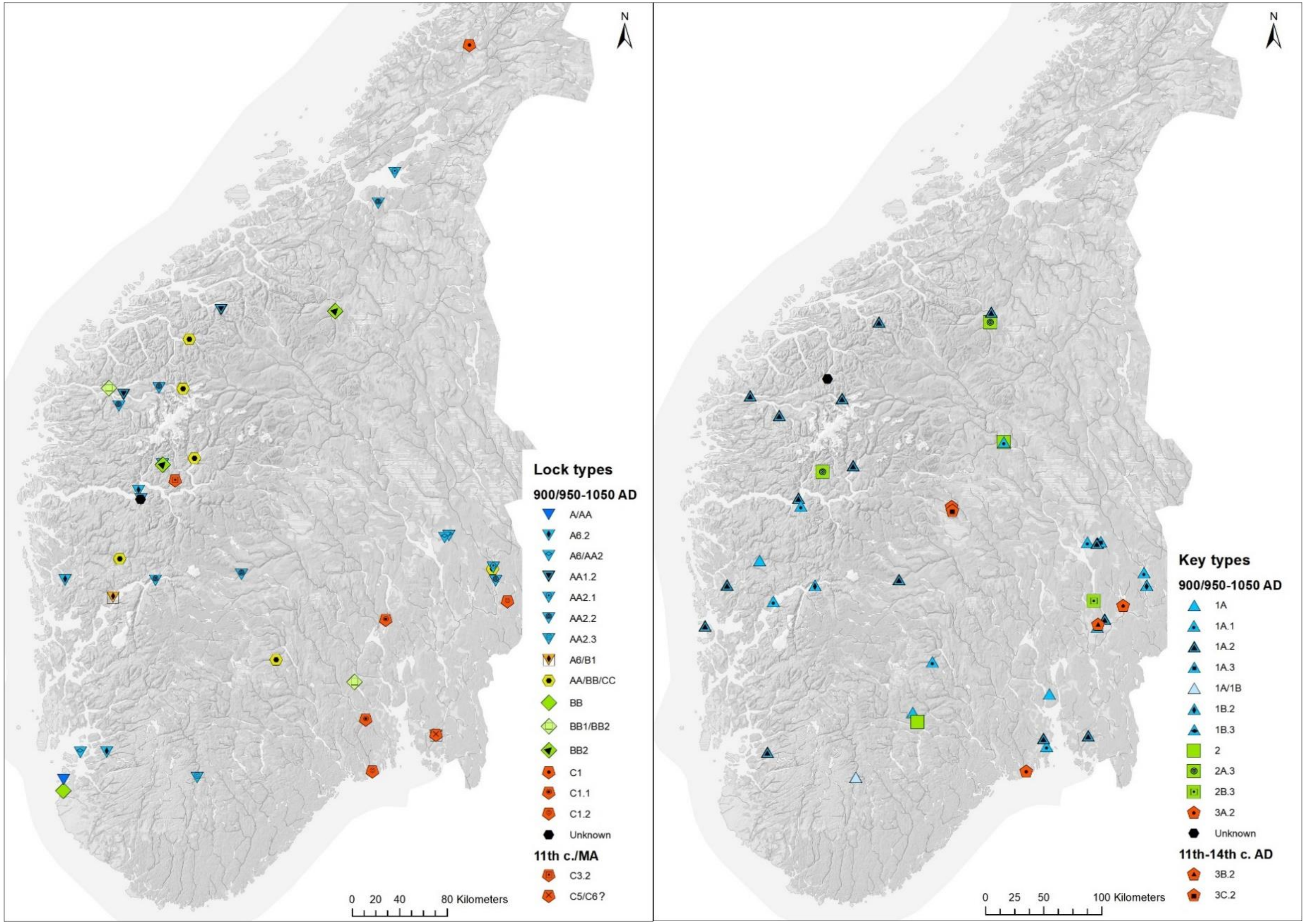


Figure 7.18. Geographical distribution of lock types (left) and key types (right) in the Late Viking Age (Map: H. L. Berg).

As for the keys, for the first time they have a more limited distribution compared to the locks. The northernmost finds are at Oppdal, far south in Trøndelag. The keys are dominant in Eastern and Western Norway, and the majority of these are pull keys. The 1A sub-type is widely spread, and 1A.2 appears to be the most common followed by 1A.1 keys. Variant 1A.3 is known from only two finds in Eastern Norway, at Løten and Jessheim. The 1B keys are markedly fewer than 1A, but are also found in the eastern and western regions, at Grue in Hedmark, Luster in Sogn, and Bu in Hardanger. There are no 1C keys within these finds, but the type appears in the medieval period, so they are unlikely to have disappeared. These later keys were used in door locks (see 6.3.1), which could possibly explain their absence in this burial-dominated material. However, this remains a hypothesis at present. The push keys are only used for padlocks, in correspondence with the absence of CC1 locks. The keys dated before 1050 AD are type 3A.2 for C1.2 locks, and appear in at Kaupang in Larvik and Sør-Odal in Hedmark. The latter was found alongside its lock, and the eastern distribution largely corresponds with the distribution of locks. Among the 11th to 14th–century keys, there are three 3C keys from Vestre Slidre in Oppland, and a 3B.2 key from Kisa in Akershus. The C3 and C5/C6 locks that would have been operated by 3C keys are of equally late date, thus it cannot be determined that these were used in Norway in the Viking Age, although similar locks have been found in 10th and 11th century contexts elsewhere, such as at Trelleborg and Hedeby. The same applies to the C2 locks operated by 3B keys, which in addition to Hedeby have been found in Finland and York (see 6.3). Thus, these may have entered Norway around or after 1050 AD, and represent a development taking place largely after the Viking Age, at least for the Norwegian area.

Lastly, the finds generally dated to the Viking Age are considered against the phase-related finds (Figure 7.19). The distributions indicate that the majority of these belong in the Early Viking Age, although it cannot be determined. The locks are mainly found in Eastern Norway, with sparse occurrences in the other regions. Pull locks is the only main type occurring outside Eastern Norway, in Stordal, Sunnmøre, at Oppdal and Ørland in Trøndelag, and Andøy in Nordland. The possible exceptions are hasp finds that may indicate BB or CC locks, which are found also at Ørland and in Suldal, Rogaland. In Eastern Norway hasps are primarily found in Vestfold, as well as Valdres and Hadeland in Oppland. Pull locks are found in the Romerike district in Akershus, Sandefjord in Vestfold, and Nome in Telemark. The only turn lock is a padlock of B2 type, appearing in Stange near Hamar, Hedmark. The push locks are all C1 padlocks, found at Romerike and Bø in Telemark.

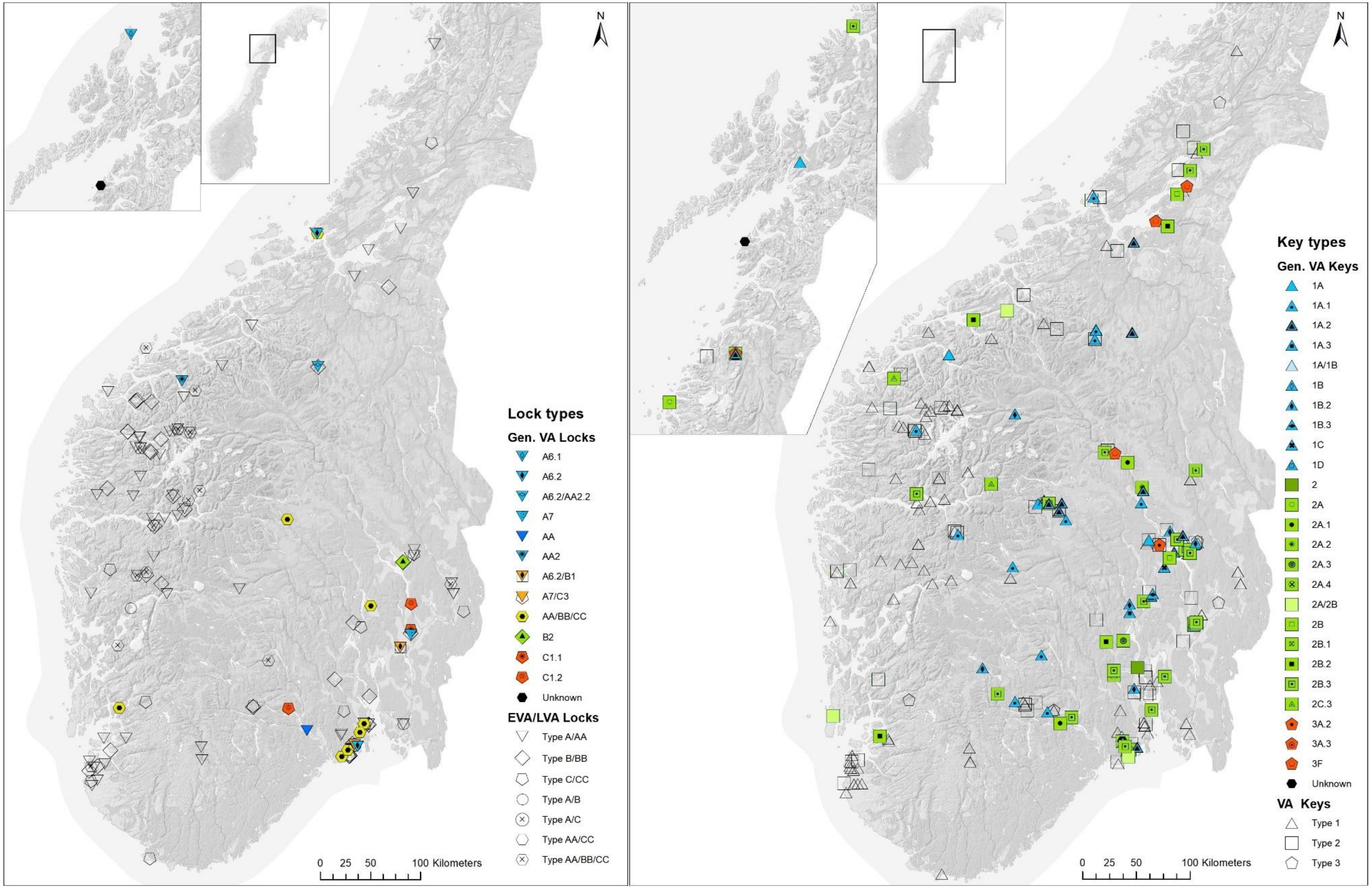


Figure 7.19. Geographical distribution of lock types (left) and key types (right) with general dates to the Viking Age (Map: H. L. Berg).

The keys add considerable information, and as pointed out in 7.1.2, the dominance of finds in Western Norway compared to Eastern and Central Norway is corrected somewhat by these generally dated finds. Pull keys and turn keys are just as common in the eastern region as in the northwest, and have a stronger presence in Trøndelag. The 1A.1 and 1A.2 keys are also the most widely distributed. 1A.3 keys are few and appear in Valdres and Ringerike, Oppland. The 1B keys make a stronger impression, appearing from Mjøsa down to Larvik, and in the mountain areas of Lesja in Oppland and Vinje in Telemark. The 1C makes another appearance, this time in Østre Toten; the type appeared in northern Hedmark and inner Sogn in the Early Viking Age. The 1D type with the characteristic horse shoe-shaped bit makes its first and only appearance at Løten. As for the turn keys, these have a stronger presence than indicated by the more narrowly dated finds, indicating a dominance in Eastern Norway. The 2A type is almost exclusively found here, with one exception from Rødøy in Nordland (one 2A key from nearby Lurøy was among the early finds). The 2B type is widely distributed, appearing in all regions save Southern Norway, while 2C only appears in the northern part of Western Norway. The push keys are few in number and have a more scattered distribution. There are two 3A keys, a 3A.2 from Gjøvik in Toten and a 3A.3 from Beiarn in Nordland, as well as three 3F keys respectively from Hundorp in Oppland and Stjørdal and Levanger in Trøndelag. The former two are for C1 padlocks and the latter are for CC2 locks, of which there are none in the material. The closest parallels to the 3F keys are from Fyrkat in Denmark, with suggested dates to the 10th century, possibly the latter half (Roesdahl 1977:151). A similar date may be suggested for these, indicating that push-and-slide locks were used up to *c.* 1000 AD. As the use of CC1 locks cannot be securely placed after 950 AD, it may be that they represent a move from one type to the other. However, the occurrences of CC1 and CC2 do not overlap spatially, and it cannot be established here that one type developed from the other. Where and how this development took place, and if they were introduced from elsewhere will be addressed further in the next section

Summing up, the finds from the Viking Age outline that variation in technological development, application, and deposition of locking devices flourished from 800 to 950 AD. Correlated with the map of agricultural zones in Figure 7.1, the majority of agrarian areas in Norway, in addition to select outfield areas, are represented by finds in this period. Rather than a spatial shift in distribution, such as the transition from the Late Migration Period to the Early Merovingian Period, the shift in the Viking Age is mainly temporal from the early to the late phase, and concerns the Norwegian area in general. The finds are fewer and more scattered in Late Viking Age, but are largely within the maximum of the distribution established before 950 AD. This strengthens the presented view that the reduction in lock and key finds is primarily one of changing burial practices.

That specific lock and key types were spatially dependent cannot be firmly established. Northern and Southern Norway display a lower degree of variation than the three other regions, but they also have fewer finds. There are hints that there may have been local or regional types and variants, such as B1, but the material generally does not allow for any firm determinations to be made. A main observation is that mounted locks for containers such as caskets and chests, predominantly pull locks and turn locks, were very widely distributed and constituted the most common form of locking. Although the container constructions and mechanisms changed over time, mounted pull locks were the dominant main type in the previous periods and appear to have retained that position in the Viking Age, despite the introduction of turning and pushing mechanisms in mounted and portable form. I consider this a strong indication that the quantitative increase and spatial distribution in this period are indicative of increased deposition as well as increased use of locking devices in society.

If the increase had constituted existing lock and key types, the widened distribution could have been considered as mirroring a more widely applied custom of putting keys and locks in burials. The appearance of a range of new mechanisms occurring almost as widespread as the existing ones indicates that there were generally more devices in circulation, which were supplementary rather than replacements for devices that were established in society. The practice seems no longer to be concentrated to particular communities in particular regions or areas, but to be relatively commonplace and familiar to most of the population. The agricultural areas of Norway (Figure 7.1) were settled well before the Viking Age (Øye 2002:234), and that locking devices appear widely represented in this period suggests that locking was present in most places where people lived and had become a socially established and diverse technology. Thus, the tendency is that locking became increasingly embedded into the social fabric and that people were getting increasingly entangled with locks and keys in their daily lives.

To understand the reasons why locking devices were diversified and gradually embedded into society from the Roman Period to the Viking Age involves expanding the analytical perspective in different directions. One direction is to consider the individuals that locking devices were related to, for whom they performed their tasks, and the social context of their effectiveness. This is explored contextually in Chapter 8. The other direction is to explore what large-scale conditions may have enabled the technological developments to manifest in the forms, times, and places observed; what factors that allowed certain lockable things and locking mechanisms to be present and effective. One factor here is the craft of locksmithing and what physical and social access people had to particular craft knowledges and products; another factor is contact and mobility, the avenues that people, knowledge, and materials travelled by to appear at particular times and places. Addressing these factors involves comparing the types and their developments in Norway to Scandinavian and European materials to gain an overview of the craft-related and social possibilities and limitations for locking in the Iron Age. This is the topic for the next section, where the type distribution will be addressed in terms of technological development within and outside Norway, long-distance contacts, and questions of local-regional production versus imported knowledge, artefacts, and human mobility.

7.3 Technological transformations: contact, import, and innovation

The typological and spatial analyses presented in this chapter demonstrates where locks and keys were deposited and where they likely were used. One question that presents itself in this relation is where the different locks and keys came from. This is not really one question, but several separate questions concerned with the origin of production knowledge versus the place of production and later distribution, of contact networks and movement of people and things, of trade and import, and foreign versus indigenous innovation. Determining where a lock and key was produced, where the knowledge of making and using said lock and key derived from, and under which conditions these moved, is generally challenging or impossible at present.

One reason for this is that lock and key assemblages outside Norway and Scandinavia have not, as far as I have seen, been subjected to detailed study (if at all) or published in an easily available manner. How the locking devices are connected technologically is largely not known even within the Nordic area, as there have been few diachronic, comparative analyses of locks and keys performed at the time of writing (as stated in Chapter 2). Lock and key production evidence is also sparse, as mainly casting and brazing processes leave material remains. The main contributions have come in recent years, with identification of copper-alloy key and padlock manufacture at select Late Iron Age sites (e.g. Croix et al. 2019; Gustafsson 2003, 2005, 2013; Holback 1999; Pedersen 2016; Söderberg 2008, 2014).

This study does not aim to divulge the deep origins of Iron Age locking mechanisms, but to understand the conditions of their use and significance within the Norwegian Iron Age societies. Only general outlines will be suggested at present, as they may inform understandings of locking practices and the people who performed them. Therefore, this question of 'where locks and keys come from' will not be answered in full in the following, and maybe not satisfactorily for those interested in the larger developments of past locking technology. For this to be possible, much work will have to be done, both on the material studied here and elsewhere, which falls outside the bounds of this work. This more brief overview connects the types and their chronologies to each other and to finds from elsewhere, providing the developments in Norway with a wider social and historical context, which can be supplemented with results from contextual investigations and interpretations of locking practices.

7.3.1 Roman Period transformations: locking introduced

Beginning with the beginning, how and from where locking was introduced to Scandinavia is a matter that has been discussed but not resolved (Müller 1911:26; Tomtlund 1972:1). Because they first appear in the Roman Period, one could presume that the mechanisms, or knowledge of their making, derived from Roman areas through early contact networks. However, even though these locking mechanisms may have been inspired from Roman culture, Germanic areas are more likely candidates for the introduction of the earliest locks and keys to Scandinavia, as suggested in the following.

There is mainly one key sub-type and variant in Norway in the Roman Period – the 1A.1, with a possible presence of 1A.2. The 1A.1 stays uniform throughout this period, where individuality is achieved by varying its hook proportions and tip shape. The increase from one to two tips in the bit around 400 AD is one sign of diversification and security, and may be related to A1.2 locks. This variant is known from the Early Roman Period in Denmark (Juellinge, Müller 1911), but is not confirmed in the Late Roman Period in Scandinavia. The 1A.2 key may also be indicative of A2 locks, which is a later type along with A5.

It is difficult to regard the lock types A1, A2, and A5 as connected in terms of technological development. The A2 may have been inspired by the A1, as both were constructed and used on containers with sliding lids, but their respective lock spring forms are very different. The A2 type is only represented by one relatively secure find, and is seemingly exclusive to Gotland and parts of southeastern Sweden (Almgren 1914; Kokowski 1997, Abb. 36), indicating a development that happened outside Norway. The A1 locks have parallels to a high number of lock and key finds from Germania, specifically current-day Poland, northeastern Germany, and partly western Ukraine – as well as the Danish islands of Fyn, Zealand, Lolland-Falster, and Bornholm (Kokowski 1997, Abb. 24; Müller 1911:24; Vedel 1886, Fig. 209). The Germanic areas have far more finds than the Scandinavian area at this time (*c.* 360 find contexts), and the widest distribution is within contexts interpreted as Przeworsk, Luboszyce, and Wielbark cultures (*c.* 280, 50, and 40 finds, respectively), with dates that are contemporary and slightly earlier than in Scandinavia (Kokowski 1997:17–27). At present, I consider these areas the most likely direct or indirect origins of the A1 locks and 1A keys in Norway.

Such a direction of influence is supported by the singular A5 lock, the only parallels to which I have found in northeastern Germany, the Czech Republic, and western Poland (Kokowski 1999, Abb. 2b and 35; Schultz 1927; Tomtlund 1972:9). Similarly, I have yet to discover any mechanism similar to A2 or A5 in Roman-area collections. 1A type keys, however, have been identified in La Tène and Hallstatt sites in Central Europe (Jacobi 1974; Tomtlund 1972:1, with references) and precede all the lock types studied here – the earliest metal keys possibly being Ancient Greek (Jacobi 1930). At the La Tène oppidum of Manching, Germany, several different lock and key types have been documented, including the 1A and A1 (Jacobi 1974). Gerhard Jacobi (1974, Abb. 43–44) argues that they were used for doors and chests rather than boxes. Manching was a Celtic settlement from the 3rd century BC to *c.* 50 BC, with Roman activity from the 1st century AD (Matešic and Sommer 2015:155). The 1A keys and A1 locks in Central Europe and Scandinavia are contemporary with the Roman activity at Manching, and Jacobi's (1974:164) only references to other such finds are from Germanic Roman Period graves in Central Europe, in the same areas as covered by Kokowski. Thus, it is unclear whether or not the A1 lock has Celtic or Roman origins. A1 locks are not represented in overviews of Roman mechanisms that I have come across, so it is possible that this type was characteristic of the peoples living outside the Empire and continued to be used in Germania until the 4th century. Thus, it is unlikely that these locks and keys came to Scandinavia from the Roman cultural sphere. They may instead derive from contact with mainly Germanic peoples with locking devices that were different from those used in the neighbouring Empire. A similar perspective has, indeed, been indicated by Müller (1911:26, with references), who considered the A1 mechanisms occurring in Nordic and Germanic areas as a transmission from Pre-Roman times, noting that Roman use of such locks was not known. This is also close to Tomtlund's (1972:7) assertion that the Germanic mechanisms were indigenous constructions imitating Roman locks.

Thus, the general impression is that 1A keys, and A1 and A5 locks constitute an inherently Germanic form of locking, and their presence in Scandinavia may be considered part of a large-scale development that takes place across Germania. The interaction that brought the devices to Norway may have been through exchange of artefacts and knowledge, as well as mobility of people from those areas to Norway – and vice versa. The exchange may have gone through Skagerrak and Kattegat, judging from the early occurrences in Eastern Denmark, in accordance with proposed trading routes for this period (Eggers 1951; Gundersen 2010). The earliest A1 and later A5 mechanisms were introduced to low-land Eastern Norway (see 7.2.3), which had access to Denmark and the Baltic via the Oslofjord and the large inland water systems. In the Late Roman Period, the locks are still in the same area – apart from the A2.1 type in Trøndelag – while 1A keys appear scattered across Norway, largely along the coast. Considering the predominance of A1 locks, the keys were probably used these locks, but a wider use of A2 cannot be ruled out. The A2 locks are characteristic for Gotland, occurring in periods IV:2 and V:1, i.e. 100–300 AD (Almgren 1914; Almgren and Nerman 1923). Almgren (1914:40) emphasised that these locks were of different construction than locks from Denmark and Northern Germany, and Tomtlund (1972:9) considered them indigenous to Gotland. If so, this may be the origin of the lock from Trøndelag. Notably, there are no A1 locks in the material presented by Almgren, and the two types seem to have had parallel but different distributions.

Based on the singularity in mechanisms and stylistic expression, lock and key production in Gotland seems to have been organised locally in this period. Copper alloy keys and locks were made in period V (i.e. 200–400 AD, Tomtlund 1972:10), while this did not occur in Norway until the Late Migration Period. The one copper alloy key from C3 (B4643c, mentioned in 7.2.1) may have been an early occurrence of non-ferrous production or import. The other Norwegian keys are all iron, which also seems to be the case for the finds from Germany and Poland (Kokowski 1997). The later A1 locks in Norway were probably not made locally or regionally. Had production started in Eastern Norway or elsewhere, one could have expected a higher number and density of finds. If they were imports, the relative continuity of few and scattered finds suggest that the contact to the southeast was upheld throughout the period. They may have been distributed through a centre in Eastern Norway, or the contacts themselves may have spread to other centres in

Norway in the Late Roman Period. The latter is a strong possibility, as the finds of this period coincide very well with identified elite centres (e.g. Reiersen 2017, Fig. 8.1). Being exclusively burial finds, one possibility is that they were introduced during brief intervals, but were deposited at different rates. Other scenarios are possible, and I wish to highlight that there are still many uncertainties regarding these early developments.

7.3.2 Migration Period transformations

The initial introduction of locking devices was ostensibly a slow one, in the form of small lockable boxes that found their way to people living in Eastern Norway and then further west and north. Subsequently, the first signs of change in the technology and its distribution occurs around the middle of the Migration Period and towards its end.

The Roman Period mechanisms and containers disappear sometime in the early 5th century. There is a lacunae until *c.* 450 AD, when the A6 locks appear, now on caskets with lifting lids – or possibly on sliding lids (see below). These may have been made locally or introduced from elsewhere to fill the need for lockable containers. I have not identified any parallels to A6 locks outside Norway from the same period, so there are currently not sufficient grounds for discussing whether this type is unique or endemic to Norway in the Late Migration Period.

Based on the Gotlandic material gathered by Almgren and Nerman (1923, 1969), Tomtlund (1972:11) has argued that containers with sliding lids locked by A2 were used in Gotland throughout the Migration Period. In the Merovingian Period, they seem to have been replaced by caskets with lifting lids on hinges (cf. Nerman 1969). From the comparisons presented here, this development may have happened differently and sooner in Norway. While the A2 continued in Gotland, the A6 seems to have been established in Norway, mainly in the Western region. The impression is that the idea of caskets with lifting lids was conceived or introduced here in the 5th century. This new constructional and operational principle warranted a new way of locking – a task that the A6 lock was designed to perform. However, it is theoretically possible that these earliest versions were arranged horizontally underneath a sliding lid, much like a cross-over of the A2 and A5 locks. In that case, the sliding lid was used for longer than first assumed and similar to the Gotlandic situation. If so, the first unequivocal evidence of lifting lids is the AA1.2 lock from D2b. Additionally, as 1A.1 and 1A.2 keys dated to D1 (400–450 AD) have no preserved lock counterpart, it may be that A1 or even A2 were still used before or parallel to this development.

There are also two other, linked developments that occur around 450 AD: the appearance of copper-alloy 1A and 1B keys and the probable establishment of lock and key production in Norway. Most of the keys are decorated with punched double semi-circles and incised lines; this differs from the decoration found in Gotlandic keys (Nerman 1935), keys from Central Europe (Steuer 1982) and Great Britain (Evison 1987). While stylistically closer, they also differ from keys in Denmark and mainland Sweden, judging by finds available in online museum collection databases. Rather, the motifs correspond to those of other artefacts found in Norway, such as tweezers, bracteates, cruciform brooches, relief brooches, and shield-shaped brooches (e.g. Axboe 2007; Drageset 2008; Kristoffersen 2000), and select bucket-shaped pots (e.g. C1309 in Kristoffersen and Magnus 2010). The punching technique is a unifying trait, and my impression is that these keys – and consequently iron keys and the locks they operated – were produced domestically. They may even have been produced in relation to the above-mentioned artefact categories.

A possible area for such production is Western Norway, which I suggest based on the distribution of finds presented earlier. The concentrations in this period changed from east to west around and after 450 AD, and subsequently disappeared in the western region around 550 AD, coinciding with the discontinuation of decorated copper-alloy keys. The area between the Sognefjord and Jæren is distinguished, as locks and the majority of copper-alloy keys are found here. Judging from the patterns, production may have been centred in Rogaland and in the inner Sogn district. This is supported by Kristoffersen and Magnus'(2015) identification of local pottery and metalworking workshops in Sogn, which illustrates that the tradition, social organisation, and craft knowledge basis necessary to produce these locks and keys were present in select communities. The disappearance of the copper alloy keys also coincides with similar developments in bucket-shaped pottery and metalworking in southwestern Norway. A collapse in both ceramic and metallurgical craft at this time, as suggested by Per Ditlef Fredriksen et al. (2014), could indicate that locksmithing and these crafts were closely connected. Outside Western Norway, there may have been lock and key production in Vest-Agder in Southern Norway, around Mjøsa/Hadeland, and Larvik/Grenland in Eastern Norway. The continuation and further development in these areas in the Merovingian Period may indicate that these craft communities were not subjected to the same transformative processes.

One potential explanation for the shift towards a new container form and locking mechanism, and local-regional production around 450 AD may be that contacts with the southeast and the Baltic were broken off. New networks would have been made, which may have inspired craft innovation and/or brought new knowledge of container construction and lock and key production. This may also be the case for the second shift around 550 AD, because the declining key and lock forms were followed by another stage of development. This development may have started at the end of the Migration Period, judging by the AA1.2 lock and 1A.2 key from Sande. The lock represents the first documented use of a hasp in a locking mechanism, and the container is the potentially largest lockable item at this time. Whether it arrived through similar or renewed contact networks or was a result of indigenous innovation cannot be determined at present. Regardless, it represents an indication of the developments that were to come, where locks with hasps would dominate the material for the next 400–500 years.

7.3.3 Merovingian Period transformations

One of the main developments that occur around 550 AD is that the decorated copper-alloy pull keys disappear, alongside the other artefacts with similar stylistic expressions. This development is coupled with a marked reduction in keys and an absence of locks until *c.* 650 AD. The disappearance of these artefacts has been linked to the 'dust veil event' of 536 AD, to social turmoil due to socio-political changes, mass-migrations, agricultural failure, settlement abandonment, and collapse of social structures (e.g. Axboe 1999; Gräslund and Price 2012; Löwenborg 2012). It appears that lock and key production and deposition were also affected by these processes, although they did not collapse entirely, but changed structure and concentration.

While the material and decorative expressions were lost or transformed, the key and lock types continued into the Merovingian Period, mainly in the northern part of Western Norway and in Eastern Norway rather than the previous centre in the southwest. The technological continuity particularly concerns 1A keys, while 1B keys do not reappear until the transitional phase. Moreover, A6 locks seem to disappear towards 650 AD, and cannot be securely identified until the Viking Age. The connection between 1B and A6 is strengthened further by this correlated pattern, but why these had an approximately 200-year long hiatus is not known. In their potential absence, the pull-and-slide locks became preferred mechanisms, with elaborations of the AA1 and introduction of AA2.

In terms of development, AA1 and AA2 may have been respectively inspired by A2 and A6, as they implement the functional principles and the existing lock cover and spring forms into sliding-bolt mechanisms. As explained in the classification, the bolt of the former adopts the task of the lock cover, and the bolt of the latter the task of the spring. Tomtlund (1972:13) has described the AA2 type as being a Roman Period functional creation, but it is unclear if he meant that they were inspired from locks in the Romanised cultural sphere further south in Europe or that they were local developments of earlier mechanisms. If the A2 and the A6 were indigenous to Scandinavia, one might assume that the AA1 and AA2 also were Scandinavian developments. However, as will be discussed in more detail, this may not be as clear-cut.

Gotland has the most available comparative material for this period as well, in the study by Nerman (1969), which also Tomtlund (1972) has discussed. The keys presented are exclusively pull keys, which generally corresponds with the Norwegian tendency, but the Gotlandic technology seem to undergo a transformation that does not have a counterpart in Norway. Firstly, copper-alloy pull keys continue in Gotland until at least 750 AD. Secondly, from Nerman's period VII:1 to VII:3 (550–700 AD), the bit and hook become more elaborate, with decoration covering the hooks in a way that could prevent them from entering and operating a lock – a development Tomtlund (1972:11, Fig. 4, nos. 5–9) considers a move into non-functional artefacts. This is because the elaboration of hooks is followed by fused tipped bits in period VII:4 (700–750 AD) (Tomtlund 1972:11, Fig. 4.9). While the fused bits may not have been functional, I am not convinced that the decorated hooks would have prohibited operative function in all cases. For that, the lock and casket material is too sparse to determine, which the following examples illustrate.

There are very few published locks from Gotland in this period. Nerman only has one in his material, which is from Grave 372 from Stora/Lilla Ihre in Hellevi (SHM 20826). It contains what appears to be an AA2.3 lock secured by one hasp. Its large lock plate has a vertically cut keyhole long enough to allow a decorated hooked, tree-tipped key to enter and compress the springed bolt. Unfortunately, the find did not have a key that could support this observation. Having looked further into the finds from this site in the Swedish History Museum databases, there is also a rather well-preserved AA1.2 lock with lock plate and hinges in Grave 364. While other locks could have been in use in Gotland, these two finds demonstrate a correspondence with Norwegian lock types in the Merovingian Period despite stylistic differences in key forms. Whether these pull locks also dominate in mainland Sweden and Denmark remains to be seen.

The Sande casket with AA1.2 lock is dated to D2b (Vedeler et al. 2018:7), and represents the first sign that knowledge of constructing sliding bolts secured by hasps and making caskets for such locks had arrived in Scandinavia. Where that knowledge came from has not been addressed, and a review of the literature indicates that the British Isles are the most likely candidate. The search for similar pull locks outside Scandinavia led to Anglo-Saxon England, through the work of Patrick Ottaway (2016) and particularly that of Vera Evison (1987) on the cemetery of Buckland in Dover, mentioned in 5.1. At Buckland, the burials are dated within the time span of 475–750 AD. There are no discernible locks in the burials dated prior to 575 AD, but keys of 1A.1 and 1C type are present, which could indicate pull-and-slide mechanisms. Among burials dated between 575 and 675 AD, there are two different locks present: the AA1.1/AA1.2 type, found alongside keys of types 1A.1, 1B.1, and 1B.2 (Graves F, 29, 55, and 124), and the AA3 type for 1C keys with T-shaped bits (Graves 35, 59, and 60). One burial dated to 650–700 AD had a container with clasp hasp, which could be fastened with a pin or a padlock (Grave 143), and one burial dated to 700–750 AD had a possible AA3 lock (Grave 81). There are also burials with single keys and key chains, but of no other types.

Thus, the locks at Buckland are exclusively pull-and-slide locks and are generally earlier than the Norwegian finds, which – with the exception of Sande – are prominent from *c.* 700 AD onwards (in correspondence with other British finds, Ottaway 2020:194). The temporal distance between Sande and the earliest at Dover may be quite small and indicate a close connection. Dover is located very close to the Frankish coast, and Sande is situated along suggested travel routes from the western and southern coasts of Norway to Denmark, the Frisian and Frankish coasts, and the British Isles (e.g. Bakka 1971; Myhre 1994). I suggest that transference of locking technology and knowledge may have taken place between these areas in the Late Migration and Merovingian Periods. Moreover, the sizes of the determinable containers at Buckland largely correspond to what is estimated for the Sande casket, rectangular but somewhat smaller, *c.* 32 x 20 cm (Evison 1987:100, Text Fig. 18 b).

Although the Sande find could indicate that pull-and-slide locks appear earlier or perhaps simultaneously across the North Sea from the mid-to-late 6th century, the general concentration of AA locks in Norway in the 8th century compared to the earlier finds in England indicates that the influence went to Norway/Scandinavia from Britain. The locks may have originated from other areas as well. One potential area of influence is Frankia, where pull-and-slide locks of AA3 type and small 1B keys have been documented in Gallo-

Roman contexts (e.g. Guillaumet and Laude 2009:31, Fig. 24, no. 211). Interestingly, though, the AA2 type makes no appearance at Buckland, nor in Frankish materials, from what I have been able to discern. This does not mean that it was not present in Anglo-Saxon England, and the question of this type being indigenous to Scandinavia remains unsettled. The comparisons could suggest that the lacunae in locks and keys in Norway until 650/700 AD may be one due to deposition and not absence of mechanisms, craft knowledge, or contact networks. This would explain the continuation of the AA1 type from the late Migration Period to the late Merovingian Period and the appearance of AA2 as a potentially Scandinavian innovation.

Lastly, although 1C keys and AA3 locks are known from both northwestern and central Europe since the Migration and Merovingian Period (Guillaumet and Laude 2009; Steuer 1982, Abb. 10-11), these are not identified in the Norwegian material until the Viking Age. The locks resemble Norwegian finds and point to use on containers, while some of the keys are of a size that suggest use in AA4.3 door locks (e.g. Guillaumet and Laude 2009, Type 03, nos. 196–210). This is also the case for Frankish pull keys, such as those presented by Martin Linlaud (2014) in his study of locking mechanisms from the 8th to the 13th century in France. Out of the 800 objects studied by Linlaud, there are only three pull keys, which are large 1B keys that indicate use in door locks, likely resembling AA4.2. The keys derive from L'Houmeau and Nancras in the department of Charente-Maritime, and Faye-sur-Ardin in the department of Deux-Sèvres, all in the Nouvelle-Aquitaine region of southwestern France (Linlaud 2014, Pl. I no 1, Pl. II no. 1, and Pl. XX no. 1). The former two have finds from 700–1000 AD, and the latter from *c.* 800–1100 AD, and could tentatively point to springed door locks from the Late Merovingian Period. These correspond temporally to the potential door keys in the Norwegian material (see Table 8.8).

Apart from these select finds of pull keys and mechanisms, investigations into Frankish materials have outlined a heavy predominance of turn keys and locks from the 8th century onwards (Kessler 1932b, 1934; Linlaud 2014). The key and lock types will be further presented under the Viking Age transformations below, but this general observation may indirectly indicate that while the development of pull-and-slide mechanisms was influenced by British contacts from the late 6th century onwards, the knowledge of turning mechanisms came from elsewhere, potentially the western Continent, and possibly later. Indeed, a 2C.3 key from Strand in Rogaland is by all accounts a Late Merovingian or Carolingian key (Gruppe II, Kessler 1932b, 1934), which suggests a southwestern direction for the introduction of turning mechanisms to the North, potentially starting in the 8th century. In terms of the 2B.2 turn key from Løten in Hedmark (cf. 7.2.1), the very earliest examples may have been known in the 7th century. However, the absence of locks from the Merovingian Period in Norway leads to the question whether the keys reflect turn locks in use or were novel and perhaps 'exotic' artefacts.

The last developments of the Merovingian Period in Norway concern the padlock technology, where there are two developments that take place separately. The first is the appearance of the pull-motion A7 padlock operated by 1E keys. There is one lock find with key from Krødsherad, Buskerud, with a general date to period. Two other 1E keys are from Åker in Hamar, Hedmark, but these have broad and – in light of this discussion – somewhat indeterminate dates within the Iron Age. Their distribution is limited to Eastern Norway and do not appear to have spread further in this period. The closest parallels in Scandinavia are from Helgö (Tomtlund 1970, Fig. 5; 1972:29-30) and Viking Age Århus (Crabb 1971:185–186, EXT, EXV). Peter Crabb (1971:186) has also suggested that the type is represented at Birka by two springed shackles from Bj 26 and Bj 305; however, I find the indications to be somewhat indefinite, as the shackles could also belong to B2 turn padlocks, the presence of which are confirmed by a padlock case in Bj 1001 (Arbman 1940, Taf. 273, 6).

Further afield, Tomtlund (1972:32, with references) found parallels from Halle in Germany and from Poysdorf in southern Austria, suggesting a Langobardian origin. He dated the type to 500–800 AD, and argued that the first knowledge of padlocks originated in the Roman provinces (Tomtlund 1972:34). Katarzyna Czarnecka has more recently argued that the first padlocks were of Celtic origin, first appearing in the middle La Tène period in the Italian alps and later adopted and developed further by the Romans (Czarnecka 2013:69, with references). This corresponds to my observation that padlocks with the same lock principle as A7, operated by similar-looking keys (albeit with S-shaped handles), are known from Gallo-Roman and Merovingian sites such as Châlon-sur-Saône in Bourgogne and Vertillum in Côte d'Dor, Eastern France, as well as at Manching in southern Germany (Déchelette 1913; Guillaumet and Laude 2009:49, Fig. 38, catalogue nos. 266–270, with references; Jacobi 1974:162–163, Abb. 42).

Additionally, the use of clasp hasps for securing caskets with padlocks is demonstrated at Buckland in the late 7th century (Evison 1987, Text Fig. 18 a), and according to Ottaway (2020:200), barrel-shaped padlocks are known in England from the Early Anglo-Saxon Period (410–660 AD). This may indicate that mounted use of padlocks came by way of the British Isles or spread across northwestern Europe around the same time. Tomtlund (1972:38) argues that the padlock could have been the earliest locking mechanism for caskets with lifting lids, which could be true for Eastern Sweden. In the Norwegian material, however, the A6 and AA1 are documented before the A7, and could have been largely contemporaneous.

Thus, the current impression is that knowledge of padlocks, specifically cylindrical ones with pull mechanisms, was gathered through contact between Scandinavian and Central-European areas from the 6th century. This is in keeping with the cultural impulses that characterised the Norse societies in this period, and with Åker (and Helgö) being a centre for craft-working as well as socio-political power (e.g. Røstad 2020 with references).

The second development concerns the turn padlock type B2, which has a very different trajectory and a later date than the A7 type. These are operated by 2B.2 type keys and the earliest turn-mechanism padlocks appear at Helgö, in copper alloy (Tomtlund 1972, Figs. 7.1-5). This particular form is not identified in Norway, and the one B2 lock in the material has a suggested Viking Age date. The other known parallels are from Birka, as mentioned above. Like Tomtlund (1972:26), I have not been able to identify B2 padlocks elsewhere, and the type seems to be locally produced and applied in the Late Merovingian and Viking periods. The limited distribution of turn mechanism padlocks could be due to the development of C1 push padlocks, which appear around the period transition. Following Tomtlund (1972:22), the turn padlocks were replaced by the C1 type (his Type 2), which he considered to be more secure and less easy to pick. This type will be further presented in the next section, along with the other developments that took place in the Viking Age.

7.3.4 Viking Age transformations

The technological developments of locks and keys in the Viking Age are extensive and complex. I will attempt to disentangle some of them and outline the conditions that may have facilitated their appearance and distribution in Norway and Scandinavia. The container locks are presented first, followed by the portable locks and the door locks.

Container lock development

Starting with the container pull locks, the A6, AA1, AA2, and A7 are continued from the previous period. The types are widely occurring in Norway, particularly the former three, and consequently I consider these to be locally/regionally produced. New additions at this time are A3, A4, and AA3. The first two are only represented in mid-9th century Oseberg and have no known parallels in the Scandinavian material, so the basis for considering their development is slight. The A4 used on the bucket-shaped caskets has similarities to the A1 type box lock, mainly in the shape and movement of the lock spring. Whether knowledge of such mechanisms had endured since the Roman and early Migration Period or the A4 may be considered a reinvention of a similar locking principle is difficult to assess – both scenarios are possible. This also applies to the A3 lock on the sliding box lid. This Oseberg item and unlocked examples (5.1.1) demonstrate a probable continuity of such boxes from the Early Iron Age, while also indicating technological innovation in the Early Viking Age.

Technologically, the A3 appears closely connected to the AA3, both being centred on two-leaved springs operated by 1C.1 keys. This key type is documented in Britain at least since the 6th century (e.g. Evison 1987; Felder 2015) and later at Dorestad in Frisia, here also represented by 1C.2 keys (e.g. Holwerda 1930, Afb. 61). They are also known from Migration and Merovingian Period burials in current-day France and Germany (Steuer 1982). Type A3 only consists of two thin spring leaves and its identification is reliant upon the preservation of its container – as in the Oseberg burial. Thus, when not found with AA3 locks, 1C.1 keys could theoretically indicate that A3 locks were present before the 9th century, maybe as early as the 5th or 6th century. However, this remains a suggestion at present and A3 currently appears to be a 9th century development, possibly a local/regional innovation.

1C.1 keys largely point to use in caskets and chests secured by AA3 locks in the Late Iron Age. This is based on the abovementioned Merovingian Period graves at Buckland and a burial of similar date from Bossut-Gottechain (Grez-Doiseau) in Belgium that contained a casket with AA3 mechanism and a corresponding 1C key (Vanmechelen and Vrielynck 2009:32, Fig. 5). The AA3 type appears twice in the Norwegian material: in an Early Viking Age burial at Sogndal in Sogn and in a Late Iron Age burial in Stjørdal, Trøndelag (B12215 and T3025–26). The only find familiar to me from elsewhere in Scandinavia is from a 10th century burial at Lejre in Denmark, where the lock secured a large chest (Andersen 1969; Andersen 1993). The size of the Norwegian containers is not established; they could be large caskets or chests. AA3 locks in Scandinavia could have been related to westward contact, like the AA1, while they seem to appear later. Also, it is unclear if they represent indigenous craftworking. That AA3 locks and 1C.1 keys generally are scattered geographically and temporally could suggest that they may be imported products. If so, the westward orientation of parallel finds could indicate that their appearance was related to activities in those areas around 800 AD and onwards.

Moving on to the mounted turn locks, the B1, B3, and BB1–BB4 all appear in the Early Viking Age. B1 is a chest lock identified in the 9th century in Eastern Norway, and its development may have sprung from A6. The lock spring is nearly identical in the two types, and the main difference between them is that the lock spring in B1 is placed sideways rather than flat against the container front. The same principle is also observed in the turn padlocks (B2), which Tomtlund considered to have developed in the Late Merovingian Period or the Viking Age (see above). The padlock development may have taken place in the eastern Swedish area, while B1 could represent a local Eastern-Norwegian craft stemming from the existing A6 mechanisms. An important reservation here is that I am presently not aware of B1 locks outside Norway, while the 2B.2 turn keys that could have operated them are not unique to this area. Two or three burial finds at Birka may be B1 mechanisms, but they contain no lock springs and the keys are 2C.2 rather than 2B.2 (Grab 559, 585, and 965, Arbman 1940, Taf. 270, 1–3). As for the B3 lock, this is not represented in the Norwegian material. It is documented at Ribe (Feveile 2006) and potentially at Broa in Halla, Gotland (Almgren 1955:33). The find at Ailcy Hill in England could be either 8th or 9th century (Ottaway 2020:194, with references), which could indicate a direction of influence or a parallel development in Britain and Scandinavia.

The turn-and slide types BB1, BB2, and BB4 are identified in Norway, while BB3 is not. The two former are the most commonly occurring, while the latter is only represented by one find (B6618, see Almgren 1955:33–34). The 2A and 2B keys strengthen the broad distribution of these mechanisms. That turn-and-slide locks were common across Scandinavia is suggested by the presence of 2A and 2B keys at Birka (Arbman 1940; Ulfhielm 1989), Gotland (Ulfhielm 1986), Hedeby (Westphalen 2002), and Ribe (Brinch Madsen 1984), as well as Almgren's (1955) seminal study. The lock material is less investigated. From what I can discern, the BB2 and possibly the BB1, as well as the BB3 are present in the Birka burials (respectively, Grab 639 and 845, and 739 in Arbman 1940, Taf. 259–260, 263–265). BB3 is also identified in Chamber grave 5 at Hedeby and Böklund in the Schleswig area (see 6.3.2). The Hedeby burial is dated to the early to mid-9th century (Eisenschmidt 2011:88). I consider the BB3 the most complex of the turn locks, and the span from B1 to this type reflects the extent of the technological complexity and diversity that took place at this time.

The appearance and development of the mounted turn locks is challenging to assess, as illustrated by Almgren's (1955) study of Scandinavian and Western-European keys, the only previous work that has shed light on this matter. His investigation demonstrated that turn lock and key production took place in Scandinavia, and he considered the mechanisms to represent an indigenous 'Nordic' craft development based on stylistic comparisons of key forms and decorative styles. However, it has not been firmly established that the mechanisms were significantly different from those outside Scandinavia and thus constituted indigenous innovations. Almgren's analyses showed that Viking Age turn keys have the closest parallels to keys from Anglo-Saxon, Frisian, and Frankish areas, but he had no locks to compare the Scandinavian lock finds with, only Roman finds that were considerably earlier and technologically different. My search for works on British, Frankish, and Frisian turn lock mechanisms to address this matter was long futile, until I ventured upon the earlier mentioned study by Linlaud (2014) towards the end of the study.

Lindlaud's analysis is elaborate and complex, with a strong and detailed focus on technical function. From my understanding of this study, the Frankish turn mechanisms were applied in padlocks, container locks, and door locks, but mainly the latter (Linlaud 2014:86–104). This may be influenced by their find contexts, which seem to be centralised/urban settlements, forts, and castles (Linlaud 2014, Tableau I). The keys are predominantly of the hollow-stemmed 2C type and the lock mechanisms appear to be exclusively pure turn locks – most closely resembling type B4 with tongued bolt (illustrations VIII–XII), but also with similar spring arrangement as the Scandinavian BB locks (illustrations IV–VII). Even when the keys have stem pins like 2A and 2B, they were seemingly used for turning on rather than for sliding the bolt (e.g. illustrations XIV–XV). Thus, Almgren seems to have been right in stating that the Scandinavian mechanisms were characteristic, but this seems to mainly concern the turn-and-slide container locks. A precaution here is that Frisian and British mechanisms may paint a different picture. Following Almgren's catalogue of finds, Frisian, British, and Scandinavian keys have closely similar bits, often with the protruding tips characteristic for BB mechanisms, and I believe that there may not have been significant difference in their locks. In principle, the locking devices could have been very similar in construction and function, but with characteristics that related to different places of production. Furthermore, the finds treated by Linlaud date between the 9th to the 13th century, and do not predate the ones from Scandinavia. Thus, his finds do not shed light on the 8th century developments and how turn locks began to be implemented on containers, and it could be that Frankish locking technology was not a prominent part of these processes.

Almgren addressed the arrival of turning devices in Scandinavia by comparing key finds. He found that select British keys could be placed in the 7th century, while the majority of the Frankish and Frisian keys outlined a primarily 8th century date (Almgren 1955:41–46).

A comparison of his assemblage with my analysis of the Norwegian finds suggests that the Western-European turn keys are generally earlier than the Scandinavian counterparts. However, recent studies of workshop remains at Ribe has documented casting of copper-alloy turn keys for mounted locks from the mid-8th century – possibly even as early as *c.* 700–725 AD – in addition to remains of padlock manufacture (Croix et al. 2019 with references). Thus, the sharp divide around 800 AD indicated by (primarily) the burial evidence is calibrated by these findings, offering a more dynamic view of the changes that occurred. With these results, the temporal difference between the Scandinavian and external materials is less marked. Moreover, it illuminates the temporal span from early production to deposition in funerary contexts.

There is still much that is unresolved about the turn lock development, but the above discussion suggests that the production and distribution of varied turning mechanisms was a broad-scale development that took place across Western and Northern Europe from *c.* 700 AD onwards, with few clear areas of 'origin'. There may not have been particular 'Nordic' turn lock types, but rather a wide range of shared variation, potentially with some nuances related to local or regional craftspersonship (following Almgren 1955:41). Furthermore, the production waste from Ribe strengthens my view that the growing trade and specialised crafting activities and the establishment of emporia in the 8th to 9th centuries were the governing conditions for the technological development of turn locks, as well as other types.

The mounted push locks, CC1 and CC2, develop along a different trajectory than the pull and turn locks. In Norway, CC1 locks and the accompanying 3E keys are represented in the southern part of the country, from Rogaland and Lista in Vest-Agder to Vestfold and Løten in Hedmark. Scandinavian counterparts are mainly represented by keys, but Almgren (1955:56–57) referenced two lock finds from the Early Viking Age Grave 2 at Valsgärde and the 8th century Grave 1 at Vendel in Uppsala, respectively. To these I would add a lock from Bj 963 at Birka (Arbman 1940, Taf. 266).

There were nine 3E keys in copper alloy in Almgren's study, and their distribution reached from Hedeby and Stellerburg in Schleswig-Holstein, northeastern Jutland, and Fyn, across to Skåne, Småland, and Öland. Added to the Uppland finds, the distribution of these mechanisms is to the southeast rather than the west, and the Norwegian finds largely correspond to this picture. Almgren (1955:57) considered these keys and mechanisms to be Nordic types, although there are similarities to Roman mechanisms with T-shaped keyholes (e.g. Kessler 1932 in Czarnecka 2013). Hence, they do not seem to have a westward orientation and appear to have a development that differs from turn and pull locks. Almgren points out that 3E keys resemble an inversion of the 1C key bits. It is possible that the CC1 mechanism represents an innovation where the pull-and-slide principle of AA3 locks was 'inverted'. This development could also have taken place in relation to padlock push mechanisms which seem to arrive around the same time.

Looking to CC2 and 3F keys, these are similar technologically, but are so far identified in 10th century contexts such as Næsby (Juhl 2012), Fyrkat (Roesdahl 1977), and Trelleborg (Nørlund 1948, Taf. XXII), as well as medieval Lund in Sweden (Blomqvist 1941). Thus, the CC2 lock may have developed from the CC1, and the concentration of these types and accompanying keys in Danish contexts suggests that this took place in Denmark, or at least in southern Scandinavia. The CC2 is not represented in Norway, but there are three examples of 3F keys in copper alloy from Trøndelag and Oppland. These are single finds and offer little additional information concerning the technological development of mounted push locks.

Padlock development

The connection between craft and trade networks in turn lock development is equally strong when considering the padlock material. As shown in the Merovingian Period, the padlocks were particularly oriented towards the central places, such as Helgö and Åker with types A7 and B2. In the 8th century and into the Viking Age, the evidence of padlock production is likewise documented at Ribe and Kaupang (Croix et al. 2019; Holback 1999; Pedersen 2010, Fig. 4.77). In the following, the developments of push-type padlocks C1–C3, and the C5 and C6 fetter locks will be explored. C4 is only represented by one padlock find from Byggland in Telemark, and has no known parallels from other areas. Its arrow-shaped lock spring does echo C1 lock springs, while the keyhole at the base resembles C3 locks, so C4 may be a local and singular craft product inspired by such mechanisms.

The box-shaped C1 padlocks and 3A keys in Norway are documented in the Early and the Late Viking Age, with a concentration in Eastern Norway and scattered finds in the other regions. Outside Norway they appear most densely in Eastern Sweden, particularly at Helgö and at Birka (Gustafsson 2003, 2005; Hedenstierna-Jonson 2015; Karlsson 2009; Tomtlund 1972, 1978, 1989), as well as at Hedeby, Århus, and York (Crabb 1971; Ottaway and Rogers 2002; Westphalen 2002). From what I can tell, there is little difference between the Norwegian and the Scandinavian finds from a technological viewpoint, and the eastern orientation of the Norwegian finds could suggest a connection to the Swedish areas. A key and padlock from Kjølstad in Odal, Hedmark (C37550r-t) offers a firmer indication of this, as the key has a copper-alloy handle closely resembling keys from the Birka Garrison (e.g. Westerholm 2001). A key from Bjørkum in Western Norway, however, has a basket-shaped handle which does not appear in the Helgö material and only once in Birka (Arbman 1940, Taf. 274, 3). The shape of the handle has parallels to York and Danish finds, of both 3A and 3F type (e.g. Crabb 1971, Fig. DLK; Madsen et al. 2014, Fig. 6.79; Roesdahl 1977, Fig. 20), which could indicate manufacture in Denmark.

Production of C1 padlocks is likely to have taken place at both Birka and Helgö (e.g. Gustafsson 2005:21; Tomtlund 1972:33). The documented remains of padlock welding and brazing at Ribe and Kaupang mentioned above could likewise indicate manufacture, although other padlock types, such as A7 or B2 could have been made as well. It has been suggested that inspiration for the C1 type came from the East, because such locks and keys are known in Russian and Finnish areas (Arne 1911:58, Fig. 243 a; 1918, Fig. 27). However, the Russian evidence is dated to the 10th century (Arne 1918:47), and considering the production evidence it is more probable that they were brought eastwards from Scandinavia (e.g. Blomqvist 1941:101 with references).

Tomtlund (1972:43) suggests that the type was first developed in the Late Merovingian Period, and a unique padlock find from Holstebro in western Jutland with a Vendel-style male face decoration supports this view (Skou Hansen 2018). The form and construction of the Danish padlock differs from the others of this type, and could constitute an early and local manufacture, which corresponds to the evidence at Ribe. The wider circumstances for how push padlocks with T-shaped keyholes appeared in Scandinavia is not known. The principle is observable in mechanisms found in Roman provinces (e.g. at Mainz in Germany, Czarnecka 2013, Fig. 1, 4; Kessler 1932a). This is the main point of reference at present, and could tentatively be taken as an indication of the continuity of the locking principle in the Central-European area.

The T-shaped keyhole is also characteristic for C2, and it is likely that C1 and C2 developed from the Roman Period devices. Type C2 is not documented in the Norwegian material from the Iron Age, and its presence is only indicated by a 3B key from Kisa, Akershus, which is a single find with Late Iron Age to medieval date (6.3.3). Tomtlund (1972:30 with references) has dated this padlock and key type to the Late Viking Age and early medieval period, with finds in the Baltic area. The presence of C2 fragments and 3B keys at York, and keys from Hedeby and Lund are a further indication, demonstrating a potentially urban and trade-related development (Blomqvist 1941; Ottaway 1992, 2020; Westphalen 2002). The similarities to C1 locks suggests that C2 could be a development into larger and potentially more secure padlocks, which possibly took place in the 10th century (Ottaway 2020:202).

C3 locks in Viking Age Norway are not confirmed, they are indicated by two fragmented lock springs. There are three 3C keys dated to the 11th-14th century, but these are not exclusive to the C3 type. Its presence in Scandinavia before the Middle Ages is similarly rare, appearing only in Århus and Hedeby, as far as I know (Crabb 1971:188; Westphalen 2002, Taf. 69). Crabb (1971:188) considers this construction as an improvement from C1 and C2, whose long T-shaped keyholes made picking and breaking easier. As such, C3 could be regarded as a later technological improvement; the only challenge with this view is that C3 is ostensibly earlier than the other two types.

Czarnecka (2013) has demonstrated that C3 padlocks were present in the Przeworsk culture area in Poland and the Chernyakhov culture in Ukraine and Romania from the Late Roman Period to the Migration Period. These were very similar to Roman padlock mechanisms. The main difference in their construction was that the Roman locks had fixed shackle – comparable to the C6 fetter lock – while the Germanic lock had a separate springed shackle like most of the Scandinavian types (Czarnecka 2013, Fig. 2). The first type only appeared in the Roman Empire and the other is only known from the Barbaricum, which led Czarnecka to consider the Germanic lock as locally produced, further suggesting that the padlock technology was picked up and developed by craft centres that also brought wheel-made pottery into the Barbaricum. Thus, the C3 predates all of the other push padlocks, and could represent a point of departure for their later developments – for example the T-shaped keyhole being added to the construction. They could also represent an inspiration for the CC1 and CC2 types, as these mounted locks are centred on a similar locking principle and arrangement. The changes in design and distribution of padlock technology seem to be related to transformations in crafting traditions rather than to import and export. How C3 came to appear in Scandinavia and Western Europe in the Late Viking Age cannot be ascertained. Its appearance could reflect a higher desire for security and constructional sturdiness, as outlined by Crabb, however, which avenues the knowledge or the mechanisms took are not clear at present.

The fetter lock types C5 and C6 are operated by 3C keys, like C3. Their constructional principles are similar and their development should probably be regarded as related to C3. As demonstrated by a study by Joachim Henning (1992), fetter locks like C5 and C6 (Henning's types D-1 and B-2) have an eastern distribution. The C6 (Henning's Form B-2) is documented in Ukraine and Bulgaria from the late 10th century and in the late

9th century northwest of the Black Sea in Russia, and C5 (Henning's Form D-1) is documented in Ukraine from the 11th century. The earlier date of C6 corresponds to its close resemblance to Roman finds, which were likewise used for locking fetters and shackles (Czarnecka 2013:69, with references). C5 more closely resembles C3 in form and they coincide spatially in Ukraine, possibly indicating a later development from in this area. Both types are present in Hedeby, and C5 is present at Trelleborg (6.3.3), indicating that these could have been introduced to Scandinavia at the end of the Viking Age. Their dates largely coincide with the appearance of 3C keys and C3 in the Scandinavian area, and may have been introduced under similar circumstances. Henning (1992) connects the fetter locks to slave trade, and this is a possible reason for their arrival in the North (see also Gustafsson 2009:92). They may have been used for securing slaves at these sites; other uses may also be envisioned, such as securing criminals or captives. I am not aware of these mechanisms appearing elsewhere in Europe. The Danish finds do seem connected to trade networks towards the Black Sea, but this requires further examination. What can be suggested is that fetter locks do not reflect local production in the Late Viking Age.

Door lock development

The evidence for door locks and their technological development is presently sparse (5.2). There are no archaeological remains of door locks in Norway, and their existence may only be indicated by potential door keys. These will be presented and studied contextually in 8.1.4, so the following will mainly consider Scandinavian and Continental finds.

The existence of pull mechanism door locks, represented by AA4, can be estimated by large examples of 1A, 1B, and 1C keys. The earliest parallels relevant for this study are from the late Bronze Age periods Hallstatt A and B in present-day Switzerland (Vogt 1931), the La Tène period in Germany (e.g. Manching, Jacobi 1974), and the Gallo-Roman Period in Eastern France (e.g. Vertillum, Guillaumet and Laude 2009:26, Fig. 19, nos. 192–194). Hence, there are indications that springless door locks resembling type AA4.1 existed on the Continent from the first millennium BC, but the links between these locks and mechanisms from medieval Norway is indiscernible at present (e.g. Berg 1989).

For the springed variant AA4.2, I suggest that 1A and 1B keys with lengths around 20 cm and above could be potential door keys, of which there are six in the Norwegian material (see Table 8.8 in 8.1.4). The only key of similar size that I am aware of is a 1B.3 from Birka (Ulfhielm 1989, Abb. 24.:2, IV:A1, Bj 607), and the three Frankish examples mentioned earlier (Linlaud 2014). As will be discussed further in the next chapter, potential pull keys appear from the 7th century onwards, suggesting that door pull locks may have been introduced in the Merovingian Period. This could have been a development that accompanied the introduction and distribution of pull-and-slide locks on containers, such as AA1 and AA2, which were operated by the same types of key. Placing a metal spring onto a wooden bolt as seen in medieval examples is mainly a transformation of mounting and materials rather than of operational movement. It could be that this change happened locally in rural environments, as there are very few pull keys found at urban sites.

A similar tendency is suggested for the third variant. The presence of AA4.3 door locks is indicated by 1C.1 and 1C.2 keys of a certain size, including a 1C.1 key from Kvikne in Hedmark, dated 800–850 AD (C25880f). While I cannot determine whether the 1C.2 keys at Dorestad were large enough to operate door keys, the key from the Black Earth at Birka (6.2.1) is considered too large for a container lock. This find is the only large pull key from towns I have come across, and it is of much later date than the Continental door keys mentioned earlier (cf. Guillaumet and Laude 2009:28–31). It is unclear in what ways the Scandinavian finds may relate to these. The medieval Norwegian examples predominantly come from rural contexts, which could also be the case in the Viking Age, judging by the key from Kvikne. Pitt Rivers (1883:14) emphasised that AA4.3 was still in use on barns and outhouse doors in 19th-century Norway, and I have observed AA4.2 locks still in use, so this type is similarly long-lasting. While tentative, this level of permanence could indicate that springed door pull locks became implemented into Scandinavian craft tradition in the Late Iron Age and endured in rural settlements until the present day.

Moving on to turn locks, remains of B3 locks are so far indicated at Hedeby, York, and potentially Birka. Apart from these, type 2C keys may demonstrate locking of doors, because the hollow stem is connected to a pure turning motion rather than the turn-and-slide motion represented in most container turn locks. Where container keys are characterised by short stems that only needed to reach through a front lock plate, door keys required stems long enough to reach through a door blade. There are only six 2C keys from Norway and none have sufficiently long stems to be considered door keys. Hence, they are by all accounts container keys. 2C keys with long stems are, however, identified at Hedeby (Riegelschlüssel Type 18 in Westphalen 2002, Taf. 67, 22–24; 68; 69, 1–4), Århus (Crabb 1971:183–184), and the ring forts of Aggersborg and Trelleborg (Madsen et al. 2014:314, Fig. 6.78; Nørlund 1948:Taf. XXI). They are particularly numerous at Hedeby, with a total of 92 finds (Westphalen 2002:176–178). This indicates that B3 locks – or others with similar principle – were extensively used at this site. Compared to the Frankish finds mentioned above (Linlaud 2014), I suggest that the mechanisms were closely related technologically, but I will not pursue this link further.

There are four 2D keys and one preserved B5 lock documented at Hedeby (see 5.2, Schultze 2010; Riegelschlüssel Typ 1 in Westphalen 2002, Taf. 66.4–6). The only addition to these is one potential 2D key in a burial from Birka (Arbman 1940, Taf. 275, 8). Westphalen has established a 10th century date for such keys, drawing on parallel finds further south of Hedeby and at Novgorod (Westphalen 2002:181, with references).

The evidence of B4 and B5 locks suggests that the practice of locking doors with turning mechanisms started in primarily urban and centralised settlements around the 10th century (cf. Madsen et al. 2014:314). This largely corresponds to the Frankish finds, which have no clear indications of being earlier than the Scandinavian. Apart from the York finds, the concentration is almost restricted to the Danish urban sites, and it is proximate to regard this in relation to contacts with and activities on the Continent. To what degree Norway was part of this development is not discernible in my study, as the material mainly derives from burials and rural settlements, and the investigations at Kaupang have not produced locks or keys for doors.

Lastly, the tumbler-type lifting locks represented by key type 4A and lock type DD1 have been presented in 4.1 and Chapter 6, and will not be discussed much further. The key from Lund and the bolt from Bergen demonstrate an urban connection in the 11th century, which could be the place and time for the introduction of this mechanism. Later medieval examples in rural areas indicate that these were used primarily on storage buildings and not residential houses (Berg 1989:109), and they may have had similar use in urban contexts as well. Whether DD1 was used in the Iron Age proper, in rural and proto-urban settlements, cannot be determined. Nevertheless, these wooden mechanisms were used by ancient civilisations long before metal devices were invented, and a similar development cannot be rejected for Scandinavia. One indication could be the construction of separate storage buildings, as keeping things outside the house and out of immediate supervision may have sparked needs to increase security, but I will not venture further into such speculations. The present picture demonstrates that containers were the primary form of locking in the Iron Age, with locking doors starting in the Late Iron Age and fetters in the Late Viking Age.

7.3.5 Technological transformations summarised

In this comparative analysis I have attempted to contextualise the Norwegian locking developments from a perspective of craft, trade, social networks, and wider societal change. One main observation is that what and how people could lock in the Iron Age was contingent upon larger social dynamics and craft developments abroad as well as at home. I have identified some potential conditions and networks that enabled and limited locking practices, which in turn provides a framework for discussing these in a social context. The knowledge of how to make and use locking devices may also have been accompanied by ideas, norms, and attitudes surrounding them, which provides a basis for considering the significance of locks and keys in an equally temporal and culturally nuanced manner.

I wish to highlight the observation that the appearance of locking mechanisms in the Early Roman Period was the first of several introductions that took place. Locking devices did not arrive into Norway and Scandinavia at one point and transform separated from the outside world. The development and distribution of locking devices and locksmithing knowledge was a highly dynamic process, made up of several connections and factors with diverse directions, temporalities, and participants. Some connections may have disappeared, others created, maintained, and altered depending on small and large-scale social transformations. The macro perspective applied here only provides an outline of the past dynamics, but the impression made by the lock and key distributions is of a complex entanglement of interaction and movement during the first millennium AD. It can be established that the craft of making locks and keys and their consumption and deposition were very much part of the wider social fabric, and the archaeological traces follow similar fluctuations as demonstrated for other material categories, such as pottery, jewellery production, imported glass, as well as burial customs and settlement patterns.

A recurring observation is that many of the technological ideas in construction and locking principle were of Celtic or Roman origin, but the devices in the Norwegian and Scandinavian areas had undergone transformations from those origins. Some of those changes seem to have taken place within Scandinavia, others outside Scandinavia, simultaneously or at different times. Depending on the period and the mechanisms, the areas with similar technologies range from the British Isles and eastward to Poland, withouth any clear direct contact further south. The main area of contact in the Roman Period was the Polish and northern parts of Germany, while the Late Migration Period and Late Iron Age contacts seem to have a primarily westward direction. Locking devices appear to have been imported in the Roman Period, but from the Migration Period onwards the tendency is of increasingly indigenous production, where Scandinavian smiths acquired, adapted, and created knowledge about locksmithing and container construction. The locks and keys demonstrate a decorative and functional distinctiveness that indicate local nodes of manufacture and developments in craft organisation and specialisation. This tendency is strengthened in the Late Iron Age, particularly from the mid-7th century, when Scandinavian locksmithing activity is observed at the emerging emporia.

I would argue that Scandinavian craftworkers and inhabitants were not mere recipients of things and knowledges created, defined, and understood by others, but were actively seeking out, selecting, and transforming it as they encompassed locking into their daily lives. Consequently, rather than seeing the changing locking devices as reflective of trade and contact networks, I consider them to be constituent parts of those networks, participants in creating and sustaining them. The contact and trading networks and centres of interactions were most likely the avenues where knowledge about locking, and desires and needs for security devices were created and communicated. In understanding the innovation and distribution of locks and keys and what enabled people to lock in the Iron Age, one factor may be that people commissioned locksmiths to make devices – for example for locking caskets made for travel, domestic chests, or for securing slaves. However, the factor of producers actively marketing their products, thus creating and fuelling demand rather than responding to the need of consumers, should be kept in mind. In earlier studies, the development of locking devices has been considered an arm's race between defence and attack measures (e.g. Blomqvist 1941 in 2.3.1). While this may be possible, it may not represent the whole picture. Desires for security in the form of locks and keys could also have been actively spread by those that stood to profit from their popularity, and increasing technological innovation may also have been desirable for those that could afford to acquire them. The longevity of lock and key types clearly attest to long-lasting traditions in craft and use, but my view is that factors of novelty and inspiration were also relevant in the development outlined in this chapter. One example of this is the appearance and distribution of turn and push mechanisms alongside existing pulling mechanisms in the Viking Age, which demonstrates that novel devices were rapidly and widely adopted. This development cannot be fully explained by an increased need or desire to lock; it may represent the successes of the craft manufacture and of the technology itself in being effective and relevant. Here, there were probably other social factors involved as well, such as normative and socio-judicial developments.

A person’s options for locking differed during the course of the Iron Age in Norway, and some of the determining factors were related to craft, networks, trade, and socio-political conditions. There were temporal, geographic, and social limitations to what locking devices were available and, thus, to what things could be secured by such means. Now, the physical access to locking devices is one relevant aspect to locking practices, another is the socially defined conditions that would allow or prevent an individual to acquire, use, and potentially be buried with a lock and key. The intricacies of such material and social accesses is the topic of the next chapter. I will discuss what contexts and, thus, what kind of individuals, groups, or social strata had locks and keys, and what uses they put them to. Here, the possibilities and limitations offered by the lockable things will be connected to the tasks they were set to and what significances they may have had – in life and in death.

PART THREE: A Practice of Security

8. Locking in practice: locks and keys in context

This chapter analyses in more detail what locks and keys were used for – and by whom – by studying their presence in burials, settlements, and depositions. Here I will link the devices to the human agents that likely operated them and for whom the locks and keys worked as boundaries. The results will provide a starting point for outlining the social contexts and arenas where changing uses and consequences of locking took place and, thus, for considering whether and how locking became embedded into and transformative for daily life and society.

The finds are distributed on 468 burials, 26 settlement sites, and 7 potential depositions (Table 4.2). The burials will be the focal point of this chapter, as they constitute the most common context. They have the most precise dates and contextual conditions that offer information about the form and contents of the containers deposited. They also provide a more tangible link between individuals and locking than settlement and deposition evidence, offering possibilities for understanding what locking signified socially and personally for people in the Iron Age.

The first part of the chapter (8.1) is focused on the depositional and settlement evidence, and also includes a general quantitative study of the burial contexts and their main characteristics. The depositions provide insight into non-funerary use of locking devices and I will address the question of whether security could have been a motivation for their deposition. In terms of settlement evidence, I analyse what forms of locking took place in different rural communities during the Iron Age, considering the similar and differing characteristics of the sites and the particular lock and key types found. The lock and key burials are then studied by burial form and construction, and potential gender and social status. The results provide a rough outline of the social situatedness of locking.

In 8.2 a closer examination of locking devices' uses in burials will be carried out. By combining the development of lockable containers established in the previous chapter, I will study qualitatively how their forms relate to their contents in funerary contexts. How these differ and change over time will be considered in terms of gender and social status, and whether the use of locking devices in burials is reflective of their everyday applications will be addressed. I will also take a closer look into the use of lockable containers as funerary vessels (8.3). The general observations will be gathered in 8.4, where I synthesise the contextual evidence of locking in terms of expanding physical boundaries and practices of security.

8.1 Contextual distribution of locks and keys

8.1.1 The depositional evidence

Identifying intentional, non-funerary depositions is challenging, as is interpreting the nature of the depositions, be they hoards, votive offerings, or other (4.3.3). There are seven contexts and two single finds that may be depositions in this material, presented in Table 8.1 below and illustrated geographically in Figure 8.1. Two are considered as positive, four as possible depositions, one cannot be determined, and two could be either depositions or burials.

The nine finds are all keys. Four of them have evidence of being related to a container, probably caskets, but there is no firm evidence of the containers being locked. Five finds contain one key, two contain two keys, and one contains three keys. Six finds consist of pull keys, five with three variants of type 1A and one has a 1B.2 type key. The latter three finds contain turn keys, two have one 2B.3 key each, and the last has one 2B.2 key and another turn key that cannot be determined further. Their dates are all Late Iron Age; eight from the Viking Age and one from the Merovingian Period. The latter contains a 1A.1 keys and is dated to Phase 1. The five contexts with pull keys are dated generally to the Viking Age and the three finds with turn keys are dated to the 9th century.

The depositions are found on land, except one find that was found at the bottom of a lake. Four derive from what is interpreted as outfields, in stony screes or cairns, and four from infields close to present-day farms. The nine finds possibly represent four forms of depositional contexts, judging from their contents and locations: iron hoards, potential tool hoards, jewellery or non-ferrous metal hoards, and a possible water deposition.

Two finds may be iron hoards and both are from Ringerike in Buskerud, Eastern Norway. The first is from the Ådalen area. Here, an iron 1A.3 key (C12930) was found alongside 109 iron ingots of R438 type, in the outfield of the farm. The ingots were probably buried in a casket, but it is not known if the key was placed outside or inside. The key is of the rare three-tipped variant, but is also unusually large at 24.5 cm long. Pull keys of this length are uncommon in this material, and it may be that it operated a door lock (parallels in Table 8.8 below).

ID	Obj.	Type	Mat.	Location	Contents	Status	Dep. type	Site; Farm, Mun. Co.	Date (AD)
C12930	Key	1A.3	Iron	Outfield	109 iron ingots, container fittings	Confirmed	Iron hoard *(container)*	Ådalen in Ringerike, Buskerud	800–1050
C2261	Key	1B.2	Iron	Outfield	2 *'bleggøks'* axes, 2 celts, iron chain, scythe, 'hundreds' of iron ingots, 3 indeterminate iron artefacts (2 rejected 'keys')	Possible	Tool/iron hoard	Somdalen, Ringerike, Buskerud	800–1050
C15993a C15993b C15993c	Key Key Key	1A.2 1A.1 1A.2	Iron	Infield	Weaving batten, sickle, casket handle and hinges, iron fittings and cramp, large shears	Possible	Tool hoard? *(container)*	Slidre prestegård, Vestre Slidre, Oppland	800–1050
C18125a	Key	1A	Iron	Infield	2 knives, strike-a-light, weaving tool, iron hook, casket handle, iron fittings, cramps	Unconfirmed /Burial	Tool hoard? *(container)*	Leirhol, Vang, Oppland	800–1050
C4575a C4575b	Key Key	1A.3 1A.2	Iron	Infield?	Sickle, snaffle bit, celt, knife, casket handle, linen comb, 2 buckles, 2 spindle whorls, iron brooch/buckle, whorl	Possible	Tool hoard? *(container)*	Kvien, Vang, Oppland	800–1050
C38000 /49	Key	1A.1	Iron	Infield	Single find – catalogued alongside shield fittings, strap mounts, belt mounts, knife sheath mount, sword pommel, and more.	Unconfirmed /Burial	Votive deposition/ Burial	Åker; Aker, Hamar, Hedmark	550–600
C5351	Key	2B.3	Cop.	Outfield	2 armrings, equal-armed brooch	Possible	Jewellery/non-ferrous metal hoard	Ve, Sande, Vestfold	800–900
T2154 T2155	Key Key	2B.2 Type 2	Cop.	Outfield?	2 bracelets, oval brooch, brooch, bronze button, 2 bronze plates	Confirmed	Jewellery/non-ferrous metal hoard	Hestveiten, Inderøy, Trøndelag	800–900
S5125	Key	2B.3	Cop.	Outfield?	Single find	Unconfirmed	Water deposition?	Reve, Klepp, Rogaland	800–900

Table 8.1. Overview of potential depositions with keys, listed geographically.

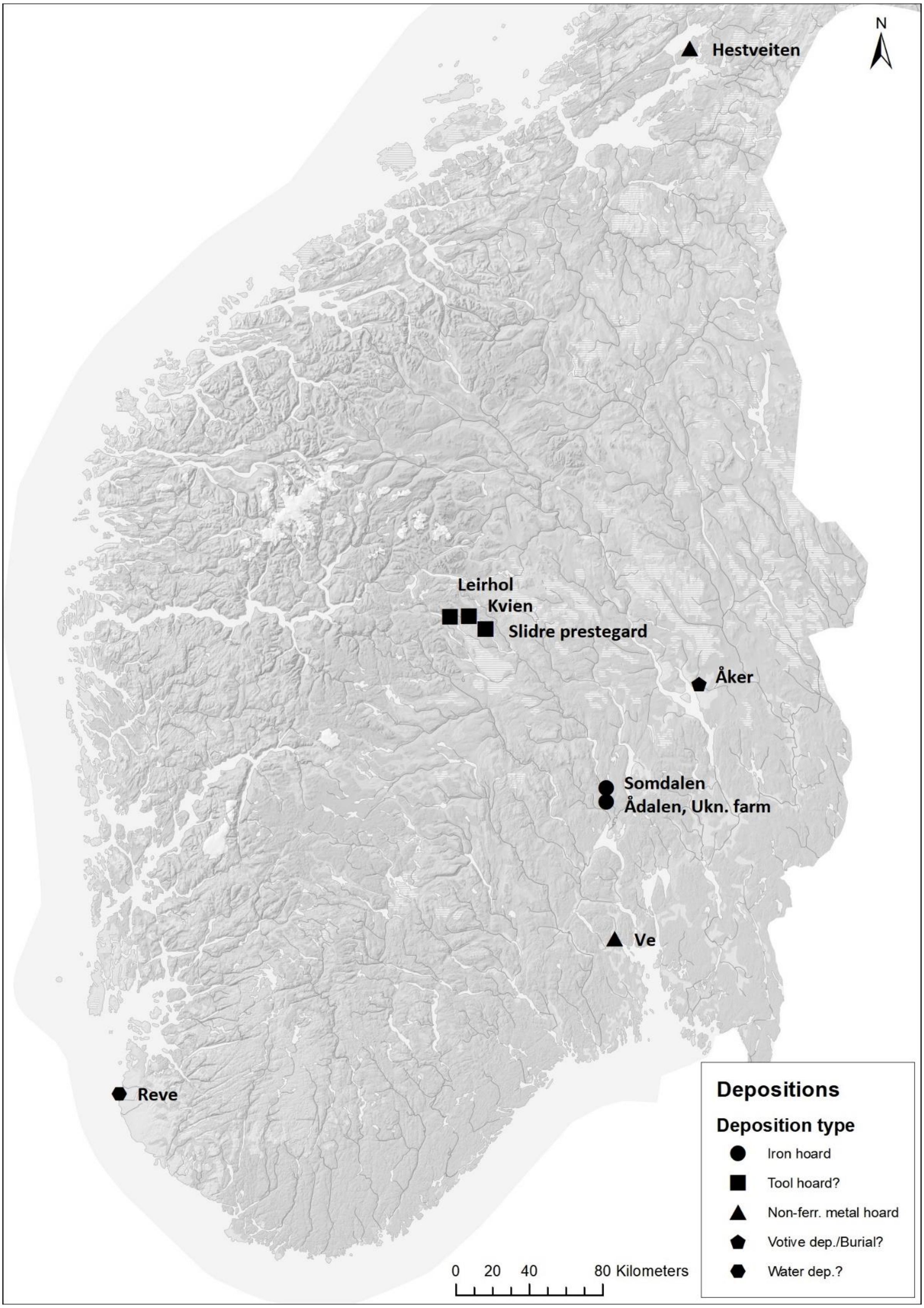


Figure 8.1. Location of potential deposition contexts with keys from the Iron Age in Norway (Illustration: H. L. Berg).

The other iron hoard find is from Somdalen in the same area. This also contained a high number of similar iron ingots – several hundred, according to the catalogue description – as well as two ‘axes’ and two celts, a scythe, an iron chain, and three indeterminate iron objects (including two rejected keys, Table II.III in Appendix II), along with an iron 1B.2 key (C2261). The key is unusually large as well, 20.8 cm long. Like the former, the key may have been used in a door lock. The axes are not actual axes, but iron ingots of the *‘bleggøks’* kind that have been linked to iron production and exchange (e.g. Loftsgarden 2017; Petersen 1918; Resi 1995). There are no clear indications of a container and it is not known how the finds were placed. The tools and chain could be related to agriculture, but in association with the high number of ingots the finds outline an iron hoard deposition of raw material and artefacts. Towards the end of my study I became aware of another similar find in the same area, at Kroksrud (C17158–C17163). This potential deposition in a cairn or scree allegedly contained six pull keys, 234 iron ingots, one ‘bleggøks’ ingot, as well as two spearheads, fragments of shears, and charcoal (Hauge 1946:162, Tab. 7). It is similar to the two other finds, but the find circumstances could also suggest a burial, or burial finds intermixed with a deposition. I have not investigated this find any closer, so if there were six keys in this context is not confirmed at present. Still, these three finds may indicate a local depositional practice in Ringerike where keys were deposited with iron ingots and other iron artefacts.

The potential tool hoards consist of three finds containing weaving equipment in addition to other tools. They are found close together in the region of Valdres in Oppland, Eastern Norway. The first is from Slidre prestegård in Vestre Slidre, where one 1A.1 key and two 1A.2 keys were found with a weaving batten, a sickle, a large pair of shears, and an iron hook (C15993a-c). The artefacts were found tightly packed, half a cubit deep in a slope. From the find information, it is likely that the artefacts were inside a casket. It is possible that the casket derived from a burial, but as no signs of a burial were identified I have considered it a tool deposition. The second is from Leirhol in Vang, where a 1A key was found with two knives, a strike-a-light, a trowel-like weaving tool (*‘vevreell’*), a hook, and fittings that also indicate a casket (C18125). It was found on a large natural stone surrounded by a stone heap or cairn, and may potentially have been a burial. However, secondarily deposited containers with textile equipment have been found elsewhere (T18817, Farbregd 1967) and it could thus be considered a deposition related to a burial context. The third find is from Kvien, also in Vang, where a 1A.2 and a 1A.3 key were found along with a sickle, a horse bit, a celt, a knife, iron pegs for a wool/linen comb, two buckles, a whorl, and a casket handle (C4574a-b). It cannot be determined whether all the artefacts were placed in the casket, but if so, its contents was diverse with tools related to agriculture, textile-working, horse-handling, and everyday tasks. The only information about the find is that it was found close to a large stone while clearing new land, without any signs of bone or charcoal. Again, a burial context cannot be excluded.

There are two contexts that could be hoards of jewellery or non-ferrous metal artefacts. The first is from Ve in Sande, Vestfold, Eastern Norway, containing two bronze arm rings and a bronze equal-armed brooch, in addition to a copper alloy 2B.3 key decorated with a curled-up serpent inside the handle (C5351). It was found in a scree in the outfield of the farm, and from the catalogue description it was not considered a burial. The other is from Hestveiten at Inderøy in Trøndelag, Central Norway, where two turn keys were found along with two bronze bracelets, part of an oval brooch, fragments of a small bronze brooch, a bronze button and two small flat bronze pieces with leather remains (T2154–55). The first key, of 2B.2 type, has a handle decorated with a raised dots on the rim and a central animal figure, not clearly discernible as the surface is worn. The other turn key is missing its bit, but the handle is decorated with a raised dots and a central triquetra. The artefacts were found together by a small rock outcrop where there was little earth. The oval brooch points to this being a burial find, but the nature of the find points towards a deposition of bronze and copper-alloy artefacts (see below).

In the depositions that are related to tools, it does seem that the keys – all iron – were considered part of the tools kits. As there are no signs of locks in these finds, and two of the keys are potential door keys, there are no clear indications of the deposited artefacts being locked in a container – at least not physically. All of these finds were collected between 1860 and 1900, so the identification and collection of finds should be considered with some caution. In terms of the finds with copper-alloy turn keys, it is more likely that the keys were deposited as part of a collection of several non-ferrous, decorated artefacts. This is particularly indicated in the find from Hestveiten, where both keys show signs of wear and damage, as do several of the other artefacts.

Lastly, there are two keys that are single finds. The first is from Smørkollen at Åker in Hamar, Hedmark, Eastern Norway, in the vicinity of the well-known Åker find (e.g. Fett 1947; Grieg 1918; Nybruget 1992; Slomann and Christensen 1984; Solberg 2003:198-201). The 1A.1 iron key was found by metal detector during a survey in 1992, and is catalogued alongside many finds of decorated fittings with parallels to the Åker Find (C38000/49). The find area covered about 500 m^2, and the collected artefacts are tentatively interpreted as a burial. However, it is debated whether the Åker find itself was a burial or a deposition

(Nybruget 1992; Slomann and Christensen 1984). If the latter, these artefacts from Smørkollen may have belonged to a similar context. The iron key differs from the other artefacts, which are exclusively copper alloy, many gilded or tinned. As such, the key may not belong to the hoard, and could be a single find, resulting from accidental loss or from the many burials that used to cover the area (Røstad 2019:12–13, with references). Likewise, the second key is difficult to interpret as depositional. This 2B.3 key was found at the bottom of a lake at Reve in Klepp, Rogaland, Western Norway, in 1929 (S5124). As such, it may represent an accidental event or loss. In any case, it is not comparable to keys deposited in water elsewhere in Scandinavia, which have been related to tool caskets and chests in the Viking Age (Arwidsson and Berg 1983; Lund 2006), and to weapon sacrifices in the Roman Period (Ilkjær 1993a).

From these few and variable finds, it may be argued that locks and keys were to a very limited degree involved in deposition activity in Norway. Such practices were common in the time span covered by this study (e.g. Hedeager 2003), so their sparse presence speaks of a restrictive attitude towards including locks and keys. In addition, the keys do not seem to have performed any obvious locking-related tasks in the depositions studied here. The main impression is that the iron keys were considered and treated as tools or as iron resources, while the material and decoration of the copper alloy keys indicate that they were treated like jewellery. As they were broken or worn, they were no longer useful as locking tools.

Another observation is that the iron pull keys are related to agriculture as well as to crafts and trades such as production and exchange of iron and textile-working, with no upper-strata artefacts. The turn keys, however, are exclusively found with middle-to-upper-strata artefacts, potentially indicating a social distinction in terms of which groups were linked to particular key and lock types.

8.1.2 The settlement evidence

There are 26 settlement sites that have produced 49 finds: 38 (2) keys and 8 (1) locks, which are presented geographically in Table 8.2 and illustrated spatially in Figure 8.2 below.[3] The chronology of settlement finds is often wider compared to finds from burial contexts. The finds are dated by the archaeological feature in which they are found, such as radiocarbon-dated cultural layers or postholes, or by the gathered material assemblage and datings from the site, and finally through typology.

[3] The three investigations at Åker, Hamar, Hedmark is treated as one, so the number is technically 24 settlement sites.

ID	Object	Mat.	Type	Context	Context feature	Settlement type	Site; Farm, Municipality, County	Date (AD)
Eastern Norway								
C38683uI	Key	Iron	1E	House	Cultural layer	Multifunctional - large farm, production, central place	Åker; Aker, Hamar, Hedmark	0–550 (?)
C38683uII	Key	Iron	1A.1	House/building	Post hole			0–1050
C38683uIII	Key	Iron	1E	House/building	Post hole			600–1000
C53465/4	Key	Iron	1A.1	Single find	Top soil			0–1050
C53468/6	Key	Iron	1A.1	Single find	Top soil			0–1050
C53468/12	Lock	Iron	A7	Single find	Top soil			0/550–1050
C53469/12	Key	Iron	1A.1	Single find	Top soil			0–1050
C53469/13	Key	Iron	1A.1	Single find	Top soil			0–1050
C61126/6	Key	Iron	1A.1	Hall building?	Cooking stone layer			400–550 (?)
C61128/14	Key	Iron	1A.1	?	Cultural layer			0–550/1050
C57592/2	Key	Iron	1A.1	Single find		Farm, production (?), cemetery	Seberg, Ringsaker, Hedmark	0–550
C37416c	Lock	Iron	C1-C3	House/building	Building foundation	Outfield	Dokkfløy; Gausdal, Oppland	670–*c.* 1050
C60229/1	Key	Iron	1A.2		Post hole	Farm?	Vettre, Asker, Akershus	780–980
C52518/12	Key	Iron	1B.2	Hall building platform	Cultural layer	Large farm, administrative centre	Huseby, Larvik, Vestfold	750–950
C52518/57	Key	Iron	1B	Hall building platform	Cultural layer			
C52518/?	Lock	Iron	?	?				
C52516/130	Key	Iron	1A.1	Single find	Top soil	Town, central place, urban settlement	Kaupang; Kaupang Nordre/ Søndre, Larvik, Vestfold	800–980
C52517/1512	Key	Cop.	2C					
C52517/497	Key	I/Co.	2A/2B					
C52519/14405	Lock	I/Co.	?					
C52519/15670	Key	Co.	Type 2					
C52519/15833	Key?	Iron	Type 1?					
C30088t	Key	Iron	1A	House	Building foundation	Outfield	Mogen; Argehovd, Vinje, Telemark	500–550
	Key	Iron	1A.1					
C25065b	Key	Iron	1B.2		Building foundation	Outfield	Totakvann; Øygarden, Vinje, Telemark	800–1050
C54975/6	Lock	Iron	C5/C6?	Single find	Metal detecting	Large farm	Bjørnstad Søndre, Sarpsborg, Østfold	*c.* 1000–1350
Southern Norway								
C57179/3	Key	Iron	1C	Single find	Ard mark	Large farm	Moi, Bygland, Aust-Agder	0/550–1050

Western Norway								
B11436i B14860/12	Lock Key	Iron Iron	A6.1 1A.2	House	Building foundation	Farm	Modvo; Setre, Luster, Sogn og Fjordane	300–500
B14034/39 B14034/40 B14034/41	Key Key Key	Iron Iron Iron	1B.2 1B.2 1A	Houses/building	Building foundation	Outfield	Vikastølen; Naddvik, Årdal, Sogn og Fjordane	650–890 650–890 530–660
B14026/1	Key?	Iron	1B?	House/building	Building foundation	Outfield	Riskallvatn; Naddvik, Årdal, Sogn og Fjordane	670–1160
B14124/18	Key	Iron	1A	House/building	Building foundation	Outfield	Fossdalen; Lægreid, Årdal, Sogn og Fjordane	450–770
B15005/30	Lock	Iron	C3.2	Craft building	Pit house	Farm	Stedje, Sogndal, Sogn og Fjordane	*c.* 1000–1100
B16701/5 B16708/2 B16728/10	Key Key Lock	Iron I/Co. Iron	1A.2 3A.2 C1?	Craft building Craft building Single find	Pit house 1 Pit house 33 Metal detecting	Multifunctional	Bjørkum; Bjørkum Nordre, Lærdal, Sogn og Fjordane	700–850 700–850 700–1000
S13286/4	Key	Iron	1A.2		Cultural layer	Production	Sømmevågen; Sømme, Sola, Rogaland	700–1050
Central Norway								
T27074 /103	Key	Iron	1A.1	Farmyard	Cultural layer	Farm	Ørland Kampflybase; Vik, Ørland, Trøndelag	250–400
T27742/26	Key	Iron	1A.2	Farmyard?	Cultural layer	Farm	Steine, Trondheim, Trøndelag	750–1100
T23515/1	Key	Iron	1A.2	Single find		Farm?/Burial?	Torgårdsletta; Torgård Vestre, Trondheim, Trøndelag	800–1050
Northern Norway								
Ts6513s Ts6514cx Ts6514cy Ts6514e	Key Key Key Key	Iron Iron Iron Iron	1A.2 2B.2 3A.3 1A.2	House/Hall building		Large farm	Arstad, Beiarn, Nordland	800–1050
T19842d	Key	Iron	1A.1	House	Fire place?	Multifunctional - Courtyard	Lækkenga; Tjøtta, Altstadhaug, Nordland	510–850
Ts10039b	Key	Iron	?	House	Building foundation	Farm	Hunstad, Bodø, Nordland	500–1200
Ts7241b	Lock?	Iron	?	Farm mound	Cultural layer	Farm	Bleik, Andøy, Nordland	0/800–1050

Table 8.2. Overview of locks and keys from settlement sites, listed by geographical region.

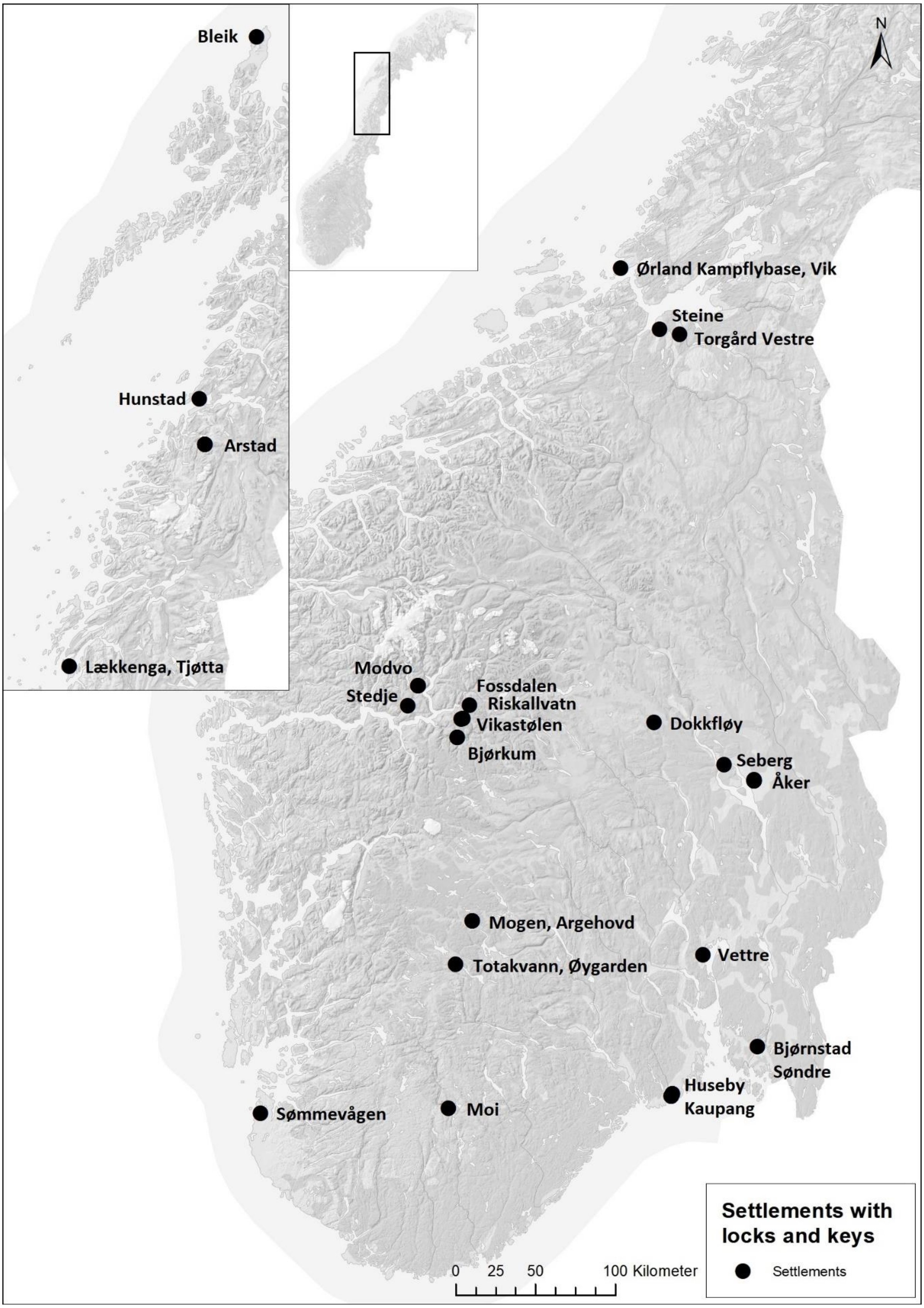


Figure 8.2. Map of settlement sites with locks and keys from the Iron Age in Norway. Sites in Northern Norway embedded in top left corner (Illustration: H. L. Berg).

Eastern Norway has the most finds with 21 keys and five locks from nine sites, followed by Western Norway with nine keys and three locks from seven sites. There are four sites from Northern Norway with six keys and one potential lock, three sites in Central Norway with one key each, and one site from Southern Norway with one key.

Eastern Norway

The site of Åker in Hamar, Hedmark, has the most finds in this region. Ten keys and one lock have been documented during three excavations conducted in 1988, 1991–94, and 2016–2017 (Hernæs 1988; McGraw in prep; Pilø 1998). As will be demonstrated, Åker has a long chronology that spans the first millennium AD, and many of the locks and keys cannot be dated more closely than the general time span of the site and its features.

There are seven 1A.1 keys of iron from Åker, which is a type that offers no closer date on its own. Four were found during the initial excavations in 1988, in addition to a padlock of A7 type (C53465/4, C53468/6, /12, C53469/12, /13). Documented features include cooking pits, hearths, and postholes, as well as rich cultural layers and a stone cist burial (Hernæs 1988:6–8). The carbon dates from the site ranged between 270–670 AD (Hernæs 1988:69), but the finds indicated activity into the Viking Age and later periods. The keys and the lock all derived from the top soil and are generally dated to the Iron Age. However, the more closely-dated parallels to the A7 lock are from the Merovingian Period, to which time period this lock could belong.

The finds from the early 1990s include a small 1A.1 key (C38683uII) and two 1E keys (C38683uI, uIII). The first 1E key was found in a cultural layer dated to the Roman-Migration Period (Pilø 1998:27). The layer was associated with a later longhouse with late Merovingian to early Viking-period date ('Hustomt I/II', Pilø 1998:17–21). This house has been interpreted as a hall (Eriksen 2019, Fig. 3.7, e-f.). The second 1E key was found in the eastern part of the building, related to a roof-bearing posthole believed to belong to the second phase of the house. The first phase was a house with a length of *c.* 34 m, with a residential zone in the east and a byre in the west. In the second phase, the house was somewhat longer, *c.* 38.5 m. The second phase was radiocarbon dated to 655–785 AD, but as the dated material was pine, the construction is estimated to belong between the 8th to 9th century, possibly the 10th century (Pilø 1998:21).

Considering these results, the date of the first 1E key may be incorrect, and should most probably be regarded as a later find associated with the activity in the longhouse. Such keys were used in A7 padlocks that seem to belong in the Merovingian Period (see above), possibly the Viking Age based on the finds from Åker. Thus, the scenario that the first 1E key could demonstrate the use of additional A5 locks from the Roman Period (cf. 7.2.1) is now considered unlikely. However, as there are intermixed finds at this site, the use of A7 padlocks at Åker in the transition between the Early and Late Iron Age cannot be excluded.

Two 1A.1 keys were found in the excavation in 2016–2017. The full report is not yet finished and only some observations can be made from information in the museum database. One key was found in a cooking stone layer just outside the entrance to a large hall building (C61126/6). The layer is radiocarbon-dated to 380–530 AD, while the hall's cultural layer is dated to 600–645 AD. The key is here roughly placed in the Migration Period, but it could be that it arrived in the layer through activity from the hall's occupation. The other key was found in a cultural layer seemingly belonging to a different building (C21128/14). The cultural layer has two radiocarbon dates, 590–645 AD and 420–540 AD, respectively. The finds have general dates to the Iron Age in the museum database, but the key may belong to the Migration Period, as its angular hook-shape has closest parallels from this period. Any further interpretations of the relation of the keys to other finds cannot be made at this point. Nonetheless, the investigation produced a range of finds, such as gold foil figures, evidence of ferrous and non-ferrous metal-working, textile-working, pottery, large amounts of bones from mammals, birds, and fish, indicating a site of high significance – which accords with the earlier evidence from the area.

Åker is a site with a strategic and central location along waterways and travel routes in the region and routes towards Sweden, with a rich archaeological record that testifies to its prominent position in the Iron Age (Gudesen 1980:112–114; Pilø 1998, 2005; Solberg 2003:198–201, 280–281). It was a centre from the Migration Period to the early Middle Ages, a site with socio-political and judicial functions, and with production and exchange of specialised craft products. The lock and keys testify to the use of both portable and mounted pull locks at Åker. Being a central place with evidence of upper-strata settlement and metal-working, it may be that these lock and key finds were produced at Åker. What is not indicated by these finds is the use of turning and pushing mechanisms. As shown in the previous chapter, these were introduced around 800 AD, and the finds may indicate locking practices primarily within the Migration and Merovingian periods. From their find contexts, they seem primarily related to the house structures, which could reflect the locking of containers inside the houses. Here, they could have served in the various everyday and craftworking activities at the site – which is a recurring trait in the settlement evidence presented here.

There are two other sites with Early Iron Age dates in Eastern Norway. One is at Seberg in Ringsaker, Hedmark (C57592/2), the other at Mogen in Vinje, Telemark. At Seberg, an iron 1A.1 key was found by metal detector at a site where five burials overlaid a settlement which included traces of farming, cooking pits, post holes, possible fireplaces and smelting pits, and slag heaps (Kile-Vesik and Bergstøl 2016). The key was counted among the settlement finds, but was found close to a burial mound (Grave 5) that was situated on top of a smithy. The settlement features had radiocarbon dates spanning 135–330 AD, which were very close to the dates of the burials, four of which were dated between *c.* 130–370 AD, and one to 415–530 AD. The overlapping dates indicate a continuous use of the site, as well as significant transformation of its character taking place (Kile-Vesik and Bergstøl 2016:62). Grave 3 and 5 had contents comparable to the Sætrang Find from Ringerike, Buskerud (Slomann 1959), illustrating that persons of very high social standing were interred on top of a metal-working and agricultural site that was still or had recently been in use at the time of burial. It cannot be determined whether the key was associated with a grave or the settlement/craftworking activity, but its proximity to the smithy and Grave 5 is taken as an indication that it belongs in the Roman Period, possibly the late phase. If so, it is one of the earliest evidence of locking outside burial context in Norway, alongside finds from Ørland Kampflybase in Central Norway discussed below, and tentatively supports an upper-strata connection to the introduction of locking.

The settlement at Mogen is of an entirely different nature, situated at *c.* 915 m above sea level, at the northern end of Lake Møsvatn in the southern part of Hardangervidda mountain plateau. The site was investigated by Irmelin Martens in 1959 and the excavation produced a mid-6th century house, *c.* 11 x 4.5–6.5 m in size (Martens 1960; 1973:13). Here, an iron 1A.1 key and another 1A key of possibly the same kind were found (C30088t). Their exact find location is not stated in the report, but it was likely located in the southern end of the house where most of the finds were made, including a casket handle. Other finds include bucket-shaped pots, glass beakers, two tweezers, a spear head, twelve arrow heads, a hammer and awl, five knives, a pot handle, a sword sheath mount, small pieces of slag, three whetstones, and a midden with assorted animal bones including reindeer, rabbit, golden eagle, sheep/goat, and cow or ox. Based on the finds, Martens (1973:65; 1988:114) interpreted the site as a permanent but short-lived settlement, lasting about 50–75 years, with hunting as the main occupation. The keys and casket handle indicate in-house storage, but it is not possible to determine what was locked.

In the same area, at Lake Totakvann in Vinje, there is a similar site, except that it is from the Viking Age. Here, a 1B.2 key was found in building foundations along with a small arrow head, but nothing else is known of the context (C25065b). Another outfield settlement is from the area of Dokkfløy in Gausdal, Oppland. Here, the shackle of a push-mechanism padlock was found in a house (DR 202), measuring 8.5 x 4 m (Jacobsen and Larsen 1992:164–165). It had a cultural layer and two fireplaces, the samples from which produced two dates within 1030–1260 AD and one to 670–880 AD. The lock type cannot be closer determined than C1/C2/C3, and its most likely date is Viking Age or possibly 11th–12th century. The settlement was situated to the east of Lake Dokkfløy and has been interpreted as seasonal habitation related to fishing, hunting, and bog iron extraction (Jacobsen and Larsen 1992:164).

Returning to the lowlands, there are two sites that seem to be mainly farming settlements, of different categories. The first is Vettre in Asker, Akershus, where a 1A.2 iron key (C60229/1) was found during surveying in 2009 (Hanssen 2009). It was related to a posthole radiocarbon dated to 780–980 AD. Possible cooking pits and other postholes were also documented. The subsequent excavation produced a Late Iron Age horse crampon and a possible casket handle or strike-a-light, as well as a significant amount of medieval and post-reformation finds (Reitan 2010). I consider the strike-a-light interpretation as most convincing, as its shape does not resemble the casket handles I have encountered in my study. The excavation reinterpreted the posthole as unlikely and it was redated as post-reformation (Reitan 2010:20). There was, however, charcoal underneath a stone foundation layer that was radiocarbon-dated to 780–875 AD, supporting the Late Iron Age occupation at Vettre and the date of the key (Reitan 2010:18, Tab. 3). While its use inside a house cannot be established, the key type points to use on a container secured by a pull lock, type A6/AA.

The second farm site is at Bjørnstad Søndre in Sarpsborg, Østfold, which was an upper-strata settlement. There were two three-aisled longhouses from the Merovingian Period and Viking Age, a well, a Viking Age cultural layer, and other features (Bårdseth et al. 2007). The radiocarbon dates indicate occupation from *c.* 680–980 AD (Bårdseth et al. 2007:89, Fig. 5_14). The Viking house probably had hall functions and the documented activity includes husbandry, cultivation of barley and food plants, and harvesting wild plants. A lock spring of a possible C5 or C6 fetter lock was found here by metal detector (C54975/6). The C5 occurred as early as the 10th century, judging by the finds from Trelleborg and Hedeby (7.3.4). If the lock was of this type and related to the settlement activity, it was probably introduced towards the end of the settlement. While the type determination C5/C6 is uncertain, fetter locks could indicate locking of humans, possibly of slaves, at upper-strata farms. The site is located on the coast at a close sailing distance from the Danish areas, and the lock fragment could point to contact with those areas.

The last group of finds from Eastern Norway are from Larvik in Vestfold, from the urban site of Kaupang and the hall site at Huseby close by. At Huseby two iron keys were found, one 1B.2 and a 1B type (C52518/12, /15), and one unclassified lock of iron that was not located for my study and has no sub-number or description. They were found in the cultural layers on the hall building platform, but where is not specified in available documentation. The hall at Huseby was a high-status building of aristocratic character, with evidence of elite drinking vessels, imported tableware, weaponry, silver and gold artefacts, indigenous and imported jewellery, and crafts such as non-ferrous metal-working, textile-working, glass bead-production, and amber-working (Skre 2007b:234–243). Based on the artefactual assemblage and radiocarbon dates, the use of the hall has been estimated to *c.* 750–950 AD (Skre 2007b:242-243). It has been interpreted as the administrative seat of the Skiringssal central place with socio-political and cultic functions, possibly controlled by the aristocratic family of the Ynglingar (Skre 2007a).

The market town of Kaupang was part of the Skiringssal complex. One lock, four keys, and one potential key were found during the surveys and excavations performed in 2000–2003. The lock is of unknown type as it was not located in the museum collection for this study. It is only stated to be of iron and copper alloy, which could indicate a C1 padlock (C52519/14405). Such locks were produced by brazing the iron pieces together with copper alloy using ceramic packages, the remains of which have been documented at Kaupang, in layers dated to the first half of the 9th century AD (Gustafsson 2005:21–22; Pedersen 2010:204, 207, Fig. 4.77.a, 2016:135–140, Fig. 475). The keys consist of one iron 1A.1 key (C52516/130) and three turn keys: a 2C type in copper alloy (C52517/1512), a 2A or 2B key with copper alloy handle and iron bit (C52517/497), and a copper alloy key only determinable to Type 2 (C52519/15670). The indefinite key may be a pull key (C52519/15833). These are all single finds from the top soil overlying the town area, and are considered as finds from the settlement layers disturbed by modern ploughing.

Based on the artefactual assemblage and dendrochronological dates, activity related to the urban settlement has been determined to span from *c.* 800–980 AD (Pilø 2007b:171–172). It is characterised by long-distance trade and import, large-scale specialised craftworking, and permanent settlements surrounded by large cemeteries. The international connections at Kaupang may also be visible in the keys. This is one of only two places in

Norway (in addition to Arstad in Beiarn, see below) where turn keys appear in a settlement context, and may be one of the places where turning mechanisms or the knowledge of producing them could have reached Norway. Furthermore, the 2C key – while missing most of the handle – shows signs of decoration different from the Viking Animal Styles common on copper alloy turn keys, and may be an imported piece. This key and others of the same kind may have arrived through contact networks between Kaupang and the areas of continental Western Europe. Based on the remains of padlock production and the burial assemblage from the cemeteries surrounding Kaupang, this is also one of two settlements with all the main locking principles present (again, Arstad). The types represented indicate locking using a broad range of both mounted and portable mechanisms. While there is one preserved door from Kaupang (5.2), there is no firm evidence door locks, as opposed to Hedeby (Schietzel and Zippelius 1969; Schultze 2010), York (MacGregor 1978; Ottaway 1992) and 10th century Novgorod (Kudravtsev 2012a, 2018). Currently, Kaupang is the only site with documented push-padlock production in Norway, and could equally have been a centre for the introduction of their manufacture and distribution.

Southern Norway

Moving southwards, there is one settlement with evidence of locks and keys in this region. This is the farm site at Moi in the Setesdal Valley, Bygland, Aust-Agder, which was excavated in 2007 (Reitan 2009, 2011, 2014). An iron 1C key was found in an ard mark (C57179/3) from the Iron Age, possibly the Early Iron Age (Reitan 2009:48). The key and its bit are relatively small, indicating a container key. The 1C type and the A3 and AA3 locks such keys operated are only documented within the Late Iron Age in this material, hence this is the most likely date of this find. However, similar keys and locks are known from the Migration Period onwards outside Scandinavia (7.3), and within Scandinavia the chronology of these types is not well known.

The investigations at Moi produced a range of settlement features from the Bronze Age, Iron Age, and the early Middle Ages. The ard marks (area no. 4) lay between areas with remains of Roman and Migration Period houses, and cooking pits from the Late Roman Period to the Viking Age to the north, and to the south at least four houses with dates from the Migration Period to the Viking and Middle Ages (Reitan 2009:46–48, Tab. 4, Figs. 7 and 27). About 150 cooking pits were identified, the majority from the Early Iron Age, but about a third of the dated pits were from the Viking and Medieval periods, indicating long continuity in pagan ritual and cultic tradition (Reitan 2014:76–77).

The houses and buildings at Moi were of varying sizes. In the first area, one longhouse that could be determined was of Migration Period date, possibly three-aisled, and 15 m in length (Reitan 2009:19-20). In the second area, two Roman Period houses were 49.5 m and 15 m in length, respectively (Houses II and VIII), the former likely three-aisled (Reitan 2009:26–32). Forging pits for secondary iron-working were also identified. In the fifth area, there was a three-aisled longhouse of at least 10 m dated to the Migration-Merovingian Period (House IV), a likely Viking Age pit house with traces of iron-working (House IX), a two-phased, three-aisled longhouse from the Viking Age/early Middle Ages about *c.* 37.5 m in length (House I/V), and in relation to this and partly overlapping in date, a rectangular ‘economy' building of about 6 x 8 m, possibly with two storeys (House III) (Reitan 2009:49–79). In the sixth area, there was a three-aisled longhouse, likely from the Late Iron Age, possibly 18–20 m long (House X) (Reitan 2009:79–81).

Based on the excavation at Moi, the key was used in a sizeable and resourceful settlement with long continuity. The key type suggests that it belonged to a small box with an A3 lock or a casket/chest secured by an AA3 lock, probably within the Late Iron Age/Viking Age. At this time, Moi was not only a well-established agricultural settlement, iron-working also took place outside and within a specialised building (Reitan 2011:177). The longhouse, House I/V, has been interpreted as a hall, possibly with a separate part of the building for thralls or dependants (Eriksen 2019:98–99, Fig. 4.11). Thus, Moi was by all accounts inhabited by people within the upper strata, possibly involved in the iron extraction activity further north in the Hovden area. The key indicates storage. As it was found outside the house contexts, it could be a possible indication of accidental loss or storing of tools and materials associated with agriculture and iron-working. This latter point is relevant for all the sites with documented metalworking, of which the next site in Western Norway is a prominent example.

Western Norway

Moving westwards into Rogaland, the one settlement in this county is at Sømmevågen in Sola, in the inmost part of Hafrsfjord at northern Jæren. This is a Late Iron Age production site for non-ferrous metal-working, unique in the Norwegian area. It was excavated in 2013 and its report had not been published by the time of writing, so the following is drawn from the museum catalogue and a brief article by Trond Meling (2015).

The excavation unearthed a 10 m long and 5.5 m wide building with several layers of waste deposits around it. Additional postholes indicate the presence of other buildings at the site. To the west of the building a 16 x 4 m pit with charcoal, stones, and burnt animal bones was found, interpreted as for making bone meal and ash applied in cupellation processes. Here, a 1A.2 key of iron was found outside the building, seemingly in the same layer as fragments of silver, copper alloy, lead, and iron, lead weights, ceramic casting moulds, amber and glass beads, ceramic vessels, a metal drawplate, and iron slag. From Meling's (2015:131–132) description, this was likely west of the building. The radiocarbon dates indicate occupation and activity from the early 8th into the 9th century (Meling 2015:131).

The closest Norwegian parallels to the materials and techniques observed at Sømmevågen are from the urban settlements at Kaupang, presented above, and Heimdalsjordet at Gokstad, Sandefjord (Bill and Rødsrud 2013, 2017; Pedersen 2010). Meling does not consider this workshop as related to a market place, however, but rather to a large farm and a local elite. Based on settlement evidence 100 m north of the workshop site, a high number of postholes with dates between 700–1000 AD could be evidence of such a local power centre. Meling (2015:132) suggests that the production activity was performed by itinerant professionals under the control and administration of the elite. It may also be that the metal-workers sought out this place for the production and distribution of their wares. As for the key, it could be a product of their activity, either meant for exchange or for their own use, i.e. for keeping tools, materials, and finished products, as well as personal effects.

Currently, there are no settlement sites in Hordaland or Møre og Romsdal that have produced locks and keys. The remaining finds from Western Norway are from Sogn og Fjordane, with sites from both the Early and Late Iron Age. What appears to be the earliest settlement in this area is at Modvo in Hafslo, Luster, with dates from the late 4th and 5th century AD (Bakka 1960; Bakka et al. 1993:153). There is one lock and a key from this site, an A6.1 type lock (B11436i) and a 1A.2 iron key (B14860/12). Both were found in the foundations of a longhouse built on a constructed terrace. The foundations measured *c.* 40 x 10 m, with remains of stone walls, postholes, hearths, and with a thick cultural layer indicating that the house had burned down twice (Bakka et al. 1993:151). Unlike most longhouses, this was divided lengthwise with a byre in the innermost half and the living quarters facing outwards (Figure 8.3). Among the finds were two iron and one bronze fibula, a gold ring, a Roman coin, a soap-stone bear figurine, a glass beaker, glass beads, knives, a gouge tool for wood-working, awls, arrow heads, fishing tools, spindle whorls, loom-weights, smoothing stones, a soap-stone casting mould, ceramic crucible fragments, an iron ingot, iron slag, a bellow's stone, hones, soapstone vessels, bucket-shaped pots, and quern-stones and grinding stones.

The character of Modvo is of a large agricultural settlement with a surplus of resources, specialised metal-working and textile-production, potentially also soapstone processing and quern-stone production (Bakka et al. 1993:193-196). The artefactual assemblage speaks of inhabitants belonging to the middle-to-upper strata. This is also supported by the burials at the site (Figure 8.4), where women and men were interred with goods such as jewellery and weapons (Bakka 1976; Bakka et al. 1993:207-230). One of the burials contained a key, possibly of 1A type (Mound 1, B11431II_p). Collectively, the lock and keys from Modvo were used within a household engaged in craft-production, exchange, and trade. The lock was for a container, likely a casket – perhaps belonging to the key in the grave? The key from the house, however, may not have been a container key. It is relatively large, 18 cm long, with an uncommonly wide and broad hook. There are larger keys from this period (see Table 8.8 below), but the hook is more enforced than most. It was either used for a substantial container lock, or it could be among earliest known indications of locking doors in the Norwegian Iron Age (Bakka et al. 1993:173, Fig. 18). If so, it could have been applied in a type AA4.2 lock. In any case, its form is not common in burial contexts, which reiterates some of the issues related to understanding locking practices based on burial finds.

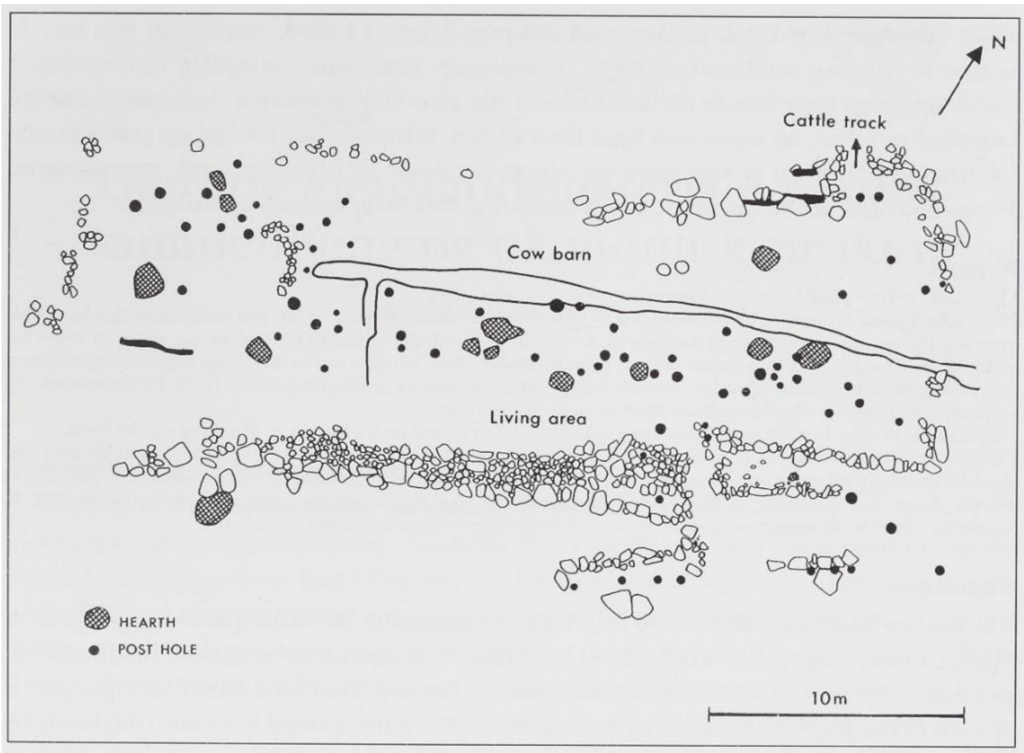


Figure 8.3. Plan of longhouse at Modvo, showing the lengthwise division of the living area and byre (from Bakka et al. 1993, Fig. 9).

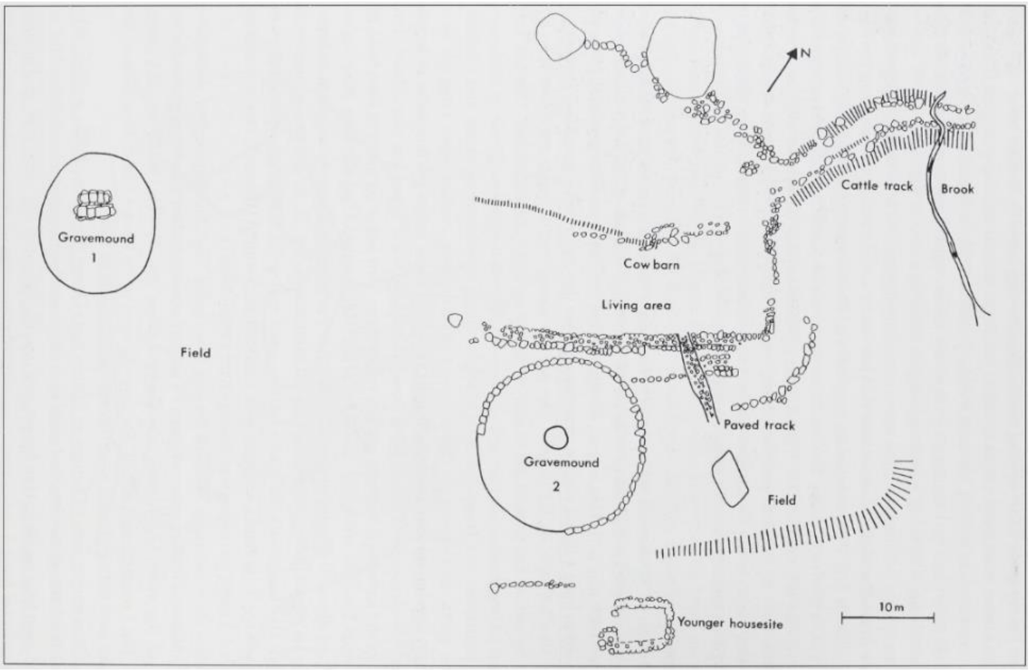


Figure 8.4. Plan of Modvo, showing the longhouse and its relation to the burial mounds and associated features (from Bakka et al. 1993, Fig. 6).

In contrast to Modvo, the next three sites are in the mountain area of Nyset-Steggje in Årdal, the neighbouring municipality to Luster. They were excavated in the 1980s, before the sites were submerged under water by hydropower dams. These are Lok. 34 Vikastølen, Lok. 26 Riskallvatn, and Lok. 122 Fossdalen (Bjørgo et al. 1992). The latter has the earliest dates, *c.* 440–770 AD from radiocarbon dates, with a confirmed presence in the 6th century based on bucket-shaped pottery. It is a rectangular building with inside measurements of *c.* 3–4 x 6 m (Bjørgo et al. 1992:254, Fig. 180). The pottery was found inside the building alongside two awls, two iron rings, rivets and nails, and other iron fragments, while an iron 1A key without bit was found outside (B14124/18). There is evidence of Late Iron Age activity at the site, so the key cannot be firmly connected to the Migration Period settlement.

A potential key was found at Riskallvatn – possibly type 1B (B14026/1). It is short and fragmented, and could equally have been a hook of some kind. It was found in a rectangular building, *c.* 8 x 11 m, with dates from the middle of the Merovingian Period into the Middle Ages (Bjørgo et al. 1992:209–212, Figs. 153–154). Other finds include a spindle whorl, some iron slag, an iron ring, and other iron fragments.

The firmest evidence of locking is from Vikastølen, where three iron keys were found: one 1B.2 type, one 1A.2 type, and one 1A key with possibly one tip (B14034/39–41). Four buildings were identified at this site – Tuft A/C, B, and G – and the keys were found in Tuft A/C, which consisted of two buildings that shared a wall. It was not established if they were single buildings or if they stood contemporaneously in the different phases of the settlement (Bjørgo et al. 1992:153, Fig. 114). Both were rectangular, Tuft A *c.* 10 x 6 m and Tuft C about 7 x 3.5 m. The 1A.2 and 1B.2 keys were found in A, while the 1A was found in C. The 1A key belonged to the oldest phase of the building, dated to 530–660 AD, the later phase being 650–690 AD, while Tuft A was dated *c.* 650–890 AD (Bjørgo et al. 1992:154). Thus, the occupation may have been concentrated in the mid-7th century. The related material included *c.* 26 glass and amber beads, three arrow-heads, knives, four-five spindle whorls, 37 loom weights, nine whetstones, pieces of iron slag, two horse shoes, fire-striking flint, soapstone fragments, burnt bones of domestic and wild animals, worked bone, pieces of pottery, and a large amount of iron fragments, rivets and nails. The bones were cattle, sheep/goat, pig, reindeer, bear, and Eurasian teal duck, as well as fish bones of cod, pollock, and eel (Bjørgo et al. 1992:294).

The activity in Vikadalen mountain valley and surrounding area is interpreted in terms of exploitation of the outfield resources through pasture, hunting, and fishing, reflecting seasonal occupation by the farming communities in the lowlands – although permanent settlement is not rejected outright (Bjørgo et al. 1992:300, 306–307). Storing tools and materials could have prompted the need for locking at such outfield sites, although there is little direct evidence of this beyond the key types and parallels to burial evidence (8.2). The 1A.2 and 1B keys are relatively small, respectively 9.5 and 4 cm long, indicating use in casket locks. The one 1A key is larger, *c.* 16 cm in length with a 6 cm hook. While the hook is not as long and enforced as the one from Modvo or others of similar size, its use in a door cannot be excluded. One could envisage that locking the door was desirable when the building was not occupied, which could have been for long spans of time at a seasonal settlement. Finding a door key on site is probably very unlikely, as it would be reasonable to take such items when leaving – which is arguably the main point of locking (following 3.5). However, in this case, the 1A key has a bend in the transition from hook to handle. This is a damage that would prevent it from functioning and it could have been left behind on purpose, notably if the damage occurred before deposition. Regardless, the finds from Vikastølen, and possibly also from Riskallvatn and Fossdalen, demonstrate that locking was taking place at outfield settlements, which along with the finds from Mogen, Totakvann, and Dokkfløy provides a Migration Period to Viking Age date for this practice.

Moving from the mountains of Årdal to the valley of Lærdal, the site of Bjørkum is of an entirely different nature. Bjørkum is a multifunctional site discovered and excavated in 2009 (Figure 8.5). It was located by the Lærdal River, *c.* 20 km from the coast, strategically placed at the transition between the inner Sognefjord and the interior valleys and mountain areas (Loftsgarden et al. 2017; Ramstad 2010, 2011; Ramstad et al. 2011). Nine houses were identified along the river bank, along with some smaller and lighter constructions, at least 13 pit houses, imprints of six tent-like house structures, large hearths, and *c.* 40 cooking pits (Loftsgarden et al. 2017:241–242). The central area of *c.* 1500 m^2 held black-earth cultural layers containing high amounts of bone, demonstrating uncommonly good preservation conditions for Western Norway. Based on radiocarbon dates, there were two phases at the settlement. The main phase was *c.* 700–850 AD, with a second phase spanning 850–1030 AD, possibly linked to reuse of old buildings (Loftsgarden et al. 2017).

Figure 8.5. Digital reconstruction of Bjørkum (Illustration: © Arkikon for UM, UiB).

There are two keys and one lock from Bjørkum: an iron 1A.2 key (B16701/5), a 3A.2 key of iron with copper-alloy on the handle (B16708/2), and a possible C1 padlock (B16728/10). The keys derive from pit houses (no. 1 and no. 33, respectively), while the lock was found by metal detecting in the black-earth area. Pit house 1 contained a wide variety of artefacts, such as one antler needle and two iron needles, two glass beads, one amber bead, five spindle whorls, five loom weights, fragments of spun thread, three quern-stones, six knives, wood planer, two whetstones, scythe, nails and rivets, worked bone fragments, burnt clay from an oven, iron slag, in addition to an antler comb with a Runic inscription. Pit house 33 contained a similar but more limited assemblage: a lead weight, a bone needle, two spindle whorls, three loom weights, a whetstone, iron nails and rivets, burnt clay from an oven, iron slag, rock crystal, flint, and quartz. Thus, these buildings were related to textile and iron-working, possibly comb-making, along with signs of food preparation, various tools and objects associated with craft, trade, and personal care. The pull key could belong to either phase of the site, while the push key points to the first phase, most likely 9th century. The report with context descriptions and specific carbon dates for the buildings is not completed. The keys testify to use of padlocks and mounted locks in the pit houses, possibly on caskets. The lock probably had a date similar to the 3A.2 key. It was found in the northern part of the settlement area, potentially serving a similar purpose in a different setting.

The excavated material at Bjørkum represents everyday objects, dress ornaments and beads, the production of textiles, daily use and manufacture of combs, refinement of iron, gaming pieces for leisure and entertainment, and presence of horses evidenced by shoes and nails. The interpretation of the site is one of a multifunctional meeting place – a *skeid* – characterised by specialised resource exploitation, various and skilled craft production, transport communication and market trade, and intra-regional assembly with socio-political and ritual activities (Loftsgarden et al. 2017). Here, locking could be performed in a range of everyday activities as well as for travel and transport. Locking could be applied to store tools, materials, and products, as well as personal effects in the pit houses, which were living quarters and production buildings. Here, there are parallels to the house at Sømmevågen. There are few signs of locks and keys being made at Bjørkum. While the site has several parallels to Kaupang, there is limited documentation of metal-working, particularly of non-ferrous metals. Thus, the keys and the padlock were likely not made at Bjørkum, rather they were brought by people who had acquired them from elsewhere, locally or further afield. Locks and keys could also have been merchandise brought for exchange at the site, making Bjørkum a place where such artefacts could be distributed by traders or itinerant locksmiths. This could be the case for similar meeting places across Norway, also in earlier periods.

The last site from Western Norway is further out the Sognefjord, at Stedje in Sogndal. Here, a probable C3.2 type padlock (B15005/30) was found in a pit house alongside 72 loom weights, 15 spindle whorls, one bone and one bronze needle, a potential bone weaving batten, soap-stone fragments, an arrow head, a knife, nails and rivets, a possible iron handle and ring, iron slag, and burnt textile remains, possibly linen (Mortensen 1993:1, 14–15). Stedje thus has parallels to Bjørkum, but the settlement type differs. Stedje is a farm site with settlement evidence from *c.* 150–1100 AD, which includes postholes, hearths, cooking pits, and the pit house. The pit house is dated to *c.* 850–1100 AD, and is contemporary with the late phase at Bjørkum. However, the lock type is uncharacteristic for the Viking Age; as the closest parallels are finds from Hedeby (Westphalen 2002), an 11th century date could be suggested. If so, it indicates use in the pit house and at the farm site in general towards the end of the settlement's life time. Late use of the pit house is further indicated by a turn key that I estimate could be 12–13th century (B15005/27, see excluded finds, Table II.II in Appendix II).

Like Bjørkum, the lock from Stedje could have been used for a casket, suggested by the nails and possible handle and ring. Although its date may be late, it testifies to the use of locking at Late Iron Age/Viking Age sites with evidence of craft, although Stedje is a farm settlement, in contrast to Bjørkum, Sømmevågen, and Kaupang.

Central Norway

The three sites in Central Norway are all in the southern part of Trøndelag. The earliest is from the site of Ørland Kampflybase at Vik in Ørland, where a 1A.1 key (T27074/103) was found in a context from the Late Roman Period. The key derived from a cultural layer (id. 500200) interpreted as a farmyard (Figure 8.6). The layer spanned about 88 m^2, measuring *c.* 14 x 9 m in size, 36 cm deep (Ystgaard et al. 2018:526–528). It contained pottery, a silver ring, a bronze finger ring, fragments of glass beakers, needles of iron and bone, a bead, a fishing hook, four knives, two whetstones, rivets, iron slag, bone arrowhead, and various iron fittings and fragments. Additionally, about two kilos of bones were collected, from fish as well as domestic and wild animals. Radiocarbon dating performed on grains from the layer provided two dates within the span *c.* 250–400 AD (Ystgaard et al. 2018:528)

The date of the layer is contemporary with the occupation phase of House 2 at the site, and is interpreted as representing the daily activity at the farm. House 2 is a three-aisled longhouse at least 33 m long with identified main entrance and inner door openings, in addition to 22 fireplaces and cooking pits (Ystgaard et al. 2018:498). The dates from the house were within 244–425 AD. The house had three partitions seemingly separated by internal doors, with a possible entrance room in the centre. There were no signs of a section for animals and the house is interpreted as a residential building (Ystgaard et al. 2018:514). House 15 nearby may have been contemporary with the longhouse, possibly a stable or smaller living quarters.

The investigation at Ørlandet Kampflybase resulted in the identification of 11 farms, including at least 35 houses, and 1149 cooking pits, 9 refuse layers, 9 wells/waterholes, and 29 fossilised field layers. A total of 14 houses were dated to the Roman Period (Ystgaard et al. 2018:3). House 2 was located at Field C alongside six other buildings, one from the Pre-Roman Iron Age, and four from the Early Iron Age, and the contemporary House 15

(Ystgaard et al. 2018:88, 104, Fig. 2.23). These were interpreted as one mainly one farm, which was abandoned in the Migration Period. While the artefactual assemblage is relatively sparse, the site portrays a settlement that was prosperous and prominent. While being large, House 2 has no clear signs of having functioned as a hall, and could have been inhabited by a family cluster of middle-to-upper social tier.

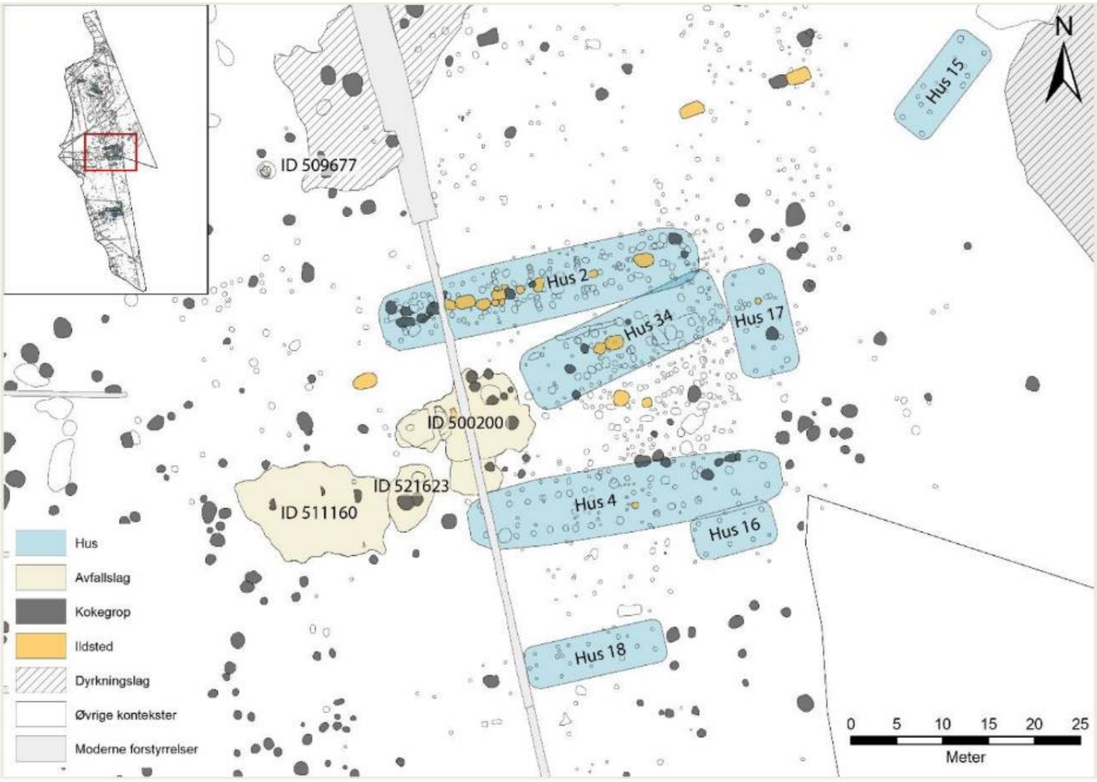


Figure 8.6. Plan of Field C at Vik. Farmyard cultural layer id. 500200 in relation to the associated buildings, House 2 to the north and House 15 in the northeast (Illustration: Magnar Mojaren Gran, NTNU University Museum, from Ystgaard 2018, Fig. 9.279).

The key from this site is the earliest from a settlement context in Norway, beside the possible early date of the Seberg key. Based on the analysis of the locking mechanisms from this period, it was used in a small box with sliding lid. Considering how few locks and keys there likely were at this time, how it came to end up in the refuse layer is curious, and indicates accidental loss rather than an intentional act – as do the silver and bronze rings.

The other two sites in Trøndelag are from the Late Iron Age, both in the Trondheim area. The first is Steine, a farm settlement with dates from the late Merovingian Period to the early Middle Ages. Here, an iron 1A.2 key (T27742/26) was found in a stone layer (*'bryggesteinslag'*) associated with the farm settlement. This layer also produced a penannular brooch. The layer was interpreted as a paved outer area or farmyard. It was heavily trampled, and the finds could not be divided into the phases observed at the site, but a late deposition close to the establishment of the paving is suggested (Eidshaug and Sauvage 2018:99–100, Tab. 54).

Underneath the paved layer seven phases of settlement were identified. Phase one is estimated to have started *c.* 750 AD, with transition into phase 2 around 775/800 AD. Phases 2–4 include three superimposed longhouses, before the area was used as a waste deposit/midden area in phase 5. In phase 6, a log house was built and the settlement organisation changed before the settlement traces ceased and the stone layer and additional waste was deposited (Eidshaug and Sauvage 2018:31–33, Tab. 5). House 1 was a three-aisled longhouse, probably residential, *c.* 20 m in length, dated to *c.* 775/800–850 AD. It was followed by House 4, also a three-aisled residential building 15 m in length, dated to *c.* 800–875/900 AD. This was in turn replaced by House 3, a possibly one-isled longhouse of 11 m, which lasted until *c.* 950 AD. After a phase of waste deposition, the log building House 2 was constructed, *c.* 8.5 x 8.5 m, possibly a utility building for carpentry, dated *c.* 1000–1050 AD. Considering this stratigraphy against the key type, the key most likely derived from the settlement between 750 and 950 AD, but it may also have ended up in the trampled layer through the later activity.

The artefact assemblage from the three first phases at Steine was sparse, being more substantial in phases 5-8. Among the most notable finds were a gilded Carolingian strap mount in copper alloy with parallel finds to Birka and Kaupang, a gilded Insular harness mount that had been made into a brooch, a lead weight, two penannular brooches of possible Eastern origins, two Viking Age arrow heads, and a cruciform brooch from the Migration Period (Eidshaug and Sauvage 2018:124–136). Additionally, there were various iron tools for carpentry and/or leather-working, soap-stone vessels, iron slag, whetstones, large amounts of horse-shoe nails, burnt animal bones, and burnt clay.

The building structures and the artefacts indicate a farm settlement of a certain capacity and position, with evidence of trade and far-reaching contact networks (Eidshaug and Sauvage 2018:151–154). Furthermore, Steine is situated near Byneset Church. The farm was probably cleared in the Early Iron Age, later to become a royal farm in the 11th century, closely tied to the medieval church site. A stone church was built from 1140 AD, likely by the king's initiative (Eidshaug and Sauvage 2018:18–19, with references). On this basis, it is fair to consider the inhabitants of Viking Age Steine to have had a certain social standing.

Not far from Steine lies Torgård Vestre, where another 1A.2 key of iron was found in 2005 (T23515/1). As it is a single find, it should strictly speaking not be presented among these finds, but there are aspects that ties it to the settlement at Torgård, albeit indirectly.

Here, results from the large Torgårdsletta excavation project conducted in 2010 may offer a wider context for the find (Grønnesby 2010a, b).

Torgårdsletta is a ridge of moraine deposits where the modern-day farms of Torgård, Kvennild, Jesmo, and Haugen are situated. From late 18th and early 19th century descriptions, the ridge was covered with monumental mounds between the farms, where now practically all have been removed (Nygård 2011:5). The presence of settlements and burials were revealed by the 2010 excavations. At Torgård Vestre, the excavations produced evidence of agricultural settlements from the Late Bronze Age to the Viking Age, mainly postholes, hearths, cooking pits, cultural layers, and ard marks, and at least 20 burials (Engtrø 2011; Nygård 2011). Thus, the key could stem from a burial context, and its date to the Viking Age should also be considered tentative. Still, a 10th century burial with a casket locked by an AA2.2 lock was unveiled – a type corresponding to the 1A.2 key (T25133/165, Grave 117, Engtrø 2011). The burial was that of a female of a relatively high status, interred with oval brooches, an iron ladle, a needle case, glass and amber beads, sickle, whetstone, knife and shears. The long settlement continuity, monumental burial custom, and furnished burials indicate a socially and materially resourceful settlement. Taken together, the key and lock indicate the performance of locking caskets at Torgård in this period.

Northern Norway

In the last and northernmost region there are four settlements in Nordland County, three with keys and one with possibly a lock. The lock T7241b from Bleik on the island of Andøy was not located for this study and is therefore considered as indeterminate. Its description in the catalogue is sparse, a 9 cm long 'lock bolt' with a 6 cm long curved part, which may indicate a padlock shackle, possibly of a push-lock type. The settlement at Bleik was an Iron Age farm mound, partially investigated and studied by Roger Jørgensen (1984).

The farm mound consisted of accumulated cultural layers *c.* 55 x 65 m in size, located *c.* 160 m south of a larger, medieval farm mound (Jørgensen 1984:6). West of the settlement is a cemetery with 16 burials. The radiocarbon dates and the artefactual assemblage from the settlement outline an occupation period from the Early Roman Period to the Viking Age (Jørgensen 1984:60–67). The finds collected during the investigation includes a sword, two glass beads and an amber bead, knives, whetstones, a smoothing stone, spindle whorls, a possible weaving batten, fragments of soap-stone vessels and bucket-shaped pots, an iron fish angle, iron slag, and a collection of various worked and unworked whale bone and iron fragments. Previously collected finds at the site include an iron needle, bronze fibula, two arrow heads, and a Kufic coin. If the lock fragment is a padlock, it would typologically belong in the Late Iron Age, likely the Viking Age.

The evidence from Bleik indicates a long-lasting settlement of people that exploited the outfield and marine resources, especially whale. As for the Viking Age phase of the settlement, the finds point towards middle level status and involvement in far-reaching contact and exchange networks, which is also suggested by Jørgensen (1984:103–104).

The next site is on the mainland at Hunstad near Bodø. An iron key with a round handle was found here (Ts10039b), unfortunately it was not available for study. The round handle may indicate a turn key, but little more can be estimated at present. The site was excavated in 1992 and 1993, indicating a settlement lasting from the 6th to the 13th century, with a concentration in the Viking Age (Cruickshank 1995, 2002). There were eight houses with hearths and charcoal-containing pits. The stratigraphy was complex, both longhouses and square buildings superseded each other. The artefact material contained soap-stone vessels, baking slabs, loom-weights, spindle whorls, bone needles, whetstones, boat-rivets, iron slag, bone combs, knives, beads of amber, glass, and clay, bronze artefacts including a ring brooch, a silver coin (Olav Kyrre, late 11th century AD). One unusual find is what could be the top of a bishop's staff or crozier decorated in animal style and crucifix, most likely from the Christianization period (Cruickshank 1995:31).

The activities at Hunstad are mainly agricultural, with textile-working and production and refinement of iron. It is not characterised as a prominent site, at least not in the Viking Age. The find context of the key is not specified, and its date and use is thus not possible to determine with any specificity. The two remaining sites from Northern Norway, Lækkenga at Tjøtta in Alstadhaug and Arstad in Beiarn, are more informative in this respect.

An iron key of 1A.1 type (T19842d) was found at Lækkenga. This is a courtyard settlement or court site (also called NO *'ringtun'*, *'kretstun'* or *'tunanlegg'*), which is unique in this material. The key was found during excavations by Birgitta Wik in 1977, who later analysed the site in a published thesis (Wik 1983). The settlement is located on the island of Tjøtta. The settlement traces consist of ten buildings, with several other likely buildings, arranged in an oval formation, with a standing stone in the centre (for further descriptions of associated features see Wik 1983:18–21). Three buildings were excavated – Building A, B, and C – where the key was found in a potential hearth between the wall ditches of building B and C. While a charcoal sample was taken from this feature, it was not dated. The key type is continuous throughout the first millennium, so it does not contribute to determining a period of use. The buildings were dated by samples from hearths within the walls, providing building B with a date of *c.* 700–850 AD, and 510–645 AD for building C. The radiocarbon dates from the buildings span the Late Roman Period to the Late Viking Age, while the artefacts predominantly represent the Late Iron Age, as do the burial evidence and single finds (Wik 1983:24–25, Figs. 2 and 3). Thus, it is likely that the key was used in the Late Iron Age, possibly the Merovingian Period.

The other finds from the excavation include knives, whetstones, burnt clay, burnt bones, iron fragments, tree bark, and animal bones. The possible use of the key cannot be determined. For Modvo and Vikastølen it was discussed whether the shape and size of such keys could indicate locking of doors. Unfortunately, this key is severely fragmented and its proportions cannot be estimated fully. Still, because it is of similar type and variant, it is theoretically possible that it could have been used to secure the door of a building in the court. As at Vikastølen, the key is broken, and a similar interpretation of its deposition can be tentatively suggested – regardless of it being a door or a casket key.

The use and significance of the Tjøtta site and courtyard sites in general have been much debated (e.g. Berglund 1996; Grimm and Stylegar 2004; Iversen 2015; Johansen and Søbstad 1978; Olsen 2015; Snekkestad 2015; Stenvik 2017; Storli 2001, 2010). Interpretations have ranged from ordinary farms, chieftain's farms, thing sites with socio-political, judicial, and possibly military functions, multifunctional sites, and so on. What is beyond doubt, is that the settlement at Tjøtta was a dynamic and significant place, to which people would come from close by or far away to interact in various ways for shorter and longer stays. In such a setting, locking could have served several purposes in securing things and buildings, or locks and keys might have been commodities. As such, one can make broad comparisons to sites like Åker, Bjørkum, and Huseby/Kaupang.

The last site in this analysis is Arstad in Beiarn, which was excavated in the late 1960s by Gerd Stamsø Munch (1969, 1981, 1983). The excavation revealed a longhouse over 40 m in length with preserved cultural layers and large hearths. Four keys were found here, all of iron: two pull keys of 1A.2 type (Ts6513s, Ts6514e), a turn key of 2B.2 type (Ts6514cx), and a push key of type 3A.3 (Ts6514cy), the only example of this variant in the material.

About 450 post holes were identified, indicating several phases of house construction or repair. The house had at least two entrances, centrally placed opposite each other. Each had a stone slab for a door step, one *c.* 30 x 40 cm, the other 80 x 50 cm, the latter worn and indicating a main entrance (Munch 1981:20). The radiocarbon dates and artefact assemblage indicate occupation in the Viking Age, with some signs of activity around 1100 AD.

The finds included a gold finger ring, a silver arm ring or hacksilver, an oval brooch, a bronze penannular brooch, two bronze ring brooches, bone combs, loom weights, spindle whorls, whetstones, an axe, knives, a strike-a-light, a horse bit, glass droplets, a bronze pot fragment, soap-stone vessels and fragments, iron slag, animal bones, sea shells, rock crystal, bronze and iron fragments. The northern part of the house was rich in finds and is interpreted as a residential zone, with signs of cooking and textile-working, while the southern end may have been the byre. A large amount of finds were found outside the main entrance, suggesting a midden (Munch 1981).

All of the keys were found in association with the building. Two were located in the northern, residential area, one of these was outside the line of postholes along the walls – which led Stamsø Munch (1981:21–22) to suggest that it could have hung on a nail. In the same area iron and bronze fittings and rivets that could have belonged to chests and caskets were found (Munch 1981:22). Comparing the catalogue description to the published plan of the house with numbered sections, these keys were likely the two 1A.2 keys, which were found in section 25 (on the western side) and section 30 (on the eastern side). However, the plan does not specify which key Stamsø Munch related to the wall. She also stated that 'a lock and several keys' were found in this northern area, connected to the hearth, yet I have not managed to identify these finds. No lock parts or additional keys were identified in my study, but I did not examine all metal fragments from the site, so it is possible that there are additional devices among the finds. Nonetheless, based on these observations, it is likely that the two pull keys were used for containers inside the living area, which could have been locked by mechanisms such as the A6.2 or the AA1.2 or AA2.2.

The turn key and push key have an interesting find context. These were both found along with a bronze ring brooch in the eastern wall ditch at the centre of the building (section 32, Munch 1981:23). An oval brooch was found in the same ditch, and between the long central hearth and this ditch a small penannular brooch was found. The remaining ornaments – the gold ring, a needle and a bronze ring for a brooch (possibly belonging together), an oval brooch fragment – were from the northern residential area. The two keys could have been intentionally deposited with the ring brooch, maybe as an act of hiding them. They could also have been associated with the oval brooch, which was found deep in the ditch. There is insufficient grounds for interpreting the depositions as house offerings or part of a burial associated with the house walls, but it is worth mentioning. They could also have ended up in the ditch accidentally or due to abandonment and decomposition of the house.

The turn key and push key testify to the presence and contemporaneous use of both turn locks and push padlocks at Arstad. The turn key could have been used for a B1 lock, but the most likely is the BB1.2 type – both were used for caskets and larger chests. The bit has two pegs and a central aperture for a ward pin, which would fit this lock type. The push key belonged to a C1.3 lock, the larger variant of the box-shaped padlock. There are no identified examples of this lock variant in this material, but known parallels include the Mästermyr find (Arwidsson and Berg 1983). Padlocks were multi-functional, but the archaeological evidence has documented their use on caskets and chests. While this key on its own could have been regarded as belonging to the medieval activity at the site, its association with the turn key and ring brooch places it in the Viking Age. The keys from Arstad makes this the only site beside Kaupang with documented use of all three main types of locking mechanisms – which, notably, could only be possible at Viking Age sites. The main impression is that the locks and keys were used for in-house storage, possibly valuable artefacts and materials. The presence of several lockable containers and of artefacts for personal adornment and trade point towards the possibility that the containers were used for such items. They could also have served in relation to the activities identified in the central and northern areas, which included textile-working and cooking, and for the keeping of personal and practical tools such as combs, knives, whetstones, and so on.

The evidence from Arstad indicates a settlement based on agricultural activity, fishing, and hunting, but also one involved in local and far-reaching contact networks. The soap-stone points to regional import, the hacksilver suggests engagement in trade, the penannular brooch is of an eastern type with rolled-up ends, and the gold ring has parallels to the south-east towards Skåne and Gotland in Sweden (Munch 1981:24). Thus, this household was clearly resourceful, leading a life of relative wealth.

Locking at settlements

The main observation from the settlement evidence is that locks and keys are found at a wide range of settlement sites with various forms of buildings, organisation, activities, and subsistence. The sites can be broadly characterised as agricultural farm settlements with economic surplus, multifunctional sites with central locations, places of specialised craft-working, trade and exchange, as well as places of outfield exploitation. The finds are closely related to the main buildings and activity areas, as well as specialised buildings at the sites. In terms of social stratification, the locks and keys are associated with people belonging to relatively resourceful and high-standing social groups and to craft specialists.

Chronologically, the Roman Period finds from Vik in Ørland and (possibly) Seberg in Ringsaker are related to large farms in agricultural areas and specialised workshops with a presence of upper-strata individuals. In the Migration Period, locks and keys are more widespread, occurring at specialised farm sites like Modvo and possibly Åker, as well as outfield sites such as Mogen and possibly Vikastølen. The latter may belong in the Merovingian Period, when locking activity at Åker is also more firmly established. The rest of the sites are primarily Late Iron Age or Viking Age, displaying a varied distribution of locks and keys. The outfield connection is continued and most likely supplemented by seasonal farming and shieling activity, as well as iron extraction and processing (e.g. Totakvann, Vikastølen, and Dokkfløy). There are also larger farms of relatively high status, some with traces of craft-specialisation, such as at Arstad, Moi, Stedje, Steine, and Bjørnstad, possibly also Sømmevågen. A prominent part of the locks and keys come from sites with high-level settlements, central functions, specialist craft-working, and wide contact networks in the Iron Age (e.g. Åker, Kaupang, Huseby, Bjørkum, and Tjøtta).

As for the use of locks and keys at Iron Age settlement sites, the overarching impression is that locks and keys could have been used by a range of persons with different tasks and life styles. The locking of doors is suggested at Modvo and Vikastølen, and could be a practice present at other settlement sites in the latter half of the first millennium. Lockable containers, particularly small boxes and movable caskets, could have had variable uses depending on the settlement type, the activities performed, the persons' social standings and roles in the household or group. As I will discuss in Chapter 9, the applications of locks and keys were varied rather than uniform – or, they were uniformly applied by a broad range of people leading different lives and performing various activities. Technologically, the pull mechanisms are the dominant type. This is reasonable for the Roman to the Merovingian periods, as these were the only available locks, but in the Viking Age their domination is more notable. Turn keys are only present at the urban settlement of Kaupang and at Arstad, which is in stark contrast to the wide distribution presented in 7.2.3, of which most are burials. The burial finds demonstrate that turn locks were more widely applied than the settlement sites indicate, on the other hand, pull locks and turn locks may have been used and deposited differently. That turn keys and locks are predominantly found in burials may indicate that they were considered exclusive rather than commonplace objects.

Regarding the settlement evidence as a whole, the contribution of Arstad to this study is considerable. As it is one of the settlements with the richest evidence of keys (and indirectly locks) in context, it serves as a very useful starting point for understanding how locking was used to organise life at Iron Age settlements of various periods and types. Arstad is a site that more than any of the others provides a glimpse into the home, into the living space of a household and how it is organised. In my view, starting from the home is central to understanding everyday practices, because the home is the main arena for lived life, for socialisation and organisation, implementation of ideas and norms, and ways of doing (e.g. Eriksen 2019). For instance, Stefan Brink (2008:20) has suggested that Scandinavian guilds and military retinues were modelled on the structure of the family, held together by personal bonds and internal jurisdiction – arguably, building on familiar ways of doing. In line with such a view, the organisations established at home may have been decisive for how locking practices would be conducted elsewhere and in different social groupings, e.g. in a workshop context, at a market, at a seasonal settlement, during a military campaign, or indeed, in the burial ritual.

At Arstad, the keys are found in the residential area and not in the byre area, as are the possible remains of caskets and chests. Thus, locking may primarily have been related to the things and tasks within the main living quarters. Hence, this may also be the main context of their boundaries and effects, in terms of social and spatial organisation. Lockable containers seem to have been kept where residents moved about and slept, indicating a close relationship to the locked things, ensuring control and accessibility. This may be used as a parallel to other sites where keys and possible containers may have been placed indoors, such as Åker, Bjørkum, Stedje, Modvo, Mogen, Vikastølen, Dokkfløy, and Vettre, and to those where keys and locks are found in the vicinity of the house. Additionally, in terms of furnishings with caskets and chests, Arstad's closest parallel is in fact the Oseberg burial chamber, the contents of which provides unique insight into the assemblages of elite households (Grieg 1928:283).

In terms of who could have used locks and keys at the sites presented here, the overall tendency points towards people of middle to high social status, although there is some variation between different context types, landscapes, and periods. Social roles and occupations that may be discerned are specialised crafts people, resourceful farmers, persons involved in trade and exchange, in outfield exploitation such as extracting, processing, and exchanging iron, and hunting and trading wild animal resources such as fish, fur, and antler. The keys and locks could also have belonged to people with prominent socio-political positions and cultic tasks. Naturally, these individuals would also have familial positions, being leaders or members of households, young or old. Alternatively, they could be alone or linked to other social groups, such as travelling merchants, itinerant workers, warriors, and so on. Persons with mobile life styles would need to keep possessions secure while travelling and staying at various places, both for keeping order and for reducing the risk of theft or loss. The same could be true for settlements with a high turnover of people, such as large farms and places with central functions (cf. social transparency and trust in 3.7.1).

The main characteristic of the settlement sites with locks and keys points towards the resourceful and the elite, and towards specialised craft. The question is how these observations compare to the burial record. One aspect is to which degree the use of locks and keys in funerary contexts are representative for their use in living society; another is whether the individuals with locks and keys in their graves are reflecting their lived life, and the variation in social roles, occupations, and activities as discussed here. This is particularly interesting in terms of gender and social roles, which has been a prominent topic in earlier research (2.3.3).

8.1.3 The burial evidence

The funerary custom of depositing keys and locks (i.e. padlocks and/or lockable containers) in burials did fluctuate yet was continuous throughout the first millennium AD. Following the patterns established in the former chapter, the tendency in the burial record is characterised by a generally increasing rate of deposition from the 1st century onwards that reached its peak in the Early Viking Age, later to decline towards the period's end.

Table 8.3 below illustrates burials containing locks and keys, their number, external burial form, and bodily treatment. The Roman Period burials numbered 22 in total, rising to 57 in the Migration Period. These were primarily monumental burials in both periods, either cairns or mounds. In the Roman Period, there is a nearly equal number of cremations and inhumations, while inhumation is the dominant bodily treatment in the Migration Period. The number of graves drop to 43 in the Merovingian Period. The majority are still monumental burials, but unmarked graves (i.e. without discernible mound or cairn) are more common, and there is a slight majority of inhumations over cremations. Moving into the Viking Age, there are 285 burials with locks and keys, 168 of which can be placed into the Early Viking Age. Of the 58 dated to the Late Viking Age, many have dates reaching back to 900 AD, so the number of lock and key burials before 950 AD may be higher. Some of the 59 burials dated generally to the period may also belong in this early phase. The majority are monumental burials, with some unmarked graves, singular cases of stone settings and possibly a mortuary house. Inhumations are slightly more common in the Early Viking Age, but the ratio is near equal for the entire period. Adding the more broadly dated and transitional finds, the number of determinate Iron Age burials with locks and keys is 447.

Period	**Bodily treatment**			**Burial Total**	**External burial form**			
	Crem.	***Inhum.***	***Unkn.***		***Mound/Cairn***	***Unmarked***	***Other***	***Unkn.***
RP	10	8 (1)	3	*22*	19 (1)	1		1
MP	8 (2)	38 (4)	5	*57*	48 (2)	3 (1)		3
EIA	4	1	1	*6*	5		1	
MVP	16 (2)	21 (1)	3	*43*	29	12 (1)	1	
Tr. f.	4 (1)	3	1	*9*	5 (2)			2
EVA	58 (5)	79 (3)	23	*168*	110 (11)	32 (4)	2 (1)	8
LVA	29	21 (1)	7	*58*	39 (3)	9 (3)		4
VA	19 (1)	14 (1)	24	*59*	48	3		8
LIA	9	10 (1)	3	*23*	17	3 (1)	1	1
IA		1	1	*2*	2			
Total	157 (11)	196 (12)	71	*447*	322 (19)	63 (10)	5 (1)	27

Table 8.3: Chronological overview of determinate burials with locks and keys with regards to bodily treatment (left) and external burial form (right). Potential cases are presented in parentheses.

Period	**Burials with keys**	**Burials with keys & container**	**Burials with locks**	**Burials with locks & keys**	**Burial Total**
B1-B2			1	3	4
C1-C3	6 (1)	2 (1)	1	5 (1)	14
RP			3	1	4
RP total	*6 (1)*	*2 (1)*	*5*	*9 (1)*	*22*
D1	6 (1)				7
D2	29 (2)	4 (1)	3 (1)	2	37
MP	12			(1)	13
MP total	*47 (3)*	*4 (1)*	*3 (1)*	*2 (1)*	*57*
EIA	3 (1)		2		6
EIA total	*56 (5)*	*6 (2)*	*10 (1)*	*11 (2)*	*85*
Phase 1	6		(1)		7
Phase 2-3	18 (1)	1 (1)	5	5 (1)	30
MVP	4	1	1	1	6
MVP total	*28 (1)*	*2 (1)*	*6 (1)*	*6 (1)*	*43*
Tr. f.	*4*		*3 (1)*	*1*	*9*
EVA	72 (10)	6 (6)	43 (4)	36 (3)	168
LVA	18	1 (1)	16 (1)	21 (2)	58
VA	36	9 (1)	13	7 (3)	59
VA total	*126 (10)*	*16 (8)*	*72 (6)*	*64 (8)*	*285*
LIA	13 (3)	2 (1)	4	1 (2)	23
LIA total	*171 (14)*	*20 (10)*	*85 (7)*	*72 (11)*	*360*
IA	2				2
Grand total	***229 (19)***	***26 (12)***	***95 (8)***	***83 (13)***	***447***

Table 8.4: Chronological overview of determinate burials with locks and keys, demonstrating the respective occurrences between burials with keys, with locks, and with both keys and locks. Potential cases are presented in parentheses. The burials with keys and containers are extracted from the number of burials with keys.

Although the presence of locks and keys in burials is generally continuous, the same cannot be said for the deposition of keys and locks on their own or together. Table 8.4 above presents the respective number of burials that have identified only keys, only locks, and both in combination, with the potential cases separated into parentheses. The potential burials with both keys and locks indicated may depend on either an indefinite lock or an indefinite key. The numbers do not take into account the presence of multiple locks or keys.

No graves contain only keys in the Early Roman Period, they contain either locks and keys together or locks alone. This changes in the later phase, where burials with keys are almost equal in number to burials with locks and keys or locks alone. Also, some of the keys-only burials have signs of having held a container, which could have been locked. For the entire period, locks and keys combined is the most common feature, with 9 (1) burials against 5 with locks and 6 (1) with keys. This is in contrast to the Migration Period, where burials with keys far outnumber the rest. Out of the 57 burials, 47 (3) have keys only, against 3 (1) with locks only and 2 with keys and locks. The ratio is softened somewhat by the 4 (1) burials with keys that have signs of containers.

The ratio is largely maintained in the Merovingian Period, with a total of 28 (1) burials with keys against 6 (1) with locks and 6 (1) with locks and keys present. As illustrated above, there are no locks in burials from the early phase, and the majority belong within the 8th century AD. Moving into the Viking Age, the marked discrepancy between burials with locks and keys is significantly lessened. The majority are still burials with keys – 126 (10) – but the number of burials with locks alone or with keys and locks are much higher: 72 (6), and 64 (8), respectively. Additionally, 16 (8) of the burials with keys may have held containers.

The overview shows that burials with only keys make up 51–55 % of the burials. As discussed in 4.1, there are several source-critical factors that may influence this relation, such as higher preservation, identification, and collection of keys over locks. This is illustrated by the number of burials with keys that have identifiable presence of containers, usually handles. While it cannot be determined whether these containers were lockable, or indeed that they could have been operated by the keys in the grave, it emphasises that burials with keys need not have been as dominant as the numbers indicate. Regardless, the proportions demonstrate that the whole mechanism – or the whole locked thing – was not always desirable or necessary to include in a funeral assemblage.

Considering these general quantitative results, the continuity of including locks and keys in burial rituals is not to be equated with a common and generally applied burial practice. The total number of 447 burials is quite low considering they cover a thousand years. The highest number is observed in the Viking Age, particularly the early phase, but even here the practice is uncommon. It has been suggested that *c.* 6000–8000 burials from the Viking Age have been discovered in Norway (Solberg 2003:222; Stylegar 2010:71). Based on those estimations, the 285 lock and key burials presented here only make up *c.* 3.6–4.75 %. This ratio corresponds to estimations made in my earlier work on Eastern-Norwegian keys (Berg 2013), and in works on Danish and Swedish burials (e.g. female graves studied by Pantmann 2009:76; and Birka graves by Ulfhielm 1989:122–123). I would argue that it was even rarer to deposit locks and keys in burials prior to the Viking Age, considering the much lower numbers from the previous periods (Table 8.4). So, even though the total number of documented burials from this time span is not fully known, at no point during the Iron Age in Norway were locks and keys a common part of funerary customs.

Thus, the persons that were interred with such artefacts were a minority, regardless of period. One reason for this could be related to a limited access to locking devices, as estimated in 7.3. The two notable increases that occurred in the Late Migration Period and the Early Viking Age both coincide with convincing signs of local and regional production, which would increase accessibility. Another reason could be that the attitudes towards what was considered appropriate to put into burials differed temporally and culturally. In relation to this, specific social factors that determined whether or not locks and keys were selected as grave goods for particular individuals may have come into play. As mentioned, this relates to the social distribution of locking devices and which persons had the possibility and right to lock and be interred with these items. It is not certain that the two are entirely overlapping. Although the individuals buried with locks and keys most likely had rights of use, this does not necessarily mean that those that were not buried with locks and keys lacked access to locking devices and related rights. Still, their presence in burials is the most tangible link to the 'carriers-out' of locking practices, and by discerning the characteristics of these persons the social context of locking can be discussed. Two central aspects in this relation are gender and social status, which are common parameters for estimating the socially significant characteristics of individuals and the communities they belonged to.

Gender and social status

Gender is one of several central factors involved in the definition of a person's identity, social roles, rights and obligations, and means of subsistence (Moen 2019 with references). A consideration of gender markers in lock and key burials is therefore an important step in situating locking in a 'social landscape'. Many of the artefacts used for gender determination are also common indicators of statuses, tasks, and resources (cf. Table 4.3), which allows for regarding possible links between locks, keys, and people with various abilities and positions. There are notable challenges with relating burial assemblages to the lived lives of individuals (cf. 4.3.1), but some general suggestions may be made through a macro-scale analysis.

The 447 burials will therefore be investigated in the following in terms of perceived social gender and status. The approach is largely quantitative, addressing the general tendencies in the material considered by chronological period. It also involves a qualitative study of particular lock and key types which is aimed as assessing potential differences related to gender and status in the social access to and use of locking devices.

Period	**M**	**M?**	**F**	**F?**	**M/F**	**M/F?**	**F/M?**	**Ind.**	**Total**
B1-B2			3		1				4
C1-C3	2		9		1			2	14
RP								4	4
RP sum	*2*	*0*	*12*	*0*	*2*	*0*	*0*	*6*	*22*
D1	1		6						7
D2	5		25	1	2			4	37
MP	1		6	2				4	13
MP sum	*7*	*0*	*37*	*3*	*2*	*0*	*0*	*8*	*57*
EIA								6	6
EIA sum	*9*	*0*	*49*	*3*	*4*	*0*	*0*	*20*	*85*
Ph. 1			3	2	1			1	7
Ph. 2-3	12		18						30
MVP	1		1	2				2	6
MVP sum	*13*	*0*	*22*	*4*	*1*	*0*	*0*	*3*	*43*
Trans. f.	*7*		*1*					*1*	*9*
EVA	59	3	83	2	13	3	1	4	168
LVA	19		31	1	6		1		58
VA	12	4	8	4	3	2		26	59
VA sum	*90*	*7*	*122*	*7*	*22*	*5*	*2*	*30*	*285*
LIA	5	1	3	2				12	23
LIA sum	*115*	*8*	*148*	*13*	*23*	*5*	*2*	*46*	*360*
IA								2	2
Grand total	***124***	***8***	***197***	***16***	***27***	***5***	***2***	***68***	***447***

Table 8.5. Chronological and quantitative overview of gender-determined burials with locks and keys.

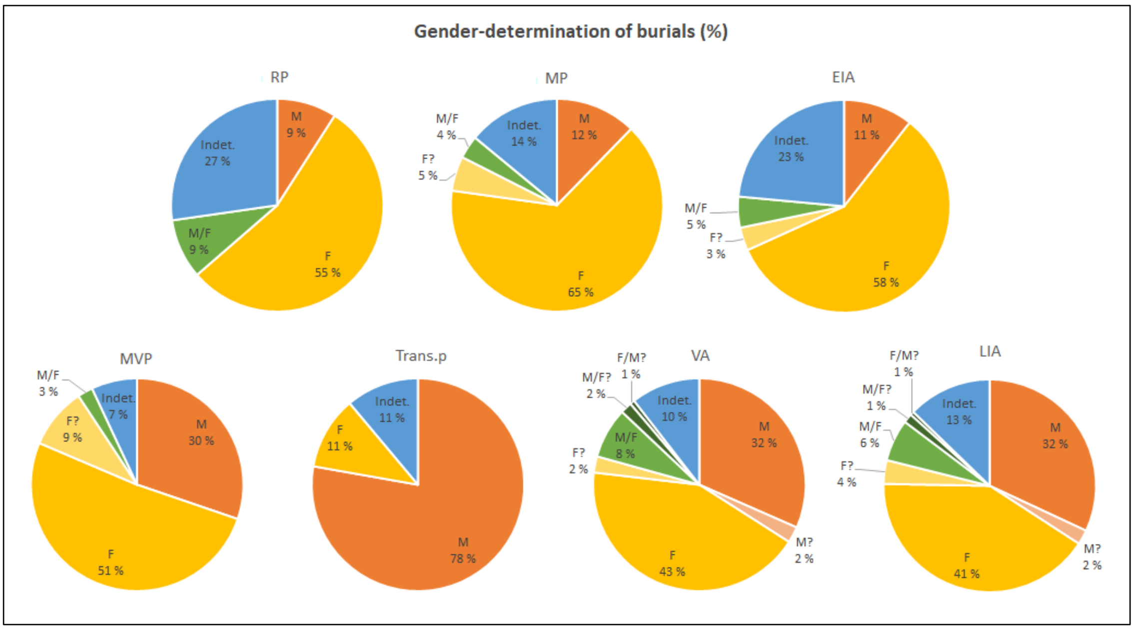


Figure 8.7. Pie charts of gender-determined burials by percentage, illustrated by periods and Early and Late Iron Age (Illustration: H. L. Berg).

Table 8.5 above presents the broad numbers of gender-determined burials, conducted using the criteria outlined in Table 4.3. The numbers are illustrated in percentages in Figure 8.7 below. Of the 22 Roman Period burials, 2 are determined as male, 12 as female, 2 with markers for both genders, and 6 with indeterminate gender. In percentages, the female burials constitute 55 %, the indeterminate ones 27 %, and the male and male/female ones 9 %, respectively. In the Migration Period, the 57 burials constitute 37 (3) female burials, 7 male, 2 of both genders, and 8 indeterminable. Here, the female percentage is higher than in the Roman Period, 65 (4) % , the indeterminate 14 %, the male 12 %, and the male/female 4 %. In the Merovingian Period, the difference between the male and female genders is less pronounced. Of 43 burials, 22 (4) are determined as female and 13 as male, with 1 male/female, and 3 indeterminate. The female percentage is lowered to 51 (9) %, which is still high, while the male percentage increases to 30 %, with the indeterminate lowered to 7 % and burials with both genders constitute 3 %. As for the burials considered as transitional, these 9 burials constitute 7 male, 1 female, and 1 indeterminate, giving a respective percentage of 78 % for male burials and 11 % for the female and indeterminate. This unusual result may derive from challenges with situating weapon types on either side of the periodical divide. However, an increase in male burials with keys and locks is a marked development in the Viking Age, a development which seems to begin in the 8th century. Here, of 285 burials, 90 (7) are male, 122 (7) female, 22 with both genders, 5 with determinate male and indeterminate female, 2 with determinate female and indeterminate male, and 46 indeterminate. This results in a less marked gender differentiation, with 43 (2) % being female and 32 (2) % being male, 8 (3) % male/female, and 10 % indeterminate. Comparing the Early and the Late Iron Age, the female burials decrease from 58 (3) % to 41 (4) %; the male ones increase from 11 % to 32 (2) %; the burials with both genders increase slightly from 5 % to 6 (2) %, and the indeterminate sink from 20 % to 13 %.

Thus, the overall tendency is that depositing keys and locks as part of funerary rituals was most common in female-gendered burials for the entire first millennium AD, but it was never a practice reserved for females. The only phases where there are no male burials with locks and keys is the Early Roman Period and the Early Merovingian Period, but there are locks and keys in burials with both genders, and indeterminate burials dated generally to the period, which may belong in these early phases. The highest level of female burials with locks and keys is in the Migration Period. Correspondingly, the ratio of male burials is low in the Early Iron Age, but the total number of lock and key burials is low as well, so the relationship is susceptible to change in the event of future finds. Male burials increase markedly from the Late Merovingian Period and throughout the Viking Age. Of the burials dated to the Late Viking Age, the number of male burials is somewhat higher than female burials. If the transitional finds belong before 800 AD, the ratio between male and female burials is nearly equal in the Late Merovingian Period. The burials with indeterminable gender could influence the patterns presented, tipping the percentages in either direction.

Now, the overview in Table 8.5 also indirectly communicates social differentiation in the deposition of locks and keys in burials. As mentioned above, the artefacts considered to be gender markers are often markers of social status, commonly jewellery, dress ornaments, and weapons. Thus, the patterns suggest that the majority of lock and key burials were for persons belonging to or connected to the upper strata of society. This is also visible in the high number of monumental burials (Table 8.3), the domination of which cannot be fully explained by archaeological excavation activity (4.3.1). The indeterminate burials indicate that locks and keys also occurred with persons that for various reasons were not commemorated with gender/status artefacts; they and their kin may have been of less prominent social standing or affluence, social gender identity may have been less important to emphasise, or their status and/or gender may have been marked in a way that archaeologists struggle to identify or recognise (e.g. Moen 2019:128–129). Burials with indeterminable gender may also be disturbed and poorly preserved.

Adding up the gendered and the indeterminate burials, respectively, and generally viewing them as reflective of higher and lower status burials, the results illustrate a significant amount of prominent individuals and communities – regardless of period. As illustrated in Table 8.6 below, the share of gendered burials per period ranges between *c.* 73 % to 90 %, so that being buried with locks and keys was predominantly an elite feature throughout the Iron Age. That locks and keys were primarily used by the elite is therefore a strong possibility, but this practice may not have been as dominant as the burial record suggests. The settlement evidence showed locking devices to be present at places that most likely were occupied by people from different social strata, ranging from farmers and hunters to craftspeople, traders, and leaders. The depositions also demonstrate a link to metalworking and trade. Thus, the elite connection to locking could be strongly influenced by burial customs, and alongside the burials with indeterminate gender, the social distribution of locking could have been more diverse than what is immediately observable.

Period	**Gendered**		**Possibly gendered**		**Indeterminate**		**Total**
B1-B2	4	100.0 %					4
C1-C3	12	85.7 %			2	14.3 %	14
RP					4	100.0 %	4
RP sum	*16*	*72.7 %*			*6*	*27.3 %*	*22*
D1	7	100.0 %					7
D2	32	86.5 %	1	2.7 %	4	10.8 %	37
MP	7	53.8 %	2	15.4 %	4	30.8 %	13
MP sum	*46*	*80.7 %*	*3*	*5.3 %*	*8*	*14.0 %*	*57*
EIA					6	100.0 %	6
EIA sum	*62*	*73.0 %*	*3*	*3.5 %*	*20*	*23.5 %*	*85*
Ph. 1	4	57.1 %	2	28.6 %	1	14.3 %	7
Ph. 2-3	30	100.0 %					30
MVP	2	33.3 %	2	33.3 %	2	33.3 %	6
MVP sum	*36*	*83.7 %*	*4*	*9.3 %*	*3*	*7.0 %*	*43*
Tr. f.	*8*	*88.9 %*			*1*	*11.1 %*	*9*
EVA	155	92.3 %	9	5.3 %	4	2.4 %	168
LVA	56	96.5 %	2	3.4 %			58
VA	23	40.0 %	10	16.9 %	26	44.1 %	59
VA sum	*234*	*82.1 %*	*21*	*7.4 %*	*30*	*10.5 %*	*285*
LIA	8	34.8 %	3	13.0 %	12	52.2 %	23
LIA sum	*286*	*79.4 %*	*28*	*7.8 %*	*46*	*12.8 %*	*360*
IA					2	100.0 %	2
Total	*348*	*77.9 %*	*31*	*6.9 %*	*68*	*15.2 %*	*447*

Table 8.6. Quantitative overview of the indicated gender and social prominence of the lock and key burials, illustrated in percentages.

Lock and key types in gendered burials

One aspect that has not been studied to any degree is whether specific lock or key types were related to persons of a certain social gender, role, or strata. This may give an impression of whether certain forms of locking was delimited to specific individuals, positions, groups, social spheres, and situations. A qualitative summary of which key types and variants that are found in the gendered and indeterminate burials is presented in Table 8.7. The overview is based on definite locks and keys from secure burials. The transitional finds and those with broader dates are omitted to provide an outline by period.

There are a few signs of gender differentiation in the Roman Period. The A2.1 and A5 lock are from female burials, as is one 1A.1 key of copper alloy, otherwise the 1A.1 keys of iron and the A1.1 locks occur in burials of either gender, both genders, and the indeterminate burials. In the following period, the 1A.1 and 1A.2 keys occur in both materials, while 1A.3 keys occur in only copper alloy, as does the new type 1B.2. The copper-alloy keys generally appear in female burials in the Migration Period, but there is one 1A or 1B key of copper alloy in a burial determined as male. Thus, copper alloy keys seem to be related to women, but the picture is not clear-cut. The appearance of 1A keys of copper alloy in indeterminate burials may suggest that these are female. In terms of the locks, the A6-type has the firmest basis in female graves, but is also indicated in male burials, and in burials with both genders. The one AA1.2 lock from this period is from a female burial, which is not sufficient to consider this lock type as restricted to women.

This is illustrated in the Merovingian Period, when this lock variant appears in both female and male burials. The more elaborate variant AA1.3 appears in male burials, as does the possible A6.2 type. The A7 lock and its 1E key have currently not been identified in a gender-determinable burial, in this period or the Viking Age. As for the keys, the pull keys are now all iron – with one exception, a 1A.3 key from an indeterminate burial that could be a Migration Period key in a later grave. The male burials display the highest variety in pull keys in this period, while the earliest turn keys (2B.3 and 2A/2B) that appear are in copper alloy and appear in female burials, except for one iron 2B.2 key from a burial with both genders indicated.

Gender	Roman Period			Migration Period			Merovingian Period			Viking Age		
	Key iron	*Key copper alloy*	*Lock*	*Key Iron*	*Key copper alloy*	*Lock*	*Key Iron*	*Key copper alloy*	*Lock*	*Key iron*	*Key copper alloy*	*Lock*
Female	1A.1	1A.1	A1.1, A2.1, A5	1A.1, 1A.2	1A.1, 1A.2, 1A.3, 1B, 1B.2	A2?, A6.1, A6.2, AA1.2	1A.1, 1A.2,	2A/2B, 2B.3	AA1.2	1A.1, 1A.2, 1A.3, 1B.1, 1B.2, 1B.3, 1C, 2A.1, 2A.3, 2B.2, 2C	2A.1, 2A.2, 2B.3,	A3, A4, A6.1, A6.2, AA1.1, AA1.2, AA1.3, AA2.1, AA2.2, AA2.3, AA3, B1, BB1.2, BB2
Female?				1A/1A.1	1A/1A.1		1A.1, 1A.2			1A.1, 1A.2, 1B.2,	2B.3	AA2.2 BB1.2
Male	1A.1		A1.1	1A.1	1A/1B	A6?	1A.1, 1A.2, 1A.3, 1A.4/1B.4, 1B.2		AA1.2, AA1.3, A6.2/B1	1A.1, 1A.2, 1A.3, 1B.2, B.3, 1C, 1D, 2A.3, 2B.1, 2B.2, 2B.3, 3E	2A.2 *Both materials:* 3A.2	A6.2, AA1.2, AA1.3, AA2.2, AA2.3, B1, BB1.2, BB1.3, BB2, BB4, C1.1, C1.2, C3.1, C4, CC1, Clasp hasp
Male?										1A.2, 1A.3,	2A/2B, 2B.3	A6.2, A6.2/B1, BB2
Male/ Female	1A.1		A1.1	1A.1		A6.1	1A, 2B.2			1A.1, 1A.2, 1A.3, 1B.1, 1B.2, 3E	2B.3,	A6.1, A6.2, AA1.2, AA2.2, AA2.3, CC1
Male/ Female?										1A.1, 1A.2, 1B.3, 2C.2		A6.1, A6.2, AA1.2, AA2.2, AA2.3, CC1
Ind.	1A.1, 1A.2?		A1.1	1A.1	1A.1, 1A.2, 1A.3, 1B.2		1E	1A.3	A7	1A.1, 1A.2, 1A.3, 1B.2, 2A.1,	2A.3, 2A.4, 2B.3, 3A.2 *Both materials:* 2A.3	A6.2/AA2.2, A7, AA2, B2, C1.2

Table 8.7. Qualitative overview of lock and key types in burials by gender determination, with the keys separated by material.

There is a wide variety of types and variants in both the female and male burials in the Viking Age. The most notable observations is that no push keys or locks are related to female burials. Type 3A.2 keys and C1 padlocks are only identified in male burials, which differs from Swedish finds, where padlocks are found in female burials (e.g. Ulfhielm 1989). Also, 3E keys and CC1 locks appear in male or burials with both genders, which differs from Danish finds, where female burials contain the closely associated push lock type CC2 and 3F keys (Roesdahl 1977). Other types that may be male are 1D keys, the BB4 lock, C3.1 lock, C4 lock, and the mounted use of padlocks indicated by clasp hasps, but these are so few in number that a male tendency is only suggested. Types that seem to appear only in female burials are the 1B.1 key and AA1.1 lock, the 2A.1, 2B.1, and potentially 2C keys. The lock types A3 and A4 may also be associated with females, but occur only in one find. Likewise, AA3 lock is only documented in female burials, but the 1C key is present in male burials as well. The types that have not been found in gender-determinable burials are the B2 padlock type, the iron and copper alloy 2A.3, and the 2A.4, in addition to the A7 and 1E mentioned above. Additionally, lock hasps with copper-alloy animal heads, which occur in four Viking Age burials with confirmed or suggested turn-and-slide locks, are gendered female in three cases and one male, so this is not a feature exclusive to gender.

To summarize, there are certain tendencies that specific lock and key types were gendered, while others were not. Largely, small sliding lid boxes and lifting lid caskets and chests were not gender exclusive. Bucket-shaped caskets with bolted lids could have been designated for females, while padlocks seem to have been primarily male – at least in this material. Copper alloy keys are more common in female burials, but are not exclusively restricted to women on material basis alone. The picture is rather convoluted, and gender may not have been the main parameter for determining what type or materials the different individuals were interred with. The presence and use of locks and keys in the various burial contexts could provide more perspective on these matters.

The general tendencies show that there were few notable differences in social access to locking devices based on gender, with the potential exception of padlocks. While there is a quantitative difference in favour of female burials and a closer association between women and decorated copper alloy keys, it cannot be assumed that men had less access to or used locks and keys less than women. Prominent social status is a more marked characteristic than gender. Thus, I would argue that the access people had to locking devices was primarily related to their social standing, potential affluence, and significance in society, as well as the general prominence of the social communities the persons were part of. This corresponds to the impression made by the settlement evidence, which demonstrated a close connection to large rural settlements, central functions, craft organisation, and outfield resources.

The locking devices in the burials as well as the settlement sites mainly appear to be have been used for securing containers. What was kept in these containers will be considered by discussing the burial evidence. First, it is necessary to consider burials with keys that were not used for containers, but for doors.

8.1.4 Burials with potential door keys

Three potential door keys were presented among the settlement and depositional finds. In addition, there are seven keys from burials that may have been used for doors. These are listed chronologically in Table 8.8 below and spatially illustrated in Figure 8.8. The main criteria for suggesting that the respective keys could have been door keys are size and dimensions in relation to the type. As illustrated by the three keys described earlier, keys with uncommon traits and without a corresponding lock are considered as potential candidates. In these burials, the keys are either found without locks or with locks that they could not have operated. Notably, their inclusion on this list is considered a tentative interpretation of their use. It is generally challenging to define a specific measurement or characteristic that separates door keys from other keys, so those in Table 8.8 are a qualitative selection.

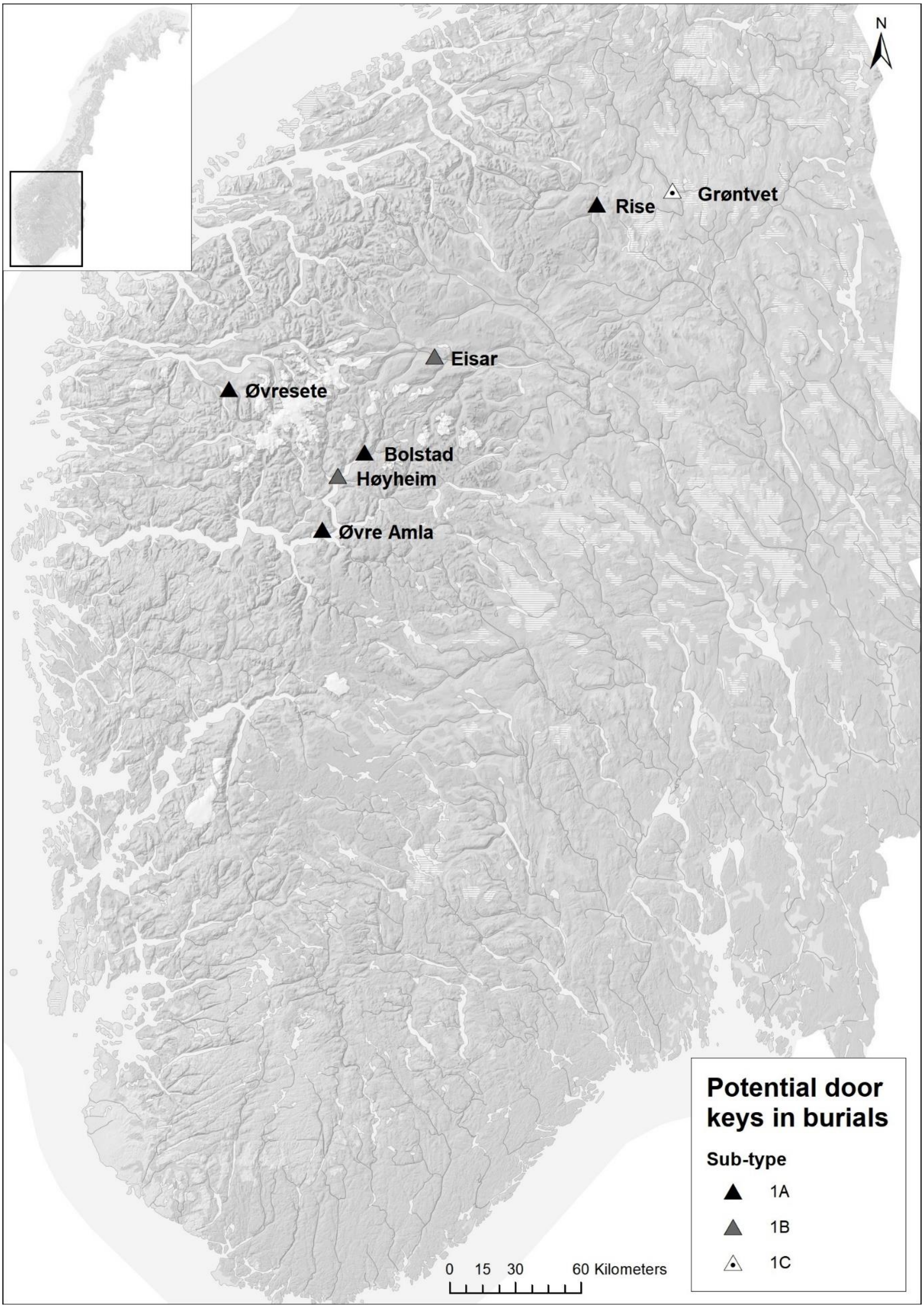


Figure 8.8. Map of potential door keys in Iron Age burials, illustrated by sub-type and farm name (Illustration: H. L. Berg).

ID	Key type	Size Weight	Gen. Body	Associated finds	Farm	Date (AD)
B6732b	1A.1 iron	19.6 cm 40.8 g	Male Cremation	Spear, bucket-shaped pot, rivets	Øvresete, Gloppen, Sogn og Fjordane	400–550
B4165f	1A.3 iron	19.0 cm 62.5 g	Male	Axe, horse bit, knife, arrow head, shears, iron strap buckle, shield boss + two iron keys (1A.1, 1A.2)	Bolstad, Luster, Sogn og Fjordane	650–700
B10447e	1A.2? iron	28.4 cm 95 g	Male Inhumation	Axe, knife, 2 stirrups, horse bit, shears, strike-a-light, whorl, iron pot, 2 casket handles	Øvre Amla, Sogndal, Sogn og Fjordane	700–800
C25880f	1C iron	13.5 x 4.9 cm 50.5 g	Female	Oval brooch, button-on-bow brooch, 2 copper-alloy bracelet rings, weaving batten, shears, *'vevreell'*, knife, casket hinge?	Grøntvet, Tynset, Hedmark	800–850
B7066e	1B.3 iron	25.5 x 14.4 cm 295.7 g	Female Cremation	Weaving batten, iron staff, shears, *'vevreell'*, spindle whorl, casket (hasp for AA/BB/CC lock and hinge) + iron key (1A.2, B7066f)	Høyheim, Luster, Sogn og Fjordane	900–1000
T4300	1A.1 iron	*c.* 23.0 cm 48.1 g	Male? Mixed	Axe, hammer, 3 arrow heads, strike-a-light?, chain link, awl, horse bit, iron rings (harness?), copper-alloy ring pin, 2 whetstones, iron fitting + 3 iron keys (1A.1, 1?, T4301–03)	Rise, Oppdal, Trøndelag	800–1050
C9964a	1B.2 iron	19.5 x 11.5 cm 139.8 g	Female? Inhumation	Weaving batten, awl, iron fragment	Eisar, Sjåk, Oppland	800–1050

Table 8.8. Chronological overview of keys from burials that could have operated door locks.

The first key is from the Migration Period, from a male-gendered grave at Øvresete in Breim, Gloppen, Sogn og Fjordane (B6732b). This is in the same general area as the other potential door key from this period at Modvo in Luster. While the Modvo key was of the 1A.2 variant, the Øvresete key is a 1A.1 type. It is 19.6 cm long and has a long and slightly upwards-curved hook (Figure 8.9, left). It could possibly have been used to move a sliding bolt mounted on the inside of a door, as suggested for type AA4. The width of the hook would have accommodated a wooden bolt, which would have been wider than a casket lock, and the curve would have allowed space for the hand holding it, so that it would not collide with the door during operation. As it has one tip, it could have been used in the springless variant AA4.1 or a single-springed version of AA4.2.

The two next keys are from the Merovingian Period. The first is an iron 1A.3 key (B4165f) from a male-gendered burial at Bolstad in Skjolden, Luster, dated 650–700 AD (Helgen 1982:19). It is 19 cm long, and in the same burial a somewhat shorter, 16.7 cm long 1A.1 key of iron was found, probably a container key. Like the keys from Øvresete and Modvo, it has a long hook that is angled upwards in a similar fashion (Figure 8.10, left). There is another key from Lokreim in Vang, Oppland, that closely resembles the Bolstad key (C25027a-b). This is a Late Iron Age single find, which was also accompanied by a smaller key, of 1A.2 type. It was found in the same area as the three depositional finds presented above. It has a long hook, slightly tilted, and three broad tips. Based on its resemblance to the key from Bolstad, it may be of similar date and use. A three-springed version of the AA4.2 is the most likely suggestion.

Figure 8.9. Potential door keys of 1A.1 type from Øvresete, Gloppen, Sogn og Fjordane (B6732b) and Rise, Oppdal, Trøndelag (T4300).

Figure 8.10. Potential door keys of types 1A.3, 1A.2, and 1C, respectively from Bolstad, Luster (B4165f), Øvre Amla, Sogndal (B10447e), Sogn og Fjordane, and Grøntvet, Tynset, Hedmark (C25880f).

Figure 8.11. Potential door keys of 1B.3 type from Høyheim, Luster, Sogn og Fjordane (B7066e) and 1B.2 type from Eisar, Sjåk, Oppland (C9964a).

The other key from this period is from Øvre Amla in Kaupanger, Sogndal, also Sogn og Fjordane (B10447e). This is an iron 1A key that had at least two tips, possibly three, found in a male-gendered inhumation burial from the 8th century AD. This is the largest of the potential door keys, 28.4 cm long, with a straight hook (Figure 8.10, centre). Its size is so unusually large that it must either have operated a door lock or a chest lock of dimensions I have not come across in this material.

The remaining four keys are from the Viking Age. The first is an iron 1C key from Grøntvet in Kvikne by Tynset, Hedmark, dated 800–850 AD (C25880f). It is shorter than the 1A and 1B keys, 13.2 cm in length, but its dimensions is the most noticeable indication of a door key. While other 1C keys have a T-shaped bit made out of thin iron bars, this has an unusually broad and flattened bit, with its two tips set far apart (Figure 8.10, right). This massive bit does not correspond to the dimensions of known locks for 1C keys, like A3 and AA3. It may rather have been for a door lock of variant AA4.3, which is known from medieval contexts (e.g. Berg 1989). If this key can be linked to this lock type, it is the earliest indication of such locks in Scandinavia, to my knowledge.

The next key is dated to the 10th century and is singular. It is a 1B.3 key with a 25.5 cm long handle, a 14.4 cm angled hook, and a large suspension ring in the top loop, weighing nearly 300 g in total (B7066e, Figure 8.11, left). It comes from a female-gendered burial with textile equipment at Høyheim near Gaupne in Luster, geographically located between the sites of Modvo and Bolstad. This grave also contained a 14.5 cm long iron 1A.2 key and a hasp for a mounted lock (B7066f-g), most likely representing a casket and corresponding key. This is perhaps the most convincing door key in the material, in addition to the one from Grøntvet, because its dimensions and weight indicate that it is unlikely to have operated a container lock. As a brief digression, the burial context may in this case offer some insight into what the key may have been used for, although very suggestively. The person was interred with an iron staff, which in burials have been regarded as indicating people involved in cultic activity (e.g. Gardeła 2016; Price 2002; Westlye 2019). It could be that the key was associated with cult as well, in terms of regulating access to a cultic building. I am not aware of finds indicating that cultic buildings in Scandinavia were locked, but it is relatively well known that ancient Greek temples were (e.g. Karatas 2019), as may medieval stave churches in Norway have been (e.g. Urnes near Høyheim, cf. Anker 2005). So although it cannot be determined that the Høyheim key secured a building related to cult, it is possible that keys served such purposes in the Viking Age.

The last two keys have general dates to the Viking Age. One is from the cemetery at Rise in Oppdal, southern Trøndelag, a short distance west of the find from Grøntvet. Here an iron 1A.1 key was found, *c.* 23 cm long (T4300). It has a long and wide hook, which is somewhat damaged and bent, and is comparable to the key from Øvresete in size and dimensions (Figure 8.9, right). It comes from burials that are mixed together, and its date is considered Viking Age (Petersen 1951:466), although its similarity to the Early Iron Age keys of this type could indicate an earlier date. Still, from the associated finds, it is tentatively considered part of a male-gendered burial. There were three other keys among the finds, two smaller 1A.1 keys and one 1A key, all iron (B4301–03). The second and last find is a 1B.2 key, with a 19.5 cm long handle and 10.5 cm long hook, and a large suspension ring (C9964a, Figure 8.11, right). In size and type it is comparable to the depositional key from Somdalen, but its weight (139.8 g compared to 43 g) is considerably heavier, particularly due to the ring. It comes from a likely female-gendered burial, containing a weaving batten and awl, from Eisar in Sjåk, northern Oppland. The combination of textile-working equipment and a large and heavy 1B key is shared with the Høyheim burial.

If these seven keys were door keys, the cases illustrate that individuals of both genders were interred with such keys. There may be a gendered difference in what types of keys they were associated with; the 1B keys and the 1C have a suggested female connection, while the 1A type seems to be related to male burials. Still, the numbers are too few to offer any firm basis. Also, it cannot be determined whether these types had different uses, so the validity and significance of this pattern is currently not known.

From these select door key candidates, I suggest that barring or locking doors using keys may have been introduced in the Migration Period, but the most convincing examples are from the Late Iron Age, from the mid-7th century onwards. This corresponds temporally to the establishment of emporia and increased specialisation of locksmithing in Scandinavia discussed in 7.3. Tentatively, locking doors was more commonly practiced in early urban settlements – as security of buildings potentially was considered more necessary and desirable at places with higher population density, turnover of people, and lower social transparency. Thus, the construction and use of door locks could have been brought to rural settlements through interaction at such places. Geographically, the northwestern part of Norway, particularly Sogn og Fjordane, has the strongest indications of this practice. This could be where door locking was initially introduced and implemented, on the other hand, it is possible that such keys were more often deposited in burials in this area. Thus, the concentration may reflect regional burial customs rather than regional locking practices.

The earliest mechanisms may have been springless, of the AA4.1 variant, while locks secured with springs arrived later. Pulling mechanisms like the AA4.2 variant could have been introduced in the Merovingian period, and the AA4.3 variant for 1C keys as well as turn locks like B3 were introduced in the Early Viking Age. It is not certain that pull keys were used for springed door locks in the Migration Period, however, the key from Modvo may be the earliest sign of this, as it has two tips in the bit (unlike the key from Øvresete). It should be kept in mind, though, that these keys are used as proxies for the tentative AA4 type, which there are no material traces of in Norway until the Middle Ages. Their use and lock type designation should therefore be considered with some reserve.

The presented results provide an outline of the people and communities for which locks and keys ordered life. From the Roman Period onwards, the tendency is a close association with socially prominent and resourceful parts of society, with some signs of social differentiation that suggest that locking was not absolutely restricted to the upper elite. Another tendency is involvement in craft production, trade, and exploitation of outfield resources, illustrating that locking was involved in increasingly diverse forms of activity and social organisation over time. This is seen from the 6th century, and particularly from the Late Merovingian Period onwards. Thus, the increase in technological diversification, quantity, and distribution of locking devices was linked to a widening range of uses and users. This is consistent with the general indication that locking was becoming more embedded into Iron Age society over time, especially in the Late Iron Age.

What locks and keys were used for is one of the main questions of this study. Hitherto, containers have been shown to represent the dominant form of lockable object in the first millennium. Thus, a central part of answering the question is to discern what people secured in boxes, caskets, and chests. The sources available are primarily from the realm of the dead rather than the living, from rituals rather than daily life.

8.2 Locked contents: locking in burials

In the following I will explore the potential uses of locked containers through a study of burials. As discussed in 4.3.1, the things kept and locked in burials were selected and placed with different motivations than in daily life, and the patterns presented in the following may reflect ritual standards and idealisations rather than the variation that could have been present in life. Regardless, my position is that idealisations and constructs are also ‘real’, in the sense that a lock and key, and the contents of a container, were considered desirable and necessary in the ritual; even though they may not represent the person as they lived, they represent them as dead, which has significance for how society viewed them and commemorated them. I also believe that burials may reference life and the everyday, and acknowledge that people could have agency over their own interment (following Moen 2019:59). Thus, this examination addresses the physical evidence for what locks and keys 'did' in the Iron Age, real or ideal.

Burials offer two intertwined avenues for regarding locking in the Iron Age: as ritualised action and linked to the idealisation and remembrance of the deceased, and as references to locking practices among the living (cf. 4.3.1). The latter is in focus here, but both are valuable in achieving a wider understanding of what tasks locking devices were put to, and what effects they had. An underlying question here is whether the items kept in lockable containers were 'secured' in the burials, and, if so, what security entailed in such contexts.

Possible continuities and changes in contents over time will be considered, in general and in relation to the changing form of containers and the gender/social status of the burials. The containers are determined by the presence of locks as well as handles, fittings, wooden remains, and visible imprints in the soil. As listed in Table 8.4 in 8.1.3, several burials with keys have signs of a container. If these were locked or not cannot be determined, as the absence of a lock may be due to preservation and identification, or the container did not have one. In the following, select cases of lockless containers are included, as they may indicate what items were kept in them.

The following is a qualitative look into the most well-preserved and well-documented finds. Information about where containers were placed and what they contained is largely missing in the Norwegian material, partly due to preservation and limited documentation (cf. Chapter 4). Consequently, the burials presented here are a small selection of the total number. Cremations and sparsely furnished burials are less represented because the presence of intact artefact remains and their placement according to an interred body are parameters for this particular analysis. Thus, the burials generally contain markers of gender and prominent social status, and reflect phases where the funerary custom was characterised by deposition of elaborate grave goods.

8.2.1 Roman Period

Out of the 22 burials from the Roman Period, 17 seem to have held containers (see Table 8.4). In four cases it may be discerned approximately where the containers and/or keys were situated, and their contents may be suggested in only two of those burials (Table 8.9). Two burials have key and lock remains suggesting that the containers were locked, while there were only keys in the other two. All of them are gendered as female burials.

ID	Key Lock	Container type	Contents	Container placement	Key placement	Gen.	Date
C37688p C37688q	1A A1.1	Box	Bronze hook?	Above head?	Above head?	F	B2
B8628I_l B8628I_m	1A.1 1A?	Box?	2 combs, 3 bone needles, mica mineral rock, sea shell	At the feet	By or inside container	F	C2-C3
B6981I_p	1A.1			At feet?		F	C3
C35805ee C35805ff C35805kk	A1.1? 1A? 1A.1 1A?	Box Box	Comb?, awl?, hone?, bear claw?, iron slag?		Key chain?	F	C3

Table 8.9: Placement and contents of containers in Roman Period burials.

The first burial is an unmarked grave (no. 19) from Tune Store in Sarpsborg, Østfold, Eastern Norway. This is the earliest and the only one from the Early Roman Period. Here, a 1A.1 key and A1.1 lock (C37688p-q) were found on two stone slabs in the southern corner of the grave along with a 3 cm long copper alloy hook. From the orientation of the burial and the placement of the other artefacts, the box and key were situated above the head of the deceased. The purpose of the hook is unclear, although it could have belonged to a spindle (see below). Among the other grave furnishings were a gold filigree pendant (*'gullberlokk'*), two gold filigree beads, a bronze hair pin, three silver and bronze fibulas, a glass bead, and a silver dress clasp.

The second burial is from Blimshaugen, a large mound with four burials at Blindheim on Vigra in Møre og Romsdal, Western Norway, dated to C2-C3. Here, one of the burials produced a 1A.1 key, a potential 1A key, and signs of a possible box, but no lock parts (B8628I_l-m). From the description, the box held one bone and one iron comb, three bone needles, a piece of mica (NO *kråkesølv*) and a sea shell. The combs reflect personal care and grooming, needles indicate textile working, while the mica and shell could be interpreted as amulets. The artefacts were found close together at the feet of the deceased. The grave also contained a gold spiral ring, a bronze sieve, four needles, a spindle-whorl, tweezers, a wooden vessel, and pottery.

The third burial is from Mele on Osterøy, Hordaland, Western Norway, dated to C3. It contained a 1A.1 key (B6981I_p), which lay by the feet of the deceased along with a large amount of glass beads, a bucket-shaped pot, two spindle-whorls, a gaming piece, a comb, and iron fragments. The key was identified among those fragments. With parallels to more well-documented burials, the comb and the spindle-whorls, possibly also the gaming piece, may have been stored in a box. However, this is only a suggestion, as there is no lock identified. The grave contained one gold and two silver finger rings, two or three copper-alloy hair pins, a total of *c.* 330 beads, and a ring brooch (potential belt buckle or 'key chain'), two spindle whorls, a needle case, a knife, glass beakers, and wooden vessels.

The fourth and last burial is from Gaalaas in Ringsaker, Hedmark, Eastern Norway, also from C3. Here, a likely A1.1 lock, a 1A.1 key, and two possible 1A keys were found (C35805ee, ff, kk). This burial held remains of one wooden container, maybe twos. The keys may have been suspended from a copper-alloy belt buckle or ring brooch (C35805h). Other artefacts included one gold and two silver finger rings, two silver fibulas, 3 copper-alloy fibulas, four or five dress pins in copper alloy, *c.* 620 beads, an awl, whetstone, and needle case, a glass beaker, a comb, iron slag, a bear claw, wooden vessels, and pottery. The comb, awl, and whetstone may have been stored in the container(s), possibly also the bear claw and iron slag.

As for comparisons to other finds without locks or keys, the small Late Roman Period box of yew from Dyster in Ås, Akershus (C9240, see Figure 5.1), contained a copper-alloy sewing needle, a gold spiral ring, and a decorated silver fitting (Mathisen 2019). The box was placed inside the large bronze urn in the burial, which also held burnt human remains, a rib of a cow and of a dog, and two ceramic pots (Teigen 2014:52-53, Tab. 10). Some of the few parallels in Scandinavia that may offer some supplementary comparison are the four burials at Juellinge in Denmark. As discussed in 5.1.1, Grave 1 at Juellinge contained a rectangular box with sliding lid secured by an A1.2 lock. The box held copper-alloy shears, a curved copper alloy knife, a bone comb, and a bone needle – interpreted as 'toiletries' or personal objects (Müller 1911:7). Grave 2 and 4 contained similar boxes with similar contents, and in Grave 2 a fitting that probably belonged to an A1 lock was found (Müller 1911:15–16, 18). In Grave 4 a bronze piece similar to the piece from Tune Store was also found, which held a glass spindle whorl. In the three burials, the container was placed above the head – like at Tune – but none contained keys. The Juellinge burials were particularly well-furnished, with imported Roman drinking vessels, drinking horns, gold filigree pendants, hair pins, and so on. Thus, the furnishings have parallels to the Norwegian lock and key burials. Other possible contents in containers from this period is indicated by the Nydam water depositions in Denmark. Here, a box with sliding lid (see

Figure 5.3. Wooden box with sliding lid from the Nydam I bog find in Jutland, containing pieces of metal (Photo: © NatMus).

in 5.1.1) contained metal scrap pieces, presumably for making repairs (Jensen 2003). This box had no lock, nevertheless it illustrates that the use of locked containers may have been more varied than demonstrated by the burial record.

The material evidence for what people locked in the Roman Period is sparse, but the little that can be deduced is that the small boxes seem to have contained artefacts pertaining to personal care, practical tasks, and possibly items for personal protection and/or belief. As demonstrated in the examples above and the gender-determined burials (Table 8.5), upper-strata individuals, primarily women, were interred with keys and containers (lockable or otherwise) in this period. However, the keys in the two male burials from this period, correlated with the Illerup keys and the lockless containers from other water depositions in Denmark, shed light on potential uses of locking in male burials, craft-related, and military contexts. The high number of grave goods in the Norwegian burials, and their rather exclusive nature are comparable to other elite burials in Denmark, Northern Germany, and Poland (Gundersen 2007:101–106, with references; Müller 1911:38-39), which emphasises the typological links made to these areas in 7.3.1. However, the burials with indeterminate gender (6 of 22) reflect persons that were not interred with such items. These were all cremation burials, displaying differences in burial custom and potentially social status.

8.2.2 Migration Period

There are 12 (4) burials of 57 that have an identifiable presence of containers from the Migration Period. Eight burials have sufficient contextual information to estimate placement or contents of the containers (Table 8.10). Four have identified locks only, three have keys only, and one has both. Five are determined as female, two as male, and one has both genders indicated.

ID	Key Lock	Container (size cm)	Contents	Container placement	Key placement	Gen.	Date
C32252e	1A.1	Casket (35–45)	11 arrow heads, knife, shears		In or on container	M	D1
B14954/27, 28	A6?	Casket	Fire striking stone?, strap buckle?, iron rings?, gold ring?	At feet	No key	M	D2b
B3731ø	A6.1	Casket (25–60)	Two spindle whorls?	At feet	No key	M/F	D2a
B13954/33	A6.1	Casket	Spindle whorl, glass shards (vessel?), dress pin?	At feet, 2nd chamber	No key	F	D2a
B6516k	1A.2 1B?	Casket	Awl, spindle whorl, weaving batten?, spindle hooks?	2nd chamber	At waist	F	D2b
B8045d	1A.3 1A 1A 1?	Casket	Possibly 2 spindle whorls, knife, weaving batten	At feet	At waist	F	D2b
B11694II_x, y, ø B11694II_z, æ	A6.2 A6.2	Casket Casket	*'Vevreell'*, weaving fork, 3 spindle -whorls, 2 spindles?, seam smoother?	At feet At feet	No key	F	D2b
C55731/7 C55731/9	1A.2 AA1.2	Casket (40 x 30)	Possibly two spindle whorls, glass beaker?, rock crystal	At feet	At waist?	F	D2b

Table 8.10. Placement and contents of containers in Migration Period burials.

Beginning with the male burials, these are from Fosset Nordre in Gausdal, Oppland, Eastern Norway, and Nerhus in Kvinnherad, Hordaland, Western Norway. The former is the earliest from this period, dated to D1, while the latter is from D2b, along with most of the other burials presented here. The burial at Fosset Nordre contained an iron 1A.1 key (C32252e), and a casket was indicated by a visible rectangle in the ground with a casket handle on either side. No lock parts were identified. Within the rectangle were eleven arrowheads, a curved knife, shears, and the key. Outside was a spear, a shield handle, iron fittings for a vessel, and an oval quartzite belt stone, as well as burnt bones. All the artefacts were found within an area *c.* 35 x 45 cm in size, which indicates the casket's size. The keeping of shears and a curved knife corresponds to the Roman Period burials discussed above, as does the key type, while this is the earliest instance of weapons documented inside a container in Norway.

The burial at Nerhus contained no key, but a possible A6 lock (B14954/27, 28), and fittings indicating a rectangular casket with lifting lid. Its placement is estimated to have been above the head of the deceased, but what it contained can only be suggested, as the casket fragments were not fully recorded in the documentation (Myhre 2005:284–285, Fig. 8). The burial held a set of weapons consisting of sword, spear, axe, short sax knife, and shield, as well as a thin spiral ring of gold, tweezers, a miniature copper alloy strap buckle, a horse bit and possible harness, an arrow head, a quartzite strike-a-light, a whetstone, two ceramic vessels, a knife or arrow head, a mica-like stone, and other fragments. The strike-a-light, the axe, a small iron strap buckle, iron rings possibly for a horse harness, potentially also the gold ring were found close to the casket fragments and could have been kept inside it. Comparing the two male burials, both have a marked martial impression, particularly the latter. As for the contents of the containers, it seems that both may have been involved in keeping various weapons or tools for warfare and/or hunting (e.g. arrow heads and weapon axe, riding equipment), as well as for more everyday, practical tasks, involving cutting and making fire. The casket in the Nerhus burial may also have held the gold spiral ring, which could represent both a personal ornament and currency.

Staying in Hordaland, the next context is a double burial from D2a, from Øvsthus on Borgundøy in Kvinnherad, which contained an A6.1 lock (B3731ø), but no key. Its exact location in the burial is not known, but two handles were situated *c.* 60 cm apart (Kristoffersen 2000, F67; Shetelig 1912:154–158, Fig. 364), suggesting a container of casket size. From the placement of the handles, it seems that the casket held two spindle whorls. These could represent part of the casket's contents, any other contents may have been organic materials. It was placed at the feet of the deceased, which were most likely a man and a woman based on the associated artefacts. These included a gold finger ring, a cruciform brooch, a shield boss, three spears, a weaving batten, two bucket-shaped pots and a pot with handle, a glass beaker, silver buttons for clasp buckles, decorated gilded fittings, a possible knife and sickle, a large whetstone, silver tweezers, shears, and a wooden vessel. The weaving batten was situated near the casket handles, but it cannot be determined whether it was among its contents. Also within the same area the cruciform brooch, an iron strap mount, and the wooden vessel were found (Shetelig 1912:158). Thus, it is suggested that the lockable casket was associated with storing of textile-working tools, possibly also dress ornaments and perishable materials. The spindle whorls could suggest that the casket contained the woman's artefacts, but it may have contained items for both individuals.

Moving on to the female burials, a similar use is outlined in two burials from Kvåle in Sogndal, Sogn og Fjordane, Western Norway. Both were long, stone cists with two chambers. The first burial is dated to D2a, containing a lock of A6.1 type (B13954/33), which is the same type and date as the lock from Øvsthus. The lock spring was all that remained of the lock, which was initially interpreted as a key. It was situated in the smaller chamber above the main chamber containing the interred individuals, likely a woman and a child (Kristoffersen 2000, F86). The smaller chamber also contained shards from a glass beaker and bowl, two scraper tools, a spindle whorl, four ceramic vessels (two buckedshaped), a bucket handle, a stone axe, diverse stones and glass ‘buttons’, a bronze pendant, beaded string of silver, silver clasp buckles, and a dress pin, as well as a casket handle. Another casket handle was found nearby in the main chamber. Whether this indicates two caskets or one that has been disturbed cannot be determined. The lock spring and handle suggest that a locked casket was placed in the small chamber, which was about 1 m long. The artefacts near the casket were one of the scraper tools, the spindle-whorl, and the dress pin. Thus, it may be suggested that the lockable casket contained implements for textile-working and other craft-related tasks, as well as dress accessories and other personal effects. The remaining items in the main chamber were a relief brooch, four cruciform brooches, dress clasps, a ring buckle, a bird dress pin, a weaving batten, a knife, ten beads, and remains of two wooden vessels.

The second burial at Kvåle, dated to D2b, contained no lock parts, but a 1A.2 key and a pull key with missing bit, both copper alloy (B6516k). A casket was indicated by the placement of two handles, lying about 50 cm apart. The keys were found in the chamber where the deceased had been placed, judging from one large and two smaller relief brooches, two equal armed brooches, buttons for clasp buckles, six glass beads, a ring brooch, and a knife. The keys were most likely situated at the waist, attached on the ring brooch. The casket stood in the second chamber, where a bucket-shaped pot, remains of a wooden vessel, a weaving batten, several spindles, a spindle whorl, an awl, along with the handles and casket fittings were found (Kristoffersen 2000, F85; Shetelig 1912:150–153, Fig. 352). The spindle whorl and the awl were probably in the casket, possibly also the spindles and the weaving batten, while the vessels were presumably placed outside. The casket seems to have contained a tool kit for textile-working.

The next burial is from across the Sognefjord at Holum in Vik, which held one 1A.3 key and two 1A keys of copper alloy, and one possible iron pull key (B8045d). These were found by the waist area, probably attached to a ring brooch similar to the second Kvåle burial. There was also a relief brooch, rings, a clasp buckle, and a scraper-like iron tool or weaving implement (*‘vevrell’*). No lock was identified, however, a casket handle was found in the lower end of the cist. Here two spindle whorls, a weaving batten, two bucket-shaped pots, and remains of possibly three wooden vessels were found. A knife may also have derived from this area. The artefacts were some distance apart, so it is not possible to make any confident inferences about the size of the casket or its contents. It could have contained the textile-working tools or served other purposes.

Somewhat clearer contextual information may be derived in a burial from Skaim in Aurland, further in the Sognefjord. This contained two caskets, each with an A6.2 lock, but no keys (B11694II_x-æ). Both were situated at the feet of the deceased, alongside three spindle whorls and spindles, two wool/linen combs, a possible awl, as well as a bucket-shaped pot, remains of wooden vessels, and various iron fittings. Other artefacts include a fibula, three equal-armed brooches, tweezers, strap-mounts, ten beads, and pieces of glass. Although the exact placement is not firmly established, the impression from this burial is of textile-working implements being kept in lockable caskets. There are indications that the burial was looted, which could explain the absence of keys.

The last of the female burials is from Sande in Farsund, Vest-Agder, Southern Norway. As mentioned in 7.2, this burial contained a casket with an AA1.2 type lock and a copper alloy 1A.2 key. It is also the best preserved set of lock and key from the Migration Period, with nearly complete lock bolt and lock spring, partial hasp, and key on a key ring (C55731/7, 9). The Sande casket was *c.* 40 x 30 cm, possibly longer, judging by the outline in the soil and the length and placement of the lock. Its contents is not possible to determine for certain, but it most likely included two spindle whorls, a piece of rock crystal, and pieces of a possible yellow glass beaker (Lund and Engebretsen 2009:28). An amber bead and a silver-foil glass bead with remains of thread could also have been within the casket. Next to it was a weaving batten and a bucket-shaped pot. The casket was placed *c.* 50 cm above the head of the deceased, the position of which could be estimated by a large relief brooch, clasp buckle, dress pin, as well as a wheel-shaped key ring, which was located in the waist area (Vedeler et al. 2018:4–6, Fig. 1). The key was still attached to it by a small ring, and it seems to have also held a knife. Again, a locked casket is associated with textile-working tools, but there are also indications of personal items such as amulets, jewellery, and vessels.

The eight burials presented here offer insight into the use of locked or unlocked containers in the Migration Period. Textile-working is an ongoing theme for the female burials, with cutting tools and potential glass vessels in some cases. What can be determined for the male graves are indications of keeping small weapons, tools for cutting and making fire, and maybe gold. It should be noted that the selection is limited and possibly not representative for the general use of lockable containers. One find that offers an expanded view is a burial from Ommundrød in Larvik, Vestfold, Eastern Norway (C29300). Two large relief brooches and a gold spiral ring was found in what seems to have been a box or casket in a furnished female burial. The brooches were laid on top of each other, with the gold ring by the bow of one, and there were small wooden remains around them (Dybsand 1956:22).

There was no evidence of key or lock, but the find documents that containers were used to keep dress ornaments and gold. In the male burial at Evebø, a lockless box was situated above the head of the deceased (B4590h, Figure 5.2; Shetelig 1912:113, Figs. 252 and 266). Its contents is not known, but items small enough to fit inside include balance scales, a leather pouch with five weights and two coin-like pieces, a gold solidus, pieces of silver foil and fittings, and awl-like wooden tools. These contexts and the Nerhus grave offer some connection to the storage of gold, trade-related items, and things of high-status, economic, and personal value. In light of the Ommundrød burial, dress ornaments and other items may have been kept and locked in containers when not in use. The locked contents in burials could thus be influenced by what the individuals were wearing and how the items of the burial were arranged; much of what was outside the container could well have been kept inside it in lived life, depending on its capacity in terms of shape and volume. This point is valid for all of the burials treated here, emphasising the potential difference between mortuary and everyday locking practices.

8.2.3 Merovingian Period

Out of the 43 burials from the Merovingian Period, 14 (4) have identifiable containers. Few have sufficient information to discern what the containers may have held. Three burials are presented in Table 8.11 below. Two are gendered male and one female. Additionally, out of nine burials considered transitional, 4 (1) have containers identified. Two of these, both male, are listed below are and presented in the following.

ID	Key Lock	Container	Contents	Container placement	Key placement	Gen.	Date
Ts3071n	1A	Casket (hinge?)	Possibly sickle, shears, comb, maybe knife, tweezers, ear spoon	Left of upper body	Left of upper body	F	Ph. 1
C6017c	Hasp	Casket	Possibly arrow head, sickle, flint		No key	M	Ph. 1-3
C23034m C23034n	1A.2 1A.1	Casket?	Possibly scythe, 3 sickles, 2 curved knives, 2 knives, 2 shears, strike-a-light, rattle, horse bit, iron hook?	Under stone slab, next to body?	Under stone slab, next to body?	M	Ph. 3
B5150k B5150n	AA/BB?	Casket/ chest	Pick axe, celt, drill, 4 knives, bronze piece, 3 beads, gaming piece, whetstone	N end of boat, at feet?	No key	M	750-850 AD
B18817v B18817æ	A/B? Hasp	Casket Casket/ chest	Possibly saw blade, arrow head 11 loom weights, wool/linen combs	1 m N of æ In mound fill	No key	M	*c.* 800 AD

Table 8.11. Placement and contents of containers in Merovingian Period and transitional burials.

The first and only female burial is from Elgsnes Ytre in Harstad, Nordland, Northern Norway. This is dated to Phase 1, and contains an iron 1A key with missing bit (Ts3071). A casket is indicated by iron fittings. A hasp was among the fittings, although it could not be identified as such during my examination of the finds. It may also have been a hinge. The fittings were placed on the left side of the upper body of the deceased, along with the key, shears, a sickle, and a comb. There were also tweezers, an ear spoon, and a knife lower down by the waist. The person was interred with two conical brooches, a wheel-shaped brooch, two dress pins, and a necklace of *c.* 250 beads. There was also a spindle whorl, but its location is not known. Thus, the casket, whether it was locked or not, indicates storage of everyday and possibly agricultural tools as well as items for personal care. The spindle whorl may or may not have been inside the casket, but in any case, it indicates a link to textile-working.

The next burial is from Kongsteigen in Sandefjord, Vestfold, Eastern Norway and is first of the four male burials. Mound No. 1 at Kongsteigen contained a single-edged sword, a shield boss, an axe, a sickle, a possible arrowhead, a piece of flint, and a lock hasp among other casket fittings (C6017c). This was a cremation burial excavated by Nicolay Nicolaysen in 1872, and its description is sparse. The sword was placed with the tip towards the northeast, with shield and axe above. The hasp and fittings, the arrowhead, and the flint were found together southeast of the sword, and the sickle was close by. The flint was burnt and was most likely for making fire. A casket with a lifting lid locked by a sliding bolt mechanism may have held tools for everyday tasks, and possibly an arrow used for hunting or warfare. One suggestion is that the man was dressed in military attire, and that the casket contained items that were commonly brought on travels.

The second male burial is from Austreim in Vang, Oppland, Eastern Norway. It contained two iron keys, a 1A.1 and a 1A.2 type (C23034m-n). A casket is indicated by a flat handle and two circular rings for carrying, all with cramp fastenings. Thus, the flat handle may have been attached to the lid, and the rings to each side of the case. Alternatively, there may have been two containers, one with a flat handle and one with ring handles. From the description, a sword and a spear were placed together, with the rest of the artefacts found 50 cm away underneath a stone slab, half a cubit in length and width. The slab may have been placed on top of the casket(s). The other artefacts were a scythe, three sickles, two curved knives, two knives, two shears, a strike-a-light, a rattle, a horse bit, and an iron hook. It is possible that all of these artefacts were stored in one or two caskets. There is no evidence of locks, so the keys could indicate the contents of the containers rather than locking. Still, the character of the artefacts suggests storage of agricultural tools and everyday utensils, as well as horse equipment, related to a person with weapons.

These three burials offer interesting but limited insight into the use of containers in the Merovingian Period. The presence of sickles is common for all three, and the Elgsnes and Austreim burials both have knives and shears. What separates them is that the male burials do not have items for personal care, such as combs and ear spoons, nor textile equipment, but rather items for making fire and weapons. These burials do not contain craft-working tools (except possibly the spindle whorl in Elgsnes). Contrary to the burials from the Early Iron Age, the male burials have smithing and carpentry tools, as well as the agricultural tools mentioned, which are artefacts that could have been kept in the containers.

Moving on to the two transitional burials, the first of these is Ytre Hauge in Gloppen, Sogn og Fjordane, Western Norway, and the second from the Vang cemetery in Oppdal, Trøndelag, Central Norway. The burial at Ytre Hauge was a boat grave excavated in 1895. The boat was oriented NW-SE, and held a casket or chest with an indefinite lock of either type AA or BB (B5150k, n), consisting of a probable lock bolt and springs too fragmented to be securely determined. The container seems to have held a pick axe, a celt, a drill, four knives (one with curved blade), a fragment of bronze, three beads, an amber gaming piece, and a slate whetstone. These were found in the northwestern end of the boat, and the excavator Gabriel Gustafson suggested that they were kept in a wooden casket or similar container. There was also a sword, three spears and an axe, iron fragments, and a spindle whorl, it cannot be determined whether the latter was part of the contents in the container.

In Mound 560 at Vang in Oppdal indications of two containers were found, one secured by a lock with hasp (T18817æ) and the other most likely locked by a pure pull or turning lock, judging from a possible lock plate with rectangular keyhole (T18817v). This burial was a cremation excavated by Oddmunn Farbregd in 1967. Following his report, the first container was situated in the cremation layer, and based on the finds closest to the lock plate, it could have held a saw blade and an arrowhead (Farbregd 1967). The other container, seemingly a casket of *c.* 35 x 25–30 cm in size, held 11 loom weights and 36 iron tines of wool/linen combs. This was located higher in the mound fill, as was a bronze ring brooch and a bunch of five arrowheads, and could represent a secondary deposition or burial in the mound. The cremation layer contained six arrowheads, a knife, a file, a ‘sled hook’ and harness fittings, three strap buckles, three wood planer blades, possibly three prongs for a leister (fishing spear), three pieces of flint, two slate whetstones, a pottery shard, a large amount of iron fittings and fragments, an anchor-shaped button, fragments of a decorated antler comb, a bellows stone, and a stone bead with incised lines resembling or imitating runes. This is also one of the few male burials without weapons like swords, spears, and shields, indicating a person more closely linked to craft-working, fishing, and possibly hunting, than to military activity. If the saw blade and the arrowhead were indeed part of the casket's contents, it is possible that the other craft tools and implements were also kept in the casket, but were displaced by the cremation or later factors.

The evidence from the Merovingian Period and the time around 800 AD outlines a continued deposition of caskets, and possibly the introduction of chests. This is tentatively supported by a chest-sized container in an Anglo-Saxon burial at Dover from the late 6th to early 7th century (61 x 30.5 cm in Grave 59, Evison 1987:233). The range of contents is widened to include various tools for agricultural tasks, horse handling (i.e. riding or driving), for metal and wood-crafting, for fishing and possibly hunting, in addition to the established custom of keeping textile-working tools, artefacts for practical tasks and personal care, as well as potential amulets in boxes and caskets. The burial from Ytre Hauge also illustrates that gaming pieces and beads could have been kept in lockable containers associated with men. The wider range of tools may in part be due to the stronger representation of male burials, however, the female burials also contain artefacts outside the confines of personal adornment and textile-working. This tendency of storing a higher number and more types of artefacts in containers continues in the Viking Age.

8.2.4 Viking Age

Out of the 285 burials dated to the Viking Age, 164 (7) of them have identified containers. Siphoning out those with evidence of contents results in a total of 28 burials; 24 are listed in Table 8.12 below, while the remaining four are presented in Table 8.13. The distinction is made because these four indicate that the contents of the containers included human remains, demonstrating that lockable caskets and chests were used as funerary vessels for the dead.

The 24 burials will not be presented in equal detail. The burials that offer the best grounds for addressing the use of locked containers will be emphasised. The 12 female burials will be considered first, ten of which contain textile-working tools. In five of the ten, exclusively textile-working equipment was identified in the caskets, primarily spindle whorls, as well as wool/linen combs, smoothing stones, and loom weights (B10720, B11413, C53654, S9062, and S12295). The remaining five and the two burials without textile-working tools are presented further below.

ID	Key/Lock	Container type	Container size (cm)	Contents	Container placement	Key placement	Gen.	Date (AD)
B9471j	Hasp	Casket		Likely amber bead, jet serpent pendant, shears + maybe spindle whorl, iron hook, weaving batten	Above head?	No key	F	800–900
B10720d	1A.1, 1A.2	Casket	'small'	Spindle whorl and weaving tool?	Upper body	At waist	F	800–850
B10772e B10772j B10772m	1A.1, 1A.2 1A.2 A/AA	Casket	25–50 x 25 x 17	Oval brooch, equal armed brooch, bone comb, slate whetstone, hazel nut shell, 1-2 spindle whorls	At feet	At feet	F	800–850
B11413t	A6.2	Casket	25–30	10 loom weights	At feet	No key	F	800–900
B12045d	Key, iron	Casket		19 beads (wrist band?), shears, 1-2 knives			F	900–1000
B12215/9 B12215/10	1C AA3	 Casket/chest		Possibly celt/axe, horse bit, sickle, knife – and a button-on-bow brooch?	N side	N side, with casket	F	800–850
C53654/5 C53654/12	1A.1 A6.1/AA2.1	Casket/chest	35–60 x 35–40	Spindle whorl, 2 smoothing stones	N end of boat	At waist	F	850–900
C55000/76	A4	Bucket-shaped casket	33 x 25 x 31	5 balls of yarn, weaving fork, 2 weaving spoon tools, wax, iron strap buckle, 2 iron fittings with whorl (chain?), wooden bowl with seeds (cress), wooden bowl with grain (woad), wooden lid, quartz stone, 3 pyrite pieces, 2 whetstones, wooden handle (knife?), yellow powder (pigment?), textile and leather, 3 weaving tablets, wild apples	SSW of mast, below horse	No key	F/F	*c.* 834
C55000/95	A4 (lost)	Bucket-shaped casket	27 x 21.5 x 25	3 wild apples, 1 small wooden bowl (yarn bowl?) + yarn tool ('*garnherve*')				
C55000/133	BB1.2	Chest	113 x 32 x 38	2 iron lamps, 2 wooden clubs, wooden bowl/coke, wooden tray, 2 wooden awl-like tools, wooden spool-like tool, comb, shears, 1-2 wooden paddles, 3 wooden 'needles', wooden board, tube, horse crampons	NE side of chamber			
C55000/154	BB1? (lost)	Chest	104 x 36.5 x 41	2 combs, leather, textiles				
C55000/175	B1	Chest	66.5 x 24 x 30	Apples and grain (wheat)	By mast			
C55000/261	A3	Box	*c.* 19.5 x 8–10	-	Burglary shaft			
C55000/264	Hasp	Casket/chest	31 x 11 x 12.5	-	Burglary shaft			
S9062d S9062g	1A.2 A6?	Casket (oval?)	65 x 48 x 21	Spindle whorl, knife		By casket	F	850–950

S12295k S12295t	AA1.2 1A.2	Casket/chest		Possibly 2 spindle whorls		Centrally on E side	F	800–900
T9261 T9273, -75	2B.3 AA1.3	Casket/chest		Possibly wool/linen comb, spindle whorl, 1-2 knives, sickle, shears	At feet	Upper body or head?	F	800–900
T16402k	1A.2 AA1.3	Casket/chest		Comb, weaving tablet, sickle, whetstone + needle case?	Left side of pelvis	Left side	F	800–850
B6356i	2A/2B BB	Casket/chest		Shears, 2 knives, iron hook, strike-a-light, flint, silver button, balance scales, weight, strap mount, whetstone	NE corner of chamber	NE corner of chamber	M	850–950
B8821m	AA1.2	Casket/chest	Max. 100	Possibly balance scales, 2 weights, hammer, file, awl, knife, whetstone, 2 gaming pieces, 6 flint, 4 mica, round sand stone		No key	M	900–950
B11131i, l	BB1/BB2	Casket/chest	Min. 45	Possibly balance scales, 3 weights, hammer	W end of boat	No key	M	800–850
B11537x, z, w, æ	AA1.3	Casket/chest		Possibly knife, drill, small hammer, spokeshave, celt, shears, potential file	At feet	No key	M	800–850
S11782ag	1B.2	Casket	*c.* 50 x 20	Small pair of tongs, plate shears, 2 crucibles, possible crucible ‘fork’, 1-2 files, knife, drill, awl, edged tool, 5 undefined tools	Upper body, left side	Upper body, left side	M	850–900
C16403	2B.3	Casket/chest		Possibly 2 smithing tongs, 2 hammers, file, 2 potential punching tools, horse bit, knife, arrow head, needle			M	800–1050
C27454xx C27454cccc C27454bbb	2B.2, B1 1A 2A.3, BB2 C4	Chest Chest	*c.* 100 x 25 60–100 x 20–50	2 anvils, anvil or sledge, draw plate, arrow head, 3 hooks, pulley?, iron nails, slag, pull key? 2 knives, file, chisel or wedge, 2 arrow heads, chain, strap mount, fittings, slag, whetstone, padlock?	S of the body (right side) N of the body (left side)	By lock xx In chest? By lock cccc In chest?	M	850–900
C53660/8 C53660/9	1A.1 AA1.2	Casket	*c.* 50 x 25	Smithing tongs, hammer, awl, wood planer, chisel, spokeshave, knife, tanged tool	At feet	At feet	M	875–925
C53655/8	Hasp	Casket	*c.* 50 x 30	Chisel, 3 whetstone, awl, sickle, flint, strike-a-light, sheath?	N end of boat	No key	M?	800–1050
C56977/3 C56977/4	1A.2 A6.2	Casket/chest	*c.* 50 x 25–30?	Shears and awl, possibly 2 whetstones	At feet	At feet	M?	850–950
C57002/8	BB	Casket/chest		2 shears, tweezers, strike-a-light, needle case and sharpener	Left of waist	No key	M(F?)	900–950
B11470ak B11470am B11470an	A6.2 1A.3 1B?	Casket/chest		Possibly 2 knives, celt, file, spokeshave, whetstone(s), shears, sickle, horse bit	Male side	 Female side Male side	M/F	900–950

Table 8.12. Placement and contents of containers in Viking Age burials. Finds with only placement documented are not included.

Starting with Western Norway, the first female burial is from Longva in Haram, Møre og Romsdal. This contained a hasp for a mounted casket lock (B9471j). The contents of the casket are suggested to have been a large amber bead, a serpent amulet of jet, and shears, possibly also a spindle whorl, an iron hook, and a weaving batten. The burial also contained two oval brooches, a spiralled jet bead, a female-shaped pendant of amber, 66 glass beads, knife, a slate whetstone, and a piece of flint. It cannot be confirmed that the casket contained the textile-working implements, but it does seem to have been used for personal effects and practical implements. Based on the jet serpent and female pendant, it has been recently suggested that the woman in the Longva grave was involved in religious ritual practices (Gardeła 2020), which could relate the casket to the woman's cultic role.

From the same county are two burials at the site of Vellene at Sandanger in Sande. The first of these contained two keys of 1A.1 and 1A.2 type with indications of a casket with textile-working tools (B10720d). The other contained three keys, one 1A.1 and two of 1A.2 type, and remains of a mounted pull lock (B10772e, j, m). Here, the body lay on the side with the legs pulled up tightly. The casket was situated at the feet, oriented transversely, and it is suggested to have been *c.* 25–50 cm in length, 25 cm wide, and 17 cm tall. Its contents were seemingly an oval brooch, an equal-armed brooch, a bone comb, a slate whetstone, one or two spindle-whorls, and a hazelnut shell. One of the 1A.2 keys (j) were placed by the left foot, while the other two were found in the nook of the right arm, alongside a strike-a-light and two or three knives. Thus, the first key may have belonged to the casket. Like many others, this burial demonstrates that caskets contained artefacts of various kinds and not always for one kind of purpose or activity. Here textile-working tools, items for personal care and ornamentation, practical implements, and food can be identified. This is one of the few cases where dress brooches are found in containers (e.g. Ommundrød above). Other artefacts in include 35 beads around the neck, and a bronze dress pin by the temple.

Further south at Hauge in Stranda, the next burial has some similarities to the second grave at Sandanger. It contained an iron key of unknown type (B12045d/B4445, now lost), and no identified lock, but a container seems to have held 17 beads, possibly a wrist band, shears, and one or two knives. There were also two oval brooches, a cross-shaped piece of silver filigree, and four hazelnuts. As at Sandanger, there are items for personal ornamentation and practical tools, but no indication of textile-working tools.

A similar impression is apparent in a burial from Ylmheim in Sogndal, Sogn og Fjordane. A 1C key and an AA3 lock was found here (B12215/9-10). The exact contents of the casket or chest is not known as the original report could not be located, but the lock and fittings were found in the same area as the key, a celt, a horse bit, sickle, a knife, and a button-on-bow brooch (Kaland 1972a:23). These are all artefacts that could be placed in a casket. The brooch belongs to Phase 2 of the Merovingian period, and was worn and repaired when it was deposited in the burial (Glørstad and Røstad 2015:191). This could suggest that the brooch was an heirloom kept in the casket, or that the casket was situated close to the upper body of the deceased, where the brooch may have been worn. As for other artefacts, the burial contained *c.* 20 beads, a silver spiral, two spindle whorls, a weaving batten, at least four loom weights, a whetstone, a *'vevreell'* tool, shears, and pieces of slag. The key, lock, and related artefacts were found in the northern end, while the textile-working tools were found in the centre. Thus, this is an uncommon instance where such tools are present, but not related to the container. Rather, the casket is associated with practical implements pertaining to agriculture and horse handling, and potentially jewellery.

The last of the western female burials is from Røttingsnes in Tingvoll, Møre og Romsdal, which contained a copper alloy 2B.3 key (T9261) and an AA1.3 lock (T9273, T9275) for a casket or chest. It seems to have held a wool/linen comb, a spindle whorl, one or two knives, sickle, and shears (Rygh 1910:4-6), which were found in the centre of the boat that held the deceased, situated at the feet. The key was located somewhere around the upper body or head area, and was in any case not for use in the lock. Here, the sickle is the only artefact not immediately related to textile working, but it may point to harvesting of raw materials for textiles such as linen as well as food. The shears are generally regarded as multifunctional. The burial also held two oval brooches, a decorated copper alloy fitting, 27 beads, a stone pendant, a garnet stone, a frying pan, an iron pot, flint, and two whetstones.

Moving up to Central Norway, there is one female burial from Uthaug in Ørland, Trøndelag. Here, a woman was interred with casket remains on the left-hand side of her pelvis. Among the remains were an AA1.3 lock and a 1A key with missing bit. The contents were an antler comb, a whalebone weaving tablet, a sickle, and a small whetstone. The burial also contained a bone needle case and one or two knives, the location of which is not stated, as well as two oval brooches, a possible bead, and a whalebone weaving batten that lay under the upper body. Again, a lockable casket with a mixed range of contents, but primarily tools – for weaving, agriculture, and personal care.

The last – but not least – of the female burials is the Oseberg ship grave, located on the farm of Jarlsberg Hovedgård in Sandefjord, Vestfold, Eastern Norway (C55000). The unique preservation and documentation of this burial provides invaluable insight into the use of locked containers in the Viking Age, as illustrated in 5.1. What remains to be seen is whether Oseberg is so unique that its containers and contents are not comparable to the other female burials presented, or if there are common themes and practices that can be identified and compared.

Seven lockable containers are identified in Oseberg: two large chests (/133, /154), one small chest (/175), and one casket (/268), all with lifting lids, as well as two bucket-shaped caskets with bolted lids (/76, /95), and a box with sliding lid (/261). The back panel and lid of the small chest and the lid of the box are the only preserved parts of these containers, hence their contents are not known. Both were found in the burglary shaft (Brøgger 1917:28-29), and were most likely destroyed or intentionally emptied during the burglary. The box was locked by an A3 lock set inside the lid, and the small chest was probably secured by a mounted lock, based on traces of a hasp fastening on the lid. A hasp found in the same area (C55000/264) could have belonged to this casket (Grieg 1928:198). It could also have been secured by a clasp hasp and padlock, although such an arrangement has not been identified in Oseberg or in any other female burial in this study. The other five containers have preserved contents, complete or in part.

Beginning with the bucket-shaped caskets, these were found by the mast underneath the remains of a horse (Brøgger 1917:70). The largest of the two (/76) had a preserved A4 lock, and had the highest number of artefacts. It held five balls of yarn, a wooden or bone forked weaving tool, two spatula-shaped wooden tools, yellow wax, an iron strap buckle, two iron fittings with a whorl (suggested to have been a chain), a wooden bowl with seeds identified as garden cress, a wooden bowl with woad, a wooden lid, a quartz stone, three pieces of pyrite, two whetstones, a wooden handle (for knife?), yellow powder (possibly pigment), three weaving tablets, pieces of textile and leather, and some wild apples (Brøgger 1917:71–72; Grieg 1928:193–195; Holmboe 1927).

This casket gives the impression of being a tool casket for textile-working, while also containing other practical tools as well as food. The crafts identified are weaving on a loom, tablet weaving, and dyeing. The whetstones indicate maintenance of iron tools such as needles, shears, knives, and sickles. The quartz and pyrite were most likely used to make fire, creating both light and heat, which was important in textile-working, dyeing, as well as cooking. The use of the strap buckle and chain is unclear. The buckle could have been for the textiles, while the chain could have been related to cooking or maybe dyeing, e.g. suspending a pot over the fire. The weaving tablets were wrapped in textiles, possibly tablet-weaved bands, but I have not been able to determine which of the many Oseberg textile fragments derived from the casket. The woad is a plant used for dyeing textiles blue, while the garden cress (lat. *Lepidium sativum*) is a more exotic feature. This is a herb with peppery flavour that could have been used as seasoning. It could be consumed raw or dried, bringing a pleasant smell and breath, and may have been thought to have medicinal properties. Believed to originate in the Near East, spreading to the Mediterranean area, the presence of garden cress in Oseberg may be a sign of long-distance trade or it may be the earliest indication of its cultivation here (Holmboe 1927:19–22, with references).

The second casket (/95) was somewhat more damaged and its lock was missing from the lid. It contained three wild apples, a small wooden bowl, and a yarn tool (*'garnherve'*) that seems to have been lost early on (Brøgger 1917:73; Grieg 1928:196). While less rich in contents – possibly due to the burglary – it contained textile-working tools and food similar to the other casket. This could indicate that they belonged to each of the women, which could also be the case for the two large chests presented below. The location of these two caskets outside the burial chamber is curious and Brøgger (1917:72) suggested that they were forgotten until after the chamber was sealed off. Thus, they were probably intended to be placed inside the chamber, but rather than reopening the burial chamber, they were instead placed onto the ship and covered by the horses that were sacrificed later. This shows that everything did not go according to plan in the burial construction, and that some things may not be situated where they were originally intended or supposed to be.

Food is also a theme in the small chest (/175). This was found in the western side of the burial chamber, its lid (no.109) located by the mast, and contained wild apples (Brøgger 1917:45; Grieg 1928:124). It was secured by a B1 lock. A chest with apples as well as grain of wheat located by the mast is also mentioned (Brøgger 1917:35). Whether these are two different chests or one and the same is unclear from the description, but the plans (Pl. X, XI) indicate that they are indeed the same, meaning that the chest contained wheat in addition to the apples. The presence of wheat was mentioned by Brøgger in the first publication, with reference to the plant determination conducted by Jens Holmboe (1906; see also 1927), but was not repeated by Grieg in the second. The lid of the chest was separated from the case, indicating that it was opened by looters, but finding only apples and grain, the contents were left undisturbed.

The first of the two large chests (/195) had been opened and almost emptied. The lid and front were removed, so its locking mechanism was not preserved. What little remained of its contents included a long bone comb, fragments of a second comb, some leather, and 'particularly fine patterned' textile remains lying at the bottom (Brøgger 1917:38). The second chest (/133, no. 149), was placed 1 m behind and parallel to the first chest, so that it remained undiscovered and was spared. The contents of the intact chest was elaborate: two iron lamps, two wooden clubs, a small wooden bowl or coke (fuel), a wooden tray or platter, two wooden awl-like tools, a wooden spool-like tool, three long wooden needles, a large comb, large shears, one or two wooden paddles, a wooden board, a tube, and horse crampons (Brøgger 1917:39–41; Grieg 1928:118–120). It was locked by a BB1.2 lock, which may also have locked the looted chest.

The character of the two large chests is largely domestic, textile-related, as well as personal. The lamps suggest lighting indoors, but possibly also outdoors, to be set into the ground or carried. The clubs are interpreted as linen clubs, and the paddles for beating or washing textiles (Grieg 1928:183–184, 186; Ingstad 2006:187). The awl-like tools were most likely used for holding the wool while spinning, the spool-like tool was a spindle with slate spindle whorl, and the three needles could also be spindles (Grieg 1928:181–182, 186). The shears are uncommonly large, 36 cm in length. It is possible that they were used for textile-working. The combs indicate personal care. The horse crampons are the only implements that point to outdoor activity, to riding or driving. The textiles from the first chest warrant particular attention. They were woven with decorative plant motifs, *c.* 18 cm in width, with remains of down on one side (Hougen 2006:70, Figs. 1-89–1-94). Bjørn Hougen (2006:70-71) suggested that they may have been used as a pillow or bed cover, but were folded up and placed in the chest, potentially due to their stylistic rarity. These textile fragments are of the finest quality in the Oseberg burial, light and fine as silk, which led Anne Stine Ingstad (2006:233) to suggest that the fragments belonged to a shawl. Thus, the chest may have contained exclusive clothing rather than bed coverings.

The significance of Oseberg for the understanding of locked contents will be revisited later, after having presented the remaining burials. There are 10 (2) male burials and one burial with both genders indicated. One of the male burials has a possible female indication.

Five of the male burials are in Western Norway. The first of these is from Bygstad in Gaular, Sogn og Fjordane. It produced an iron turn key of either 2A or 2B type, and a mounted turn lock of no further identifiable type (B6356i). The container was either a casket or chest, holding shears, two knives, an iron hook, a strike-a-light, flint, a silver button, balance scales in a wooden box, a tinned copper-alloy weight, a strap buckle of copper alloy, and a large whetstone (Shetelig 1912:216–217). It was located in the northeastern corner of a chamber grave, *c.* 4 x 5 m, which also contained nine arrowheads, three shield bosses, a celt, a drill, and an iron and copper alloy fitting. The contents suggest that the casket contained various items and personal effects related to trading and practical tasks. The shields and arrows demonstrate a military connection, perhaps hunting, and the drill and celt indicate wood-working.

The Bygstad grave has parallels to the next burial, which is from Eide in Gloppen. An AA1.2 lock for a casket or chest was found (B8821m). The exact location is less precise, but the contents are suggested to have been balance scales and two lead weights, as well as a hammer, a file, an awl, a knife, a slate whetstone, two ceramic gaming pieces, six pieces of flint, four pieces of mica, and a round sandstone. These items are listed among things found at the feet, where also an iron pot, a spear, and a shield was located. In the opposite end were a sword, an axe, a sickle, a knife, and *c.* 11 arrowheads in a bundle. This container had objects associated with trade, tools for wood-working or metal-working, in addition to practical implements. The unusual feature here is the gaming pieces. While it cannot be determined whether they were inside the container, these items are often related to weapon graves and the warrior role (e.g. Kristensen 2007). The contents suggest an assortment of artefacts associated with leading an itinerant life style.

This is also the case in the third burial, which is from Kvistad in Ørsta, Møre og Romsdal. Like the Eide grave, there was no key, but a mounted turn lock of either BB1 or BB2 type (B11131i, l) was found. It was most likely used for a casket, suggested to be *c.* 45 cm in length. The casket was situated in the western end of the funerary boat, at the feet of the deceased. The burial was disturbed by farming, but the excavation indicated that the casket contained balance scales, three lead weights, possibly also a hammer. The burial also contained a sword, an axe, a sickle, and a whetstone. The character of the casket is similar to both Bygstad and Eide; items linked to trade are a common feature, indicating persons connected to craft-working and weapons.

Returning to Gloppen, the last of the western burials is from Myklebust in the area of Breim. This contained a 1B.3 type key (B11537y), and a casket or chest secured by a corresponding AA1.3 lock (B11537x, z, w, æ). In a grave oriented approximately east-west, the lock was situated south of the centre with pieces of horse harness; the key was in the vicinity, along with ‘a collection of tools’ and a long slate whetstone (Kvalvåg 1962:2, my translation). The tools referred to may include a knife, a spoon-shaped drill, a small hammer, a wood planing tool (*‘skavjern’*), a celt, shears, and a potential file. All the objects may have been inside the casket or chest, which seems to have been placed along the lower body of the deceased. Other burial goods were a sword, a spearhead and two shield bosses, about ten arrowheads, two horse bits, harness fittings, strap mounts, and fragments of cloth. A second excavation of the burial unearthed fragments of a sword, an axe, additional harness fittings, strike-a-light, nails with wooden remains and iron fragments (B12020). While the contents cannot be confidently determined, the assemblage is largely in accordance with the others presented above, with an emphasis on wood-working tools and possibly horse equipment, but without the trading aspect.

The last of the male burials in Western Norway is from Gausel in Stavanger, Rogaland. Here, in a large boat grave a 1B.2 key (S11728ag) was found, along with tightly packed metal-working and carpentry tools: a small pair of tongs, plate shears, two crucibles, a possible crucible 'fork', one or two files, a small knife, a spoon-shaped drill, an awl, and an edged tool, and five other undefined tools (Børsheim 2001:180–197, Fig. 162?). The arrangement of the implements indicate a casket of *c.* 50 x 20 cm situated on the left hand side of the deceased, by the upper body. The key was found among these things, and as no lock parts were identified, it may have been among the contents rather than for securing the casket. The burial also contained two swords, four shield bosses, an axe, *c.* 12 arrowheads, a sickle, a large pair of tongs, a hammer, an iron bellow pipe, two horse bits and harness fittings, knife, and other fittings and fragments. Unlike the other burials presented, this indicates a casket for metal-working tools, particularly non-ferrous metal-working, and wood-working. The larger metal-working tools and the bellow pipe were found by the lower half of the body, along with one of the swords, the axe, and arrowheads. Whether these items were kept in another container cannot be determined.

Moving into Southern Norway, there is one burial from this region, at Hovet in Valle, Aust-Agder, which may have been for a male individual. It contained a 1A.2 key and an A6.2 lock (C56977/3, 4). These were found close to shears and an awl in the northwestern corner of what is a potential chamber grave, at the feet of the deceased (Kjos 2009:20–21, Fig. 8, Tab. 8.4). These were most likely among the contents of a casket or container, the size of which could have been up to *c.* 50 cm in length and 25–30 cm in width. Two whetstones in the northeastern end could also have been inside the container. The burial also held possible iron dress fittings, a strike-a-light, an anvil, a knife with decorated handle, and pieces of leather and textile. In this context, the shears and awl were interpreted as reflecting leather-working (Kjos 2009:20), which along with the anvil and other implements indicate a person associated with craft-working.

The remaining five burials – four probable male, one potentially so – are from Eastern Norway. The first two are cremation burials with characteristics similar to the Gausel burial presented above. One is from Mound 1 at Besseberg in Øvre Eiker, Buskerud, excavated by Nicolaysen in 1891. In a concentration of finds in the southern end of the burial an iron 2B.3 key (C16403) and hinges and fittings for a likely chest were located. It may have been locked, but lock remains were not identified among the fragments, which may be due to the cremation. In this concentration two tongs, two hammers, a file, two potential punching tools, a horse bit, a knife, an arrowhead, a needle, and various iron nails, cramps and rivets were also found (Nicolaysen 1892). While burnt and sparsely documented, it indicates a chest containing metal-working tools, most likely for both iron and non-ferrous metals, along with items linked to horse handling and possibly hunting or warfare. The burial also contained (three?) ceramic pots, two melted beads, another arrowhead, a needle or awl, a copper-alloy ring, various iron and copper-alloy fragments, burnt bones, and unburnt animal bones.

The grave at Besseberg has parallels to the well-known grave from Byggland in Kviteseid, Telemark, excavated by Charlotte Blindheim in 1947 (Blindheim 1947, 1963). This contained an iron 1A key with missing bit, an iron 2B.2 key and corresponding B1 lock (C27454xx), an iron 2A.3 key with corresponding BB2 lock (C27454cccc), and a C4 type padlock (C27454bbbb). It should be noted that the numbering of finds in the initial documentation is not correlated to the later catalogued finds list, which makes the consideration of the contents and location a challenge. However, some general observations can be made. It seems that the pull key and the padlock were not related to securing containers and may represent contents, while the turning mechanisms respectively secured two chests (see also Kaland 1972b:128–132). Following the plan of the find distribution by Blindheim (1963, Fig. 4), the first chest (xx, key and lock find nos. 14 and 15) – seems to have been about 1 m in length and 25 cm wide. It was located on the southern (i.e. right) side of the body and could have contained the following: two anvils, another anvil or sledge, a draw plate, an arrow head, three hooks, what could be a pulley, iron nails, slag, in addition to hinges and fittings, and most likely the pull key. The second chest (cccc, key and lock find no. 31) seems to have been about the same size, *c.* 60–100 cm x 25–50 cm, and was located on the north (i.e. left) side of the deceased. Its contents is estimated to have been two knives, a file, a chisel or wedge, two arrow heads, a linked chain, a strap mount and various fittings, slag, a hone, and nails and rivets, possibly also the padlock. There were also additional metal-working tools and other items found south of the first chest, but whether this suggests a third container cannot be determined.

The funerary assemblage of the Byggland burial is extensive with a wide range of exclusive weapons such as swords, spears, and shields. However, it has been questioned whether this burial is one or several. In a recent article, Frans-Arne Stylegar (2014) has argued that the cremation grave – which the chests are part of – belongs in the late 9th century AD, while the majority of the weapons and horse equipment belong to up to four interments from the 10th century. An axe and a spear, a horse bit and two sickles, and the contents of the chests are considered as belonging to the cremation burial. In this light, the locked chests with tools are more prominent among the grave goods, reflecting the storage of items linked to highly skilled craftsmanship. According to Stylegar (2014:97), Blindheim's interpretation of a master smith interred with all his exclusive products is no longer supported by this re-evaluation. Although the amount and range of implements in the Byggland burial are almost without parallel, the revision brings it more in accordance with other burials presented here, in which tools and other objects are placed into a grave in (often) lockable containers.

This is a characteristic of the next three burials as well, which are from Vestfold County. The first two are from the cemetery at Gulli in Tønsberg, both boat graves, excavated in 2004 (Gjerpe 2005). The first of these was clearly looted, however, a casket was located in the northern end of the boat. It may have been broken into, as the only remains of a lock were two hasps (C53655/8), but some of the contents were in place. The casket was about 50 cm long and 30 cm wide, containing a chisel, three whetstones, an awl, a sickle, flint, a strike-a-light, and a possible fitting for a sheath. Much like other burials, both male and female, the contents are characterised by variety in terms of everyday objects, agricultural tools, as well as crafting tools – in this case, possibly wood and leather-working. It is suggested that this burial was male, based on the chisel, and its similarity to the second burial at Gulli.

The second burial contained another casket of similar size, with an intact AA1.2 lock and a 1A.1 key (C53660/8, 9). The key and lock do not correspond, unless the key has a missing tip. The casket and key were found in the southern end of the boat, at the feet of the deceased. It contained tongs, a hammer, an awl, a wood planer, a chisel, a potential spokeshave, a knife, and another tanged tool with wooden handle. The burial also held a sword, an axe, a sickle, an iron pot, a knife, a celt, and a strap or belt buckle. The casket seems to have held exclusively tools for metal-working and carpentry, although other items of degradable materials could also have been inside. The two burials show some similarity in contents, but differ somewhat in what items are placed inside and outside the casket. The first burial could have contained weapons that were looted.

The last of the male graves is from Kaupang Nordre in Larvik. It was located at the cemetery at Bikjholberget, excavated in 1950 (K/1950, gr. III, Blindheim and Heyerdahl-Larsen 1995:62–63). It contained a lock plate for a turn-and-slide lock, for a casket or chest (C57002/8). Its contents seems to have been tweezers, two shears, a needle case, a needle whetstone, and strike-a-light. There were also two swords, two spears, a shield boss, a scythe, and two knives. The casket or chest was located by the hips of the individual, on the right hand side. The container held miscellaneous artefacts for personal care, making and mending cloth and/or leather, making fire, and the shears could have served a range of purposes. This find is the only burial with weapons that has identified items for sewing in a lockable container, without tools for other types of crafts. Traditionally, without the presence of weapons, sewing implements would have been considered a criterion for female gender determination, which illustrates the interpretive issues inherent in gendered perceptions of crafts. In this case, there are no clear indications of a so-called double grave, but the next burial has indications of two individuals with respectively male and female gender.

This burial is from Fyling (or Føling) in Gaular, Sogn og Fjordane, Western Norway, where two graves were discovered in 1961, one being a double cremation burial in a boat (Bakka 1961). This held an iron 1A.3 key, a possible iron 1B key, and an A6.2 lock (B11470ak, am, an). The former key does not correspond to the lock, but the latter could have, in theory, but it is missing its bit. The contextual information is not good for this burial, as it was partially disturbed by bulldozer before archaeologists were called in. However, it may provide some insight into how locked containers were applied in such a context. The disturbed half appeared to be the ‘male’ part, while the section containing the female-gendered artefacts was largely intact. The finds were closely packed together, and included two oval brooches, a trefoil brooch, spindle whorl, the 1A.3 key, a sickle, an iron fitting with a ring, parts of a wool/linen comb, two horse bits, a red glass bead, fragments of a whetstone, in addition to burnt bones and boat rivets. On the disturbed side, and in the soil that had been displaced, the following objects were found: a sword, an iron pot, a rattle, three shield bosses, a spear, an axe, two knives, eight arrowheads, a celt, a file, a spokeshave (?), fragments of whetstones, shears, a sickle, a horse bit, casket hasps or hinges, fittings, and fragments (including the lock and the possible key). While the original location could not be recreated, it is possible that there was one lockable container with carpenter tools and other implements on the male side, potentially with a key, and a key with a possible container on the female side, based on comparisons with the burials presented above.

Summarising the analysis of the Viking Age containers, the main observation is the domination of tools. Larger weapons do not occur in containers, but arrows appear, mainly in male-gendered burials. There is significant variation in the types of tools and their combination in different contexts. Certain tendencies may be related to gender, or to the construction and definition of gender-related roles, such as textile-working equipment in female burials and tools for metal-working and carpentry in male burials. Sewing items occur related to both genders, although rarely. Balance scales and weights are identified in burials of both genders, but are only observed as part of locked contents in male burials, which may be a matter of preservation and documentation.[4] Sickles and equipment for horses occur widely, as do shears, knives, and strike-a-lights. Items that could have been amulets or personal adornments appear rarely, in burials of both genders.

The contents of the Oseberg containers warrant further mention, as they present an extraordinary variety, particularly of organic materials. While it is unlikely that such an array was common in Viking Age or earlier burials, it highlights what kind of artefacts and resources that could have been present in the containers of the other burials presented here. Some of the containers seem to have contained few objects, but it may be that they were full of things of organic materials. The containers in Oseberg seem to have been filled to the brim, but if subjected to poorer conditions, only a small portion of the contents would have been visible archaeologically. In the burials presented, tools of metal and occasionally bone dominate, while Oseberg demonstrates a richness of wooden items, foods and seeds, and textiles. This could have been more common than suggested by the material. Such a material discrepancy is relevant for all of the periods and contexts under study here. It does not only influence what impression is made of the persons and their roles, but also of what was considered fitting and necessary to keep under lock and key.

The 25 burials from the Viking Age analysed above are a small selection of the burials from this period, and the full range of how locked containers were used in funerary contexts can only be guessed at. One aspect is their use for containing the deceased themselves, which seems to have been largely overlooked in discussions of Viking Age burial customs.

[4] Female burials with balance scales and weights are B4511 and S4009, and a double burial C58880

8.3 Burials in lockable containers

There are four burials where the application of containers as funerary coffins may be observed (Table 8.13). Three of these are cremations and one an inhumation, all from the Viking Age. These are unique cases of unfamiliar funerary customs, and they bring the role of locking in interments to the fore; representing the potential difference between lock and key as a grave rather than grave goods, as a boundary around the dead rather than their selected things.

ID	Key Lock	Container (size cm)	Contents	Burial form	Gen.	Date (AD)
C15801 C15802 C15816	AA2.2 2A/2B	Chest (*c.* 60 x 30)	Burnt human remains, ash, oval brooches in birch bark, 12 glass beads, circular Irish/Insular brooch, *key*, shears, knife, weaving batten?	Cremation	F	800–900
C22519b C22519c	2 2B.2	Casket rectangular	Oval brooch, shears, knife, wool/linen comb, *key?* , and burnt human remains	Cremation	F	800–900
C22757a	1A.1	Box (22 x 14)	Burnt bones, iron cylinder, *key?*	Cremation	Ind.	800–1050
C57059/6	BB2	Chest (125–140 x 65–75)	Adult human bones, child's tooth, 2 shield bosses, file, knife, slate whetstone + spear head, axe, and iron pot outside	Inhumation	M +C?	850–900

Table 8.13. Burials with lockable containers holding human remains.

The first of the cremation burials is from Skedsmo Prestegård in Skedsmo, Akershus, Eastern Norway. Excavated in the 1868 by Anders Lorange (1869), this is such an early find that one could suspect the information to be questionable. However, Lorange's description of the burial context is so detailed that I find it trustworthy and convincing. He identified five cremations in Mound no. 7 at the farm, one primary burial in the centre and four in the sides. The fifth burial was on the western side of the mound. Here, cremated remains and artefacts had been interred in a flat-based chest and preserved *in situ*. The chest held an AA2.2 lock, and there was a copper-alloy turn key of 2A or 2B type among the finds. According to Lorange (1869:44–45), the imprint of the chest was visible in the soil, with its fittings in the original place. Burnt bones, ash, and artefacts had been placed inside it in a visible order. There are three main pieces of information can be extracted from his description.

The first concerns the form and construction of the container, which is so rarely discernible in burials. The chest was around 60 cm long and about 30 cm tall (5.1.6). The width is not stated. The lid turned on two hinges, a circular carrying ring was likely placed on the lid, and the base was strengthened with corner fittings. What has not been observed before is the fastening of a strap between the lid and case. As Lorange assumed, this was most likely for preventing the lid from turning too far, which could have put strain on the hinges. The strap would allow the lid to be suspended in an upright position, easing the movement of closing the chest.

The second set of information concerns the chest being 'filled' with human remains – ostensibly a woman – and the order of the deposition. First, the ash and bones had been collected from the initial pyre and placed inside, possibly with the bones in the centre, enclosed by the oval brooches wrapped in bark and glass beads (twelve, not six), and more ash filled around them. An Irish-styled insular mount brooch was placed *c.* 5 cm above these, most likely laid down in the next stage, along with shears. A weaving batten was situated somewhat higher, possibly on the chest's lid, or on top of the burial remains and artefacts. Where the key was situated is not specified.

The third observation is that, contrary to what Lorange believed, the key and lock do not fit together. The turn key could not have operated the pull-and-slide lock. The key was inside the chest, reasonably as part of the burial goods. Hence, the deceased could not 'unlock' the chest, as it were, and does not have a tangible link to the chest itself. One question, then, is whether the chest had belonged to the deceased in any way; another is whether or not the lockable ability of the container was practically relevant in the interment – if the deceased was locked into her grave. In this case, the answer cannot be determined. What can be said is that both a locked and unlocked scenario is equally possible from a technical viewpoint. This lock type allowed the lid to be closed without locking it, so it could theoretically be unlocked. However, it could also be locked without the use of a key, this only required sliding the springed bolt by its handle. The one aspect that points most convincingly towards the chest *not* being locked is the absence of such a springed bolt; only the hasp and lock cover were present. Considering the well-preserved state of the find, it is curious that this piece is missing. Thus, it is possible that the lock was broken before interment and was no longer functional. In other words, the chest may have not have been selected because it was lockable, but because it was not.

After encountering the Skedsmo burial, I searched the lock and key burials for signs of similar cases and found two possible candidates. The first is from a long mound (No. 3) at the site of Skinnfellholtet at Aas in Ullensaker, Akershus, which was excavated by Jan Petersen in 1920. Here an iron 2B.2 key, the handle of another turn key in copper alloy, and a BB1.2 lock with full lock plate, warded lock bolt, and hasp (C22519b-c, e) were found, as well as a casket handle and a hinge (see Figure 6.57, left). The finds also included a singlelayered oval brooch, a pair of decorated shears, a small knife, a linen/wool comb, and iron fragments, along with burnt bones. Following the catalogue description, all of these things were found together in a small rectangle in the western part of the mound, suggesting that they were inside a casket-sized container. There were also two other concentrations of burnt bones in the mound, indicating three cremation burials, similar to Mound No. 7 at Skedsmo.

While it cannot be established that the Aas casket was used as a funerary container, it is a strong possibility. In addition to the four-sided imprint in the soil, none of the associated artefacts show signs of having been burnt, indicating an initial cremation and secondary deposition of cremated remains with artefacts. However, there are some differences to the Skedsmo burial. Here, the complete key corresponds to the lock. It cannot be determined whether the casket was locked, and where the key was placed. The lock spring is missing, and the bolt is in an intermediate position, which means that it could have been open when buried or that the lock spring had deteriorated, causing the bolt to have moved slightly. The key could not have been inside the casket if it was locked, as the key would have been necessary to lock it. If the key was inside, the lock must have been open – unless there was an identical key, which is improbable but not impossible. In this case, I find it unlikely that the missing lock spring represents a non-functional lock. These thin metal strips are very fragile and are rarely preserved. Thus, it cannot be confirmed nor rejected that the interred person, most likely a woman, was physically locked into the casket.

The second candidate is from Furuset, a few kilometres north of Aas, in another long mound excavated by Petersen in 1921. No lock was identified here, but an iron 1A.1 key (C22757a). The key was found alongside a circular ring with cramp fastening, a cylindrical piece of iron, and burnt bones, all within a rectangle measuring 22 cm x 14 cm, situated at the eastern edge of the mound. In the catalogue description, it was stated that the finds could have been encased in a container of perishable material, with reference to a find from Vågstad, a neighbouring farm to Aas (possibly C22753). The Furuset container is so small that I would consider it a box. Its size is comparable to the Oseberg box, which could indicate that it had a sliding lid. Theoretically, it could have had a small mechanism resembling the A3 type on the Oseberg box, which would be highly susceptible to fragmentation and most likely unidentifiable when the box itself deteriorated. However, this remains a speculation. What the Furuset grave attests to is the interment of a cremated person with a key in a container, lockable or not. So while the sizes are very different, it can be compared to the burial from Skedsmo, in that locking may not have been the motivation for selecting the container as a vessel for the dead.

The last of the burials in lockable containers differs from the others by being an inhumation grave in a large chest. It is from the cemetery of Søndre Bikjholberget at Kaupang, excavated in 1955 during Blindheim's investigations at the site (K/XV 'Pulterkammeret', Blindheim and Heyerdahl-Larsen 1995:44–46, Figs. 42–43). The chest is the largest in the Norwegian material (cf. 5.1.6), and had a turn-and-slide mechanism of probable BB2 type, secured by two hasps (C57059/6). The lock plate was 58 cm long and was partially intact. This is one of the longest locks documented in Scandinavia, only surpassed by the BB1.2 lock on the largest Oseberg chest, which was about 65 cm long and had three hasps. The lock was not located at the front of the chest, as would have been expected, but was found next to the chest, clearly removed and placed to the side.

Items that could be identified within the chest were two shield bosses and a file, possibly also a knife and slate whetstone. Outside the chest a large iron pot had been placed by the western side, a spearhead at the southern short end, and an axe was driven into the ground by the eastern side. It also held unburnt remains of a presumed male adult as well as a child's tooth, estimated to be about 6–7 years. The adult was placed with the head to the north, lying on the back with head and arms to the eastern side (Blindheim and Heyerdahl-Larsen 1995:45, 120, Fig. 9). One curious element was that the legs below the knees were not visible, and it was theorised that the deceased had been dismembered to fit into the chest (also discussed by Lund 2013 concerning bodily destruction). As the lock had been intentionally removed, Blindheim suggested an even more dramatic interpretation: that the chest had initially held a child's burial, but was later unearthed and broken into, at which point a legless man was secondarily buried inside (Blindheim and Heyerdahl-Larsen 1995:102, 120).

X-ray images of the lock showed that the bolt was in locked position (Blindheim and Heyerdahl-Larsen 1995:104, note 17), which means that the chest was presumably locked when it was first interred. The suggested scenario could explain why the entire lock with hasps was moved to the side of the chest. Such an operation would have been difficult if the wood was firm, but would have been easier if the wood had deteriorated sufficiently to loosen the rivet fastenings. Still, I am not convinced by Blindheim's and Heyerdahl's interpretation. One child's tooth is a tentative indication of a child burial, and does not mean that the adult was buried later; the invisibility of the man's feet does not necessarily signify that he had been dismembered – to fit inside the chest or for other reasons. What I do not doubt is that the chest was broken into, and that the lock may have been removed entirely because it was locked. So, the burial attests to the use of a demonstrably functional lockable container as funerary coffin, one that seems indeed to have locked the deceased inside. Furthermore, the boundary the lock manifested was broken and the chest was transformed from lockable to unlockable. This highlights the role of the lock in terms of security and how locking may relate to the dead and the afterlife, to beliefs and customs – and to potential transgressions against these.

The Kaupang chest burial is a fascinating context and the only known parallels are three burials from Denmark. These are respectively from Lejre (Andersen 1969; Andersen 1993) and Forlev (Brøndsted 1932) on Zealand, and Fyrkat in northern Jutland (Roesdahl 1977). In the grave at Lejre, a person was found interred in a long flat-based chest (described in 5.1.5). It was fitted with broad iron bands around the case and across the lid. It held an AA3 lock mounted on a *c.* 55 cm long lock plate with holes for two hasps (see Figure 6.44). The side board at the foot end had been removed and the fittings straightened, and an extension had been built in order to fit the body inside (Andersen 1969:6). The burial goods included a bucket handle and a knife, and based on the preserved skull and fragmented bones, the person was estimated to have been a woman aged 35–40 years, most likely buried in the 10th century (Andersen 1969:6). The lock was very well preserved and no signs of it being non-functional can be seen in the mechanism itself. However, no hasps were located among the finds from what I can tell; thus, it is possible that it was not locked as part of the burial.

The find from Fyrkat, Grave 22b, has similarities to the Lejre grave and was also determined as female (Roesdahl 1977:118–125). Here, there were also indications that the short side of the chest had been removed to accommodate the deceased. The chest was *c.* 135 cm long, probably its original length, which corresponds to the estimated length of the Kaupang chest. The burial cut, however, was about 195 cm, indicating that either the woman's head or lower legs – probably the latter – had extended from the chest. A large, slightly curved hasp and hinges suggest a low arched lid like the Oseberg chests, secured by a sliding mechanism, but no other remains of the lock itself or a lock plate was identified. It may be that this was not present – i.e. the chest was not locked – or it was not preserved or identifiable. However, there were remains of a locked container inside the chest burial: it had a CC2 type lock with one hasp, the handle of a likely corresponding 3F key, and hinges and fittings. These hinges were more arched than the former, suggesting a casket or small chest resembling those from Hedeby (cf. 5.1.6, Figure 5.20 and Figure 5.21). These parts were found in the centre of the chest, possibly having been situated next to or on top of the interred woman. The grave goods included shears, knife, a small whetstone, eleven glass beads, an amber bead, and an iron pendant, as well as silver and gold thread. Among these items, the shears may have been inside the casket (Roesdahl 1977, Figs. 181 and 189).

The last parallel is the Viking Age inhumation grave no. 7 at Forlev, excavated in 1895 and treated by Johannes Brøndsted (1932). The burial coffin was a large chest, 140 cm by 50 cm in size, with a lock, a hasp, and three sets of angular hinges. From the reconstructed drawing (Figure 8.12), I would suggest that the lock was of AA3 type. A near complete skeleton was found inside the chest, and the person had been interred with bent knees, likely to fit inside. There were no associated grave goods and the skull was osteologically believed to be male (Brøndsted 1932:192).

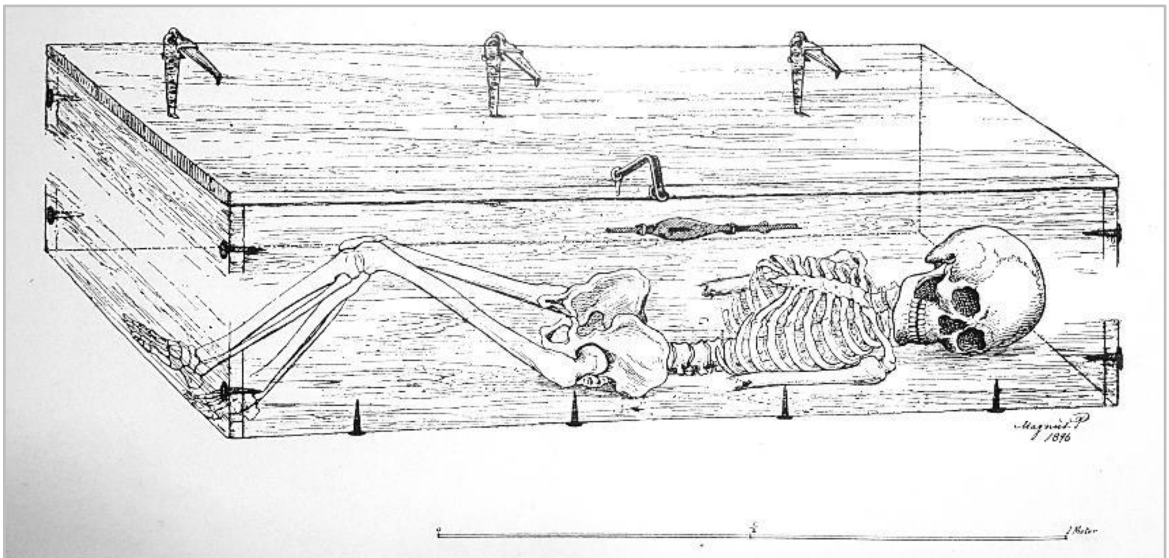


Fig. 102. Find 105, Forlev, Grave 7. Coffin reconstructed.

Figure 8.12. Reconstruction drawing of inhumation burial in lockable chest, Grave 7 at Forlev in Denmark (from Brøndsted 1932, Fig. 102).

Comparatively, the burials from Denmark and Kaupang show that chests were used for both men and women, potentially also children, and the varying furnishings suggest that the interred persons belonged to different social strata. In contrast to Kaupang, the Danish finds do not indicate that the chests were locked as part of the burial ritual (nor did they display signs of being reopened after burial). Presumably, the chests were not selected because of their lockable function, but potentially for their form and volume, or some form of significance that is not immediately discernible.

Returning to the Norwegian finds, the three cremation burials are all from within a relatively small area in the Romerike district, and could reflect a local and rare custom. The Skedsmo and Aas burials are both dated to the 9th century, while the Furuset grave is generally dated to the Viking Age as diagnostic items are absent. This burial form is, to my knowledge, completely unknown and I have yet to find parallels within or outside Norway. Cremation burials in ceramic and metal funerary urns and vessels are well-known in Scandinavia from the Bronze and Iron Ages, but the use of wooden containers, let alone lockable ones, is a new feature entirely. How common this custom was is unknown, as such burials may not have been recognised. The use of chests for inhumations seems to be equally rare, while it is possible that such burials are also not recognised and therefore underrepresented. The suggested date of the Kaupang chest grave is 850–900 AD (Ka. 316, Stylegar 2007:124–125), which largely corresponds to the Norwegian cremation burials, but is earlier than Fyrkat and Lejre. The Forlev burial is generally dated to the Viking Age.

Thus, using lockable containers for holding human remains seems to be a custom that arrives in the 9th century, possibly as cremations, with inhumations occurring in the late 9th and 10th century. It may be a custom limited to the Viking Age, but one find from Lund (Mårtensson 1973), suggests that chests may occasionally have been used as coffins in the Middle Ages. Shortly before this study was completed, I became aware that lockable chests used as coffins have also been documented in 8th to 9th century England, at Ailcy Hill in Ripon, North Yorkshire (Ottaway 2020:194, with references). There was no time to explore this link further, but it indicates that this burial custom may have been more common and widespread than has been previously recognised.

So how can we understand the use of lockable containers as funerary vessels? I agree with Roesdahl (1977:131) that it is unlikely that these items were made for the burial, but were rather selected from practical life to serve as coffins – or urns. That is at least clear from the two modified chests from Lejre and Fyrkat, which reflect conscious transformation from chest to coffin. Roesdahl compares the use of chests and wagons to burials in boats and ships, which is an important observation. However, I would add that while the latter are transport vessels that could move people and things, the lockable chests and caskets are different. They are inherently static in nature, made for standing and for enclosing things entirely, where boats and wagons are largely open carriers. While caskets and chest could be considered movable in terms of being transported, their shared characteristic with the transport vessels is their capacity to hold. It may be that this is why they were selected for burial, and not because they could be locked. Here, there may be a certain pragmatism in their use, as an ordinary coffin might not have been available at the time of death and burial. This would explain the effort put into transforming the chests from Lejre and Fyrkat. Still, the Kaupang grave does suggest that locking and security could have been a significant feature of these burials.

8.4 The contexts of locking: expanding boundaries and practices

Through the contextual analyses I have arrived at a set of observations about the use of locking devices in the first millennium. The most central include the following: that keys were part of metal and tool depositions in the Late Iron Age, but were not involved in securing the artefacts in the ground; that containers was the predominant form of locking, with the introduction of lockable doors and fetters toward the end of the period; that keys and locks occurred primarily at large rural settlements throughout the Iron Age, but appeared at increasingly varied and specialised sites over time; that there is a close relation between locking and places with craft-working activity and central functions, which is also consistent with a dominance of crafting tools and elaborate grave goods in burials with keys and lockable containers.

The social situatedness of locking for most of the Iron Age was among the upper echelons in society, with an increasing social distribution in the Late Merovingian and Viking periods. Locks and keys do not seem to have been a purely elite feature, with the possible exception of the Roman Period. Like the settlement evidence, the burials indicate social variation in where and by whom locks and keys were used or, at least, associated with. These results largely correspond to the analyses in Chapter 7, which indicate a technology that was widely distributed and diversified in terms of function and production, becoming more embedded into society over several developmental stages.

Containers are the main observable lockable unit and there are two main aspects that can be established about their use. The first is that there is a temporal development of the size and shape of containers which is correlated to a rising amount of things that were kept in them. This is not surprising, as a larger volume allows for the locking of more things (Figure 8.13 below), but the temporal factor is a new part of the picture. It signifies that containers set physical boundaries for what could be kept in them and that these boundaries were widened and transformed over time – and the lock mechanisms were part of this development. This is also illustrated by the appearance of fetter locks in the 10th century, and the potential door keys which indicate that locking doors was not technologically possible or socially desirable until the Late Merovingian Period. Hence, locks as boundary-upon-another-boundary (3.5) were added in differing forms to differing things depending on time, place, and context.

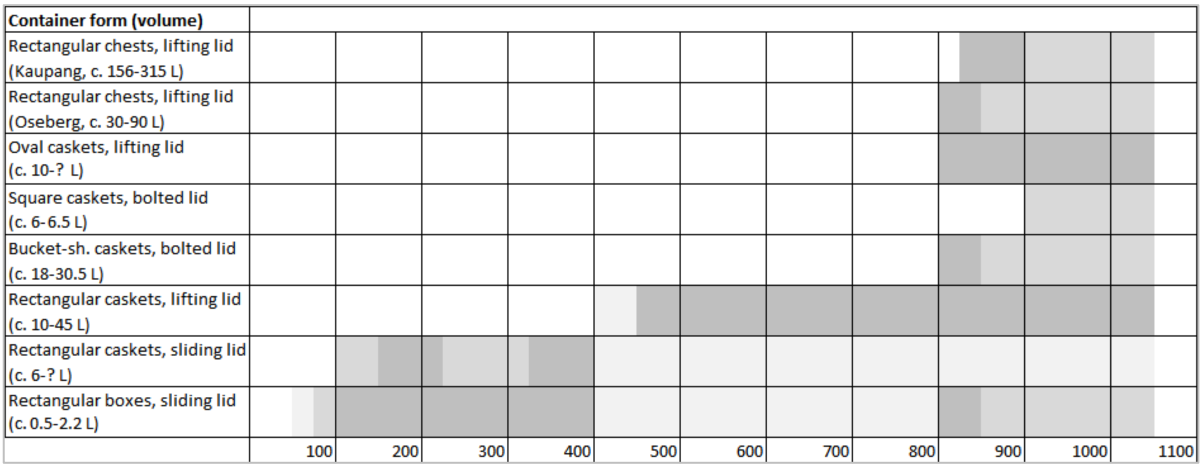


Figure 8.13. Chronology of container forms and volume in the Iron Age. The data foundation is mainly the Norwegian material, but finds from Scandinavia are taken into consideration (Illustration: H. L. Berg).

The second point is that there may have been certain customs as to what containers were supposed to hold and where they and keys were supposed to be placed in burials, but there was flexibility. Common themes are tools for textile-working versus metal- and wood-working in respectively female and male graves – which, notably, is reflective of the gender determination itself (see 1.2). Multipurpose tools are also a familiar attribute. However, there are also things that are less common and of personal character, and the composition of the contents were individual to each burial. Thus, there are signals of standardisation and potential idealisation as well as individualised expressions, as has been a demonstrated characteristic of Iron Age burials (e.g. Kristoffersen and Østigård 2006; Price 2008). This variety could reflect local or familial preferences and beliefs, the wishes of the deceased or of the family and relatives, or the community, or all of these aspects combined.

A related point is the question whether the contents of the containers reflect what they were used for in everyday life or if the composition is mainly a funerary construction. Following the perspectives of Kristoffersen and Østigård (2006) on Early Iron Age burials, the rules and beliefs of burial rituals may describe determined actions and artefacts that ensures the perfect or desired result, i.e. an ideal death. Here, the composition of the containers and the location of keys may be motivated by the desire for an ideal death, in that the things and their place were expected and necessary. However, the variability does suggest personalised features that could depend on the deceased themselves, what they had in life, and were given at death. Hence, both life and afterlife could be represented by the patterns, where the everyday practices were referenced in the burial and were potentially transformed or added to. One example of this is the Oseberg containers, which were filled up and stacked in a manner that could have exceeded their practical use in living life. Lamps among textile implements and horse crampons do not give an impression of well-organised household storage, rather, the impression is of storage for travel.

Returning to the container and contents, the transition from boxes to caskets in the Early Iron Age involve both a change in lock types, and storage of a small and limited number of items to more complex assortments of artefacts. The introduction of lifting lids meant that larger containers that could be opened more easily could be manufactured, which also warranted further modifications in locking mechanisms. The predominance of lifting lid containers from the Migration Period onwards (and to this day) illustrates the effectiveness and desirability of this mode of keeping and securing. The sizes increased markedly in the Late Iron Age, when the first indications of chests appear. The container development is accompanied by a preference for locks with sliding bolts secured by hasps, which allowed a longer lid to be secured. Large chests exceeding one metre in length seem to arrive around the beginning of Viking Age, in the late 8th or 9th century. At least, this is when they appear in the burial record, although they could have been in use earlier. The amount of locked things reaches its highest observable level in the Oseberg grave, which also demonstrates the widest variety in lockable containers. The largest chests are seen in the late 9th and 10th centuries, demonstrated by the chest inhumation burials.

To summarise, the development of locks and containers is characterised by a progression from small to large containers, although the small containers do not disappear. Rather, there is a gradually widening range of containers, and a similarly varied range of locks to facilitate their locking. The development is accompanied by an increasing amount and variety in keeping things that reaches its apex when humans are kept inside the containers. The locking of humans is also tentatively suggested by locks and keys for shackles and fetters. Additionally, as illustrated by potential door keys, the practice of locking buildings may have emerged in the Merovingian Period, perhaps earlier. In placing locks on doors, the buildings themselves become lockable ‘containers’ for humans, things, and animals. Thus, the presence and performance of locking becomes more multifaceted in the course of the Iron Age, taking new physical forms and involving new ways of managing the material and immaterial world. How this diversity came to be and how locking came to be increasingly intertwined in people’s lives are topics for the next chapter, where the ordering effects of locks and keys are discussed in both practical and social terms.

9. The order of locking: security, property, and organisation in the Iron Age

Through functional, typological, and contextual analyses, I have demonstrated that locking mechanisms were introduced and developed in stages in the Norwegian area, and that their use expanded and diversified in line with their technological transformations (Chapters 6–8). The results outline a complex picture of production, innovation, distribution, and application that connects to large-scale social developments and structures as well as conditions, actions, and ideas on the individual and collective levels. This chapter will address central aspects of this complexity to illuminate how locks and keys were introduced, applied, transformed, and made relevant under varied and changing social conditions in the Iron Age.

The first two research questions of this study, how locks and keys developed functionally and what they were used to secure, have been addressed in previous chapters, and forms the basis for approaching the latter two, which concern what purposes locks and keys were used for and their roles in social ordering and organisation. To answer these, the concepts of *security*, *order*, and *ownership* are chosen as main themes for the discussion. They make up the primary purposes for locking, in my view. Enabling and delimiting people's ability to restrict, possess, and structure themselves and things in relation to each other was how locking could and did participate in social order and organisation. An underlying aspect is the reflexivity of what locking did *for* and *to* people, and that this relation ties into how locking followed social transformations of the Iron Age. The three themes are closely intertwined (Chapter 3), and to treat them separately is not fully possible nor desirable. They will therefore partly reach into each other in the following discussions, which will also illustrate their interconnectedness.

I begin with security (9.1), which is the pivotal point of the technology and what enabled locking to order. What made locks and keys work and perform their tasks is the main subject, and starting from their physical constructions and agencies I explore the physical protection offered by locking mechanisms in relation to protection in the form of norms and values. The discussion encompasses perspectives on justice, considering in what ways locking was upheld by consequences to transgressions. A central factor is how security and protection may have differed in accordance with differences and changes in locking technology and its applications in various social conditions and contexts.

This bridges into the ways locks and keys were applied to order things and spaces (9.2). Here I demonstrate and discuss the chronological and contextual differences in how different locking devices were used, highlighting that locking was not uniform during the Iron Age and was by all accounts contextually and situationally dependent. This, again, plays into the physical possibilities and limitations of locks and keys and how these correspond to a range of uses, necessities, and desires for a range of varying individuals, groups, and communities.

Following the physical differences and changes in locking devices, it will also be argued that there were different parameters for locks and keys to manage property and mediate ownership and possession (9.3). Locking encloses things and spaces and connects them to humans through the lock and key, and may therefore be seen as a prime expression of individual ownership. However, whether locked property was indeed 'personal' and 'private' as opposed to 'collective' and 'public', and to what degree it is possible to determine what these concepts entailed, is questioned and discussed from the perspective of the locking devices themselves and what they have been shown to secure. From this, I explore locks and keys in connection to social differentiation, social statuses, and legal rights, seeing how they participated in ordering people, things, and spaces in relation to each other.

Having outlined perspectives of locking as security and management of human-thing relationships, I bring locking devices and locked things into a discussion of social order and organisation on the large scale, expanding the perspective beyond the bounds of the Norwegian area (9.4). The focal point is that the relevance of locking and its uses in the everyday was likely intertwined with the fundamental structures of how people lived, meaning that locks and keys were produced and used within certain societal parameters. Here, it is explored how their technological transformations (7.3) were connected to specific and changing elements of social organisation – namely mobility, sedentism, hierarchisation, and social complexity – building on recent additions to a debate on Iron Age social structures in Norway and Scandinavia.

Lastly, the question why locks and keys have such permanence will be addressed (9.5). By considering the presented developments from an entanglement perspective, I suggest that the answer lies in the effects of locking and its potential entrapping characteristics, which may account for its 'stickiness' and increasing embeddedness in society from its introduction in the Roman Period until the present day.

The concept of entanglement is the overarching framework for connecting security and ownership to social order and organisation because it actualises the interconnected and interdependent relationship between humans and things. This connectedness and dependency means that locking devices, their designs, and the tasks they performed (cf. Robb 2015) were not outside of or reflective of order and organisation, but part and parcel of how it was achieved, maintained, and transformed. Locks and keys were simultaneously dependent upon social order and organisation and were participants in its production and execution.

The discussions in this chapter will centre on the functional understandings presented in Chapters 5 and 6 and the main developmental stages outlined in Chapters 7 and 8. They make up the basis for the topics discussed and can be summarised into these six points:

1. *c.* 70–150 AD (B2): Introduction of locking to Eastern Norway. The mechanisms introduced are A1.1 locks operated by 1A.1 keys, securing sliding lid boxes. Their spread along the coast in the Late Roman Period is indicated by keys. A2 and A5 occur singularly. Finds from large farm settlements/centres in addition to burials. Typological connection to Germanic areas.
2. 400 AD: Disappearance of A1. Sliding lid boxes are continued without locks. 1A.1 keys are continued and iron 1A.2 keys appear sometime afterwards (D1).
3. *c.* 450 AD (D2a): Appearance of A6 locks on caskets with lifting lids and 1A and 1B keys in iron and copper alloy, most likely produced locally. Main concentration in the northwest and southwest, particularly in D2b. The first sliding-mechanism with hasp, AA1, is introduced towards the end of the period, potential connection to British Isles. In addition to farms and burials, finds appear in outfield settlements and potentially centres of socio-political power and craft manufacture.
4. *c.* 550 AD: Disappearance of copper-alloy 1A and 1B keys and the western concentration. AA1 is continued alongside A6 locks and 1A and 1B keys of iron. The first padlock, A7, may appear around 600 AD.
5. 8th century AD: Appearance of AA2, as well as early indication of turn keys (2B) and presumably turn locks; potential link to western Continent. Chests and door keys (1A) indicated. Finds at central/multipurpose sites in addition to farms and burials.
6. *c.* 800–850 AD: Appearance of large chests, bucket-shaped caskets with bolted lids, and return of locked sliding lid boxes. Appearance of new key types (e.g. 2A, 2C, 3A, 3E), container locks (e.g. A3, A4, AA3, B1, BB1, BB2, BB4, CC1), and padlocks (B2, C1, C4). Stronger indication of doors locked (1B, 1C, AA4), mainly at urban sites outside Norway (2C keys, B4, B5 locks). Finds from metal and tool depositions as well as central/multipurpose sites, farms, outfield sites, places of specialised craft, and a marked increase in burial finds until *c.* 950 AD. Local and/or

regional lock and key production; extensive trade and travel activity. Locking widely present across Norway. Fetter locks (C5/C6), C3 padlocks, and 3B keys possibly introduced towards the end of the period.

These points of transformation present some of the study's main results and will be referenced throughout the chapter, which aims to show and discuss how the various transformations connect to certain societal developments in the Iron Age. Here, the discussion will move vertically in terms of chronology and change, but also horizontally across parallel subjects, periods, contexts, and places, illuminating some of the interconnected aspects of the outlined developments.

9.1 Security and protection (or what locks and keys 'do')

I begin by examining the parameters for how locks and keys acted as security devices, both physically and immaterially. Securing is intrinsic to locks and keys' ability to contribute to order, as drawing boundaries and controlling access enabled people to produce order and counteract disorder (3.7). It is also at the core of their agency, which affected and was shaped by people's behaviours, attitudes, and values (3.5, 3.6). Thus, understanding how locks and keys worked in the Iron Age entails connecting the technology to immaterial structures that upheld locking, considering the developments from a perspective of values, codes of conduct, and social repercussions.

So, what level and form of security did locks and keys represent during the Iron Age? Was the security they offered uniform and static, or were there several forms of protection that changed over time or context? These questions will be explored in the following, where I will consider in what ways the locks and keys from Norway were able to 'do' security in this period, elucidating their possibilities and limitations from their physical constructions and use. Seeing how physically protective locking devices were provides a venue for addressing to what degree norms and values played into protecting locked property, and regarding locking as a technologically as well as socially anchored practice.

To do this requires establishing some general points about lock and key construction and agency, and how their use and production were entrenched in levels of knowledge and know-how. Access and control are central to the agency of locks and keys. A lock can be regarded as a switch and a filter, which can be turned 'on' and 'off' using a key and allow only select persons to pass through (following the perspectives of Unwin 2007:156–160 concerning doors). The physical parameters that enable locks and keys to function in this way relies on what I regard as the *dual dimensions* of their object designs.

9.1.1 Dual dimensions: a matter of knowledges and agencies

Having studied the lock and key finds and what they secured from a functional and utilitarian perspective (Chapters 5 and 6), it is clear that they define and separate what is inside from what is outside – what is accessible, visible, and known and from what is inaccessible, hidden, and unknown. The lock and key manages concrete dimensions of open and closed, which are inherently dual and opposing, yet interdependent and reflexively defined. Recognising this duality also leads to acknowledging other dualities in how locks and keys (and locked things) were formed and used, and the connections between them.

Containers and doors both have an outside and an inside, controlling what is visible and accessible by their physical make-up. However, the locks and keys themselves also have what can be called an outside and an inside; whether on a container, a door, or on the wrists of a captive, the outside is visible, 'public', and communicating, and the inside is hidden, 'private', and potentially secret or restricted. In keys, this is represented in the transition between the handle and the bit. The handle represents the outside, the part that is visible and touchable, by being in contact with the person that uses it. The communicating abilities of the outside is most clearly represented by decoration on the handle (cf. Kristoffersen and Pedersen 2020). The bit, on the other hand (although occasionally decorated), is more orientated towards the internal and functional, performing its task inside the lock.

The duality between inside and outside is more tacit and concrete in locks, as the physical construction and mounting of a lock creates a more clear demarcation between the two dimensions. Depending on the type, the lock plate and hasp or padlock case is the visible and 'expressive' outside, but these are also restrictive and secretive in nature by covering up and protecting the mechanism within. To an unfamiliar or unknowledgeable observer, the outside reveals little of how the locking mechanism functions. If one had found or stolen a key, one could roughly delimit its use visually (e.g. padlock, container, or door lock), but finding the specific one without additional information would require trial and error. Thus, through its outside the lock protects itself and the knowledge of unlocking it from those who are not to know and would attempt to interfere with the lock and what it guarded.

The inside of the lock consists of different components arranged in a fashion that makes the lock functional and distinct in correspondence with its key. As demonstrated through the lock classifications (6.3), the locking operation would happen largely out of sight through feeling and hearing, through gestures, movement, and sound. Whether the movement required to open the lock was successful or not could primarily only be felt and heard, by the sound and movement of the mechanism. The persons operating locks would have needed to see what they were doing, but the action of locking and unlocking was mainly internal and hidden from view, performed by the gestures, knowledgeable actions, and experiences of the users.

The duality of inside/outside reflects knowledge and know-how (Pelegrin 1990) in both the producers and the users of locking mechanisms. Out of all who could relate to the outside, only a few would have the insight into the inside. For users and spectators, there would be a divide between those who knew and those who did not, those who could and could not open a lock. Within a practice-theoretical perspective, this would pertain to being or not being carriers and carriers-out of locking practices (3.2). From a more nuanced perspective, there may have been different levels of knowledge and know-how among the people connected to locks and keys in the Iron Age. Many of the mechanisms were operated by specific sequences of actions which differed from each other in varying degrees (6.1.1, 6.3). Thus, depending on the specific mechanism, some would have close familiarity with it, possessing the mental concept/template of the lock and the movements required to successfully operate it. They would know how it looks, understand how it works, and how operating it should feel. They would know the necessary gestures and in which sequence they must be performed; when and how to pull, lift, slide and push; when to be forceful and firm; when to be gentle and wriggle; when the movement was correct and when it was wrong and/or harmful. Others may only have had partial knowledge or vague impressions of how the lock would be operated. They may have had theoretical knowledge, such as seeing it being opened or being given a brief explanation, but not the practical, embodied experience and knowledge. Being provided with the key they would most probably figure out how it worked, as would most people given the time and opportunity. Just like the archaeologist analysing a key to decipher its function (as previously mentioned in the examples of Hodder's jug and Latour's Berlin key), so could past persons decipher the same aspects. However, depending on their knowledge, experiences, and perspectives different persons would understand and interpret the features of the key differently. Correspondingly, some may have experienced other types of locks, perhaps of varying similarity, while others had only basic knowledge of what a lock and key were, and what they looked like.

The carriers and carriers out of locking were limited in the Roman Period, while there were many with no or little knowledge. This gradually changed through the Iron Age, and from the Late Merovingian Period onwards, I would argue that people with no knowledge of what a lock and key looked like were few. The carriers of locking practice would have been distinctly different from the others due to the element of access. Within access lies concepts such as ‘right’, ‘permission’, ‘control’, and ‘ownership’, which are discussed later in this chapter. By linking access to knowledge and skill, locking practice is characterised by a three-dimensional relation unifying competence, experience, and the socially dependent rights and possibilities to use and perform said knowledge and skill.

For producers, the embodied knowledge and know-how pertained to how locking mechanisms were produced and how they could be changed and improved. Here would be the basis for innovation and development, which was connected to how locking devices were used and what purposes they were to serve. There would also be differences in knowledge and know-how related to manufacture, as the acquired experience with diverse mechanisms would vary between craftspersons and their specialisations. This leads into the differing agencies of particular locks, which were inherently intended and produced by their makers.

Part of a locking mechanism’s agency resides in its physical possibilities and limitations and how these enable and delimit human action and thought. One example is the way each locked thing was constructed and operated (Chapter 5), another is how each lock mechanism could and could not be operated in relation to these things (6.3). In the Iron Age, keys were used to open locks, but only specific types required a key to close them (AA and BB, B3, B4, and B5). In some types, it would be impossible or difficult to remove the key from the lock when open. These mechanisms were consciously designed to prevent a key from being locked in, or a lock from being left open. These examples illustrates Robb’s (2015) point about how intention can be materialised in object design, being possible to observe and study by archaeologists (3.8.2). And, like the Berlin key, the design of certain Iron Age locks and keys affected and, indeed, controlled the actions of persons using them. Thus, they had a similar form of agency in forming and regulating human behaviour, and probably the attitudes that accompanied such behaviour.

In the case of the Berlin key, there were ways of circumventing the limitations set by the mechanism and the caretaker by filing the key bits so they would work as passkeys. From what I have been able to discern, such a manoeuvre was not possible or very difficult to achieve in most of the Iron Age mechanisms. A main trait of these early devices was that the placement and dimensions of the features were varied upon to achieve individuality –

rather than removing features, they would have to be altered in relation to each other. If one wished to transform a key so that it could operate a different lock one would, in principle, need to investigate the inner mechanism, which required it to be open and unguarded for a certain amount of time. An alternative way would be to get hold of the original key and make a copy, or make a lock pick based on it. Both of these strategies would involve metal-working competence, so this form of transgression would be demanding for those without such specialised knowledge. Hence, the locking devices were consciously made and assembled with certain possibilities and limitations concerning what could and could not be done (i.e. discipline), both for those adhering to and depending on their operative agency and those that wished to circumvent it.

Having established that how locks and keys could 'do' security physically is a dynamic between the devices and the intentions and knowledges of its producers and users, I move on to addressing their protective tasks in more detail and how these were connected to the social contexts in which they were designed to work.

9.1.2 Forms of protection

The anatomy of locking devices demonstrate that Iron Age locksmiths constructed and added design features that were not easy to change. The question is to what degree these efforts were centred on physical security. On the one hand, the individuality and complexity can be seen as direct attempts of preventing intentional transgression. From such an understanding, the discipline of locks and their success as boundaries relied on the work and innovation of producers in response to needs of consumers, which follows the arms race perspective of 'attack and defence' (e.g. Blomqvist 1941). On the other hand, the functionality and resistance offered by Iron Age locks and keys may be – and has been – questioned based on their material make-up (2.3.1). Considerations of how and why locks worked can be visualised as a range between purely functional and purely normative perspectives at each end. A functional extreme would be that the only thing preventing transgression is the lock, which needs to be continuously improved to be effective; a normative extreme would be that the make-up of the lock is inconsequential as what upholds it are social ideals, rules, and structures. The answers to how locks worked and developed arguably reside in the range between, and may have varied depending on lock type, individual construction, and application.

Continuing on my initial observations made in 6.4, the physical resistance differed between locked entities and mechanisms in the Iron Age. The sliding lid boxes from the Roman Period and Oseberg were relatively fragile constructions, as were the A1 and A3 locks that secured them. Based on how these boxes were built and the internal placement of the lock, the lock spring would prevent the lid from being forced open by hand. The Oseberg box lid (Figure 6.28) has a triangular pediment at the end that could offer purchase, and the lockless box from Garbølle has a wooden knob on its lid (Figure 5.4). Other preserved boxes do not have such means to slide the lids (Figure 5.1, Figure 5.2 and Figure 5.3). Without anything to grip by, the sliding lids were challenging to open without a key. From what I can discern, it was not possible to open these boxes by damaging the locks because they were situated on the inside. Leveraging the lid open would break it, thus, an alternative route would be to break the box itself and sacrifice the container for its contents. This is in contrast to the casket constructions of the Migration and Merovingian Period, secured by A6 and later A7 and AA mechanisms. Here, leveraging a lifting lid would require a tool, causing the mechanism to break but leaving the container largely intact. Thus, the two container forms may have worked differently in deterring transgression in that the former would require destruction of the locked container, while the latter would involve only partial destruction. To what degree this difference mattered is difficult to say, however, but an entirely broken container would arguably be more easily discovered than a broken lock.

Padlocks were arguably not particularly resistant, neither in construction nor placement. They would be situated on the outside of what they secured, available for attempts at picking and breaking without harm to what they locked. Box-shaped C1 padlocks in Birka burials show signs of having been damaged, but it cannot be ascertained that they were intentionally broken open (Tomtlund 1989:134). Similar padlocks are found at Helgö, some of which are so small and fragile of construction that they have been considered miniatures without much physical resistance (Gustafsson 2005:22). There are several fragmented padlocks of types C1, A7, and C3 in the Norwegian material, but it is challenging to determine whether any of them had been broken prior to burial. The one B2 padlock (C2601) is intact, as is also one C1 miniature lock (S2453o).

Select container and lock finds show that some of these became more enforced in the Late Iron Age, exemplified by more sturdily built chests, more extensive use of metal fittings, large lock plates and multiple hasps, particularly on BB and CC locks, as well as the compact fetter locks C5 and C6 introduced in the Late Viking Age (6.3, 6.4). These features would have made a smash-and-grab approach more physically demanding, and may also have left clearer signs of interference. Notably, enforced containers and mechanisms are in minority in the material, indicating that these were not common. However, these could be heavily underrepresented, as noted for the sea chests (discussed later). In contrast, door locks did not increase the physical resistance of the door itself, but seems to have primarily regulated entrance (6.4). The question, then, is if the locking mechanisms and locked entities in the Iron Age were not particularly strong in offering physical protection, what factors made locks and keys effective as security devices?

One aspect is that the resistance offered by a lock could be considered a form of protection by delay. In contrast to taking something that is unbound and open, the time and energy required to bypass a lock could have increased the chances of the transgressor being discovered – and of preventing the transgression. Noise may also have played a part here. For this reason, a destructive attack on locked things was most likely chosen when detection was not a prominent concern. Currently known cases of lock breaking is from the Viking Age. One elucidating example is the Kaupang chest grave, where the lock plate and hasps were removed (Blindheim and Heyerdahl-Larsen 1995 in 8.3). A similar tactic was seemingly applied on the chest from Hedeby harbour, found near the royal longship Hedeby 1 and presumed to have been robbed and intentionally sunk with a ballast stone (Kalmring 2010b:283). The burglary of the Oseberg burial is another example. Here, the lid and the lock-bearing front of one of the large chests were removed entirely (Grieg 1928 in 5.1.6, Figure 5.26), and the rectangular casket back panel and lid missing its hasp suggests a similarly rough treatment (Figure 5.23). Comparatively, the lid and lock springs on the bone/antler box were intact (Figure 6.28), indicating that the case may simply have been taken apart – in keeping with the observation above. While the contexts of these lock-breakings differ, they demonstrate the levels of resistance offered by the locks and the efforts taken to circumvent them – including an apparent disregard for penal consequences.

Another protective aspect of locking is that locks could provide proof of transgression, which penal consequences would arguably rely on. Lock breaking and picking would leave visible traces (as noted above), which would be something physical on which to base suspicions and allegations. This relates to locks working as seals (e.g. Gustafsson 2005; Tomtlund 1978). Because transgressing against locks involved leaving physical marks, an intact lock offered insurance that others had not interfered with what was locked (cf. Madsen et al. 2014:317). Furthermore, if a locked entity or its key was taken, the key could support the case of the accuser by being demonstrably fitted to the lock. In such cases, it would have been important that locking mechanisms were individual in construction because this allowed for linking locked things to the rightful persons – in daily life as well as in cases of transgression. Like a seal holding an insignia, the locking mechanism acted on behalf of the person behind it and could be proven so by correspondence between key and lock. I find this to be a convincing indication of why such effort was put into making unique mechanisms, especially when their physical fortitude was low. Arguably, there was nothing that prevented locksmiths from producing identical mechanisms. The observation that they largely did not – judging by a near complete lack of identical locks and keys throughout the period – testifies to conscious choices presumably rooted in locks and keys working as personified boundaries.

Following the concept of discipline, locks can be physically deterring by how cumbersome bypassing them would be. Based on the presented assessment, the constructional strength of Iron Age locks was generally limited but increasing over time. Broadly speaking, they could protect against accidents and low-effort attempts, but could not withstand determined efforts at breaking them. Thus, I agree with presented arguments that the security functions of locks and keys would have been reliant upon normative factors such as inter-human relationships, values, and social rules regarding acceptable conduct (e.g. Gustafsson 2005; Madsen et al. 2014:317). If a lock was physically easy to bypass, it follows that the consequences of such actions would need to be correspondingly severe for the boundary to be respected. Essentially, locks could not function without social norms and customs regulating boundaries and rights of control. At the same time, locks and keys were present because such norms were not enough to achieve desired behaviours (following Latour 1999, 2000a). Thus, it is the combination of material and immaterial discipline that makes locks work. This leads me to explore in more detail which normative structures may have upheld locking practices and in what ways they changed in correlation with transformations in locking technology and society in the Iron Age.

9.1.3 Security in context: technology, norms, transgressions, and consequences

From the reasoning presented above, it follows that the physical strength of a lock was in a reflexive relationship with the normative structure that upheld it, meaning that values and norms would have worked preventively and punitively in deterring unwanted actions against locked property in the Iron Age. In essence, there could be no effect without consequence. A premise is that transgressions were considered undesirable and ethically ‘bad’, without which there would be no motivations and purposes for locking. One question here is whether there was a correlation between 'weak' locking mechanisms and 'strong' normative structure, and vice versa. Another is whether changes in locking devices and locked things developed alongside and in association with changing social rules and regulations, for example for dealing with and exacting punishments for transgressions. As I will try to demonstrate, the answer may be a tentative 'yes' to both, but elucidating such aspects archaeologically is an inherently challenging task. Thus, certain legal sources will be introduced to shed light on possible connections between locking technology and socio-judicial factors.

It has been proposed that formulations in medieval laws about locking had roots in the Late Iron Age (e.g. Aannestad 2004:76; Eriksen 2019:159; Madsen et al. 2014:317, cf. 2.3.1), and while I agree that such formulations were probably not detached from earlier judicial concepts, it is challenging to determine if or what parts of these have Iron Age origins. To apply them retrogressively is therefore problematic. In addition, it is not known whether all forms of locking were upheld and regulated in similar ways within or across Norway/Scandinavia, and over time. But starting from the material and protective variation in locking mechanisms and locked things in the Iron Age, I argue that how locking was upheld normatively may have been dependent on what was secured, for whom locks and keys were providing security for, against whom they were meant to be deterring, and in what context. Thus, there may not be one clear and static answer to how locking was upheld and governed normatively in the Iron Age.

From private to public

Indeed, the physical protection offered by Iron Age locking devices point to uses in certain social contexts and circumstances. The containers developed from small to large with increasing material enforcement, but none of them could prevent direct attack; neither could doors and fetters. Thus, one can infer that situations of destructive conflict was not the context in which locking worked and had effects, but rather in the dynamics of everyday life. Reasonably, makers and users of locks were aware of their physical capacities and limitations. Their continued use and development should therefore be considered indications that they were not unsuccessful and inefficient as boundaries. That which in retrospect may be viewed as insecure and simple forms of protection need not have been so. Naturally, there were limitations and changes in the technological parameters of metal-working and locksmithing during the Iron Age (as discussed in 7.3), but there were also possibilities and choices. For instance, the relatively simple A1 lock was in use for about 300 years. Attributing this continuity to a lack of 'better' alternatives discounts the agency and innovation of craftspeople and consumers in the Roman Period. Both A2 and A5 were known in the later phase, and C3 padlocks were present in the Germanic areas (Czarnecka 2013), with which Norwegian communities presumably had direct or indirect contact. Acknowledging that the mechanisms in the material were not simply present due to external circumstances, but also by intentional choices related to technology and society, the continuity of the A1 type – and later types for that matter – can be seen as testament to their effectiveness and desirability.

Therefore, rather than seeing the locking mechanisms as variably 'low' in security or technologically primitive, it is more constructive to consider their construction as suitable for and defined by the circumstances in which they were intended to be effective. Containers were the predominant locked entities in this period, and the large majority of keys were for container locks (7.2.1). These are mainly found in association with individuals in furnished burials and places of settlement and social interaction (8.1.2, 8.1.3). The primary sphere in which these items were effective was arguably among familiar people. Their main task may not have been to keep strangers out, but rather various known individuals. In general, the relations between familiar people were probably characterised by predictability, trust, and shared values and norms (3.7.1), which means that the locks would not have needed to be strong to be effective. This could suggest that locking and how it was upheld socially in the Iron Age was largely by inter-personal relationships and rules and attitudes that regulated such relationships. Nevertheless, this may have changed in accordance with changes in locking, and maybe most markedly so in the transition between the Merovingian and Viking Periods (see below).

Lockable boxes and caskets were portable and could be kept by your person or be left where they were deemed 'safe', presumably within a group and/or place that was considered limited and predictable. Hence, locking a container would differ from locking a house or building in a larger settlement or town. Arguably, the former would refer and communicate to a specific few, and the latter to all that would live and move within the settlement/town. This example illustrates what I suggest to have been an expansion of locking in terms of social spheres, from the personal and private to the increasingly public; an expansion that seems to have taken place around the 8th to 9th century. As shown in 7.2 and 8.1, this is the time frame when locking was most noticeably added to more things (chests, buildings, humans) and took place in social contexts that were more public and heterogeneous (e.g.

long-distance travel, military campaigns, assembly, market, central place, town). The direction of security and locking grew from the specific and familiar to the general and unspecified. Notably, I do not exclude that locking (in the form of containers) were not part of the public sphere before the 8^{th}–9^{th} century, but the overarching tendency points to a more complex social distribution of locking that connects to the technological development. So, while simplified, locking seems to have diversified from being directed at one's closest social group and community in the Early Iron Age, to becoming more versatile and more generally directed from the Late Merovingian Period onwards. This is indicated by the lock types that are appearing and what they could lock at certain times and places in the Iron Age. Arguably, the technology and the circumstances of locking changed alongside each other.

Considering the distributions and the burial assemblage in particular, this development took place in tandem with an increasing social distribution of locking and specialised production, which has a certain logical correlation. As locks and keys became more available, they came into the hands of a variety of people and were therefore diversified in form and use, transformed and adapted to perform tasks in new ways for and towards more people.

Trust and honour

With this long term development in mind, in which locks and keys were largely working in private and familiar contexts, later to be brought into the more socially diverse and public, the concept of trust is actualised as a normative factor sustaining locking. Locking has been proposed to reflect mistrust within communities and efforts against transgressions of social norms (Gustafsson 2005; Hildebrand 1883:128–129). I largely agree, as locks would arguably be superfluous in a state of complete trust. However, I would like to nuance this view by seeing locking as a strategy for simplifying life by making it easier to trust people (following Luhmann 1979). I do not believe people of the Roman Period were more mistrustful toward one another than in earlier times, but the introduction of locking provided a tool for dealing with trust. Here, rather than seeing a lock as a direct defence that communicates suspicion and mistrust, it may be more fruitful to regard it as a material agent that mediates expectations of conduct. Like in Latour's (1990) hotel key example, the lock is a reminder and a stimulus to act a certain way – a way that over time may become subconscious and habitual (i.e. routinized practice). This can also be tied into Robb's (2015) view that artefacts can assert and uphold standards of behaviour by the effect of their object designs (3.8.2). Here, the discipline that locks invoked also made it easier to trust people, because people had confidence in the values and norms that upheld society and the persons within it.

Thus, the 'low' physical security levels in Iron Age locks can be seen as indication that trusting one's surroundings was relatively undemanding, possibly because social transparency was high and the number of unforeseen threat agents were manageable (cf. 3.7.1). It may also be inferred that the concepts that governed personal boundaries were strong. This fits with my argument that boxes and caskets were mainly within a familiar environment, particularly in the Early Iron Age. Correspondingly, the enforcements seen in the Late Iron Age may indicate a stronger desire and necessity to transfer trust from people to locks. This may not reflect increased mistrust and weaker normative control *per se*, but potentially of locking moving into social contexts with lowered social transparency, where control and predictability were reduced due to raised social complexity, such as increased social diversity, travel, settlement density, and social differentiation. Here, locking could be a precautionary strategy that allowed people to deal with everyday life without spending time and energy considering potential risks and threats, accidental and intentional – albeit by investing some time, energy, and resources in acquiring, maintaining, and practicing locking. In trusting the lock and people's adherence to its discipline and to social norms, it became easier to achieve a sense of order, predictability, and safety.

Continuing on this, another value that would have enabled people to trust – and locking to work – is honour. The Norse societies of the Iron Age are generally understood as honour-based social systems, in which honour and its counterpart, shame, were foundational values for the social structure (e.g. Hanisch 2002; Herschend 1998; Meulengracht Sørensen 1995; Skre 1998). Here, honour was central to the normative structure, to laws, customs, and moral codes (cf. Hanisch 2002:23). Actions that deviated from norms were sanctioned by reactions ranging from ridicule to murder, while actions that conformed were encouraged and rewarded. As stated by Morten Hanisch (2002:23), honour systems are dynamic, consisting of commonly shared values and norms, and models of social action which he calls 'ideals of action' (*handlingsidealer*). This concept is useful in that it allows for regarding the introduction and implementation of locking devices as accompanied by a new ideal of action: to respect the boundary of the lock. Adhering to the lock's discipline would be considered as honourable and normatively conformist, and transgressing against it as shameful and deviant. It is difficult to determine whether such a clear demarcation was ever present or implemented from the introduction in B2, but the continuation of locking from this time suggests that some normative structure supported the practice, and honour may have been central to this structure. Therefore, I theorise that the Roman Period societies may have incorporated this new ideal of action because it harmonised with the existing honour-based system.

Within this system, the integrity of individuals and kin was closely related to honour and its defence in cases of offence (Hanisch 2002:24). In regarding locks and keys as active and material extensions of persons (3.5), transgressions against locking devices and locked property may have been considered an offence against the persons and their integrity, which from the concept of honour would require restoration by compensation and/or penalisation. And this is how the values of trust and honour of respecting locks bridges into concepts of deviance and justice, in that living by these values entailed that consequences were necessary to restore order.

This leads to the question of how the ideal of respecting locked boundaries was enforced socio-judicially in the course of the Iron Age and to what extent it is possible to discern. Changes in locking technology and its uses may provide some insight when correlated with social transformations that occurred during the period. Of particular interest is the most prominent change that I have outlined: the expansion from locking smaller boxes and caskets to locking chests and buildings around the 8th to 9th century, which coincided with extensive implementation of locking in society, increased centralisation of power and people, urbanisation, travel, and trade. These processes may have been accompanied by changes in judicial systems, and formulations of local/regional laws that were enforced from a place of legal authority.

Security and justice: the example of theft

Criminal offence such as theft is often seen in relation to needs for security, although other threats may have been equally relevant to manage (Table 3.1). In the following, I will use theft as a starting point to address in what ways locked boundaries may have been upheld normatively through social justice. Theft is the most commonly referenced transgression against property in medieval legal formulations, often stated with corresponding punishments. The Scandinavian medieval laws differentiate theft from robbery in that the former was acted out in secret while the latter was an open and outright action (Jørgensen 1975:165), but for the sake of brevity, I will use theft as a general term for the unlawful acquisition and use of things. Outlining definitions of and responses to theft may provide an impression of 'what was at stake' – for the persons locking and for transgressors – and also of the social significance of property and ownership. To what extent the insights from medieval laws are relevant for Iron Age conditions is a central matter here, and I will tentatively suggest that parts of the legal material may retain elements of earlier customs, specifically outlawry, and maybe also corporeal punishment and economic compensation.

I will concentrate mainly on Norwegian laws, specifically the Gulathing and Frostathing Laws, which are the two earliest laws with preserved secular sections regulating theft (cf. Riisøy 2015:53, note 21). The oldest written documentation of the Frostathing Law is from the 1260s and the Gulathing Law is preserved in writing from the late 12th century, but both are presumed to have older roots (further elaborated upon below, Riisøy 2014:102; Robbestad 1981:9; Stenvik 2017:110). Following the Books of Thievery in these laws, theft was commonly penalised by execution or by outlawry (i.e. without legal protection, NO *rettslaus*), which also included paying compensations, while smaller cases of theft entailed forms of stoning (i.e. NO *spissrotgang*) and being forever named as thief; being outlawed and beaten up was also a punishment for trespassing, specifically into herb gardens (Hagland and Sandnes 1994:208–209, XIV., nos. 12-15; Langseth 1975:174; Robbestad 1981:227–235, XI. Ch. 1-12). The laws generally regulate (a man's) 'goods', but agricultural resources were mentioned in particular, and the amount that qualified as theft was relatively small, such as taking something worth an *ertog* or more (coin value, 1/7 of a cow, Riisøy 2015:57), a bushel or more of grain, hay, or drinking milk from another's cow, raw animal meat, or a hawk. This signifies that ownership rights to resources were strongly regulated (perhaps more so than personal belongings?). Locked possessions are not mentioned, locks and keys are only stated to direct responsibility in cases where stolen goods were discovered locked away (in the Gulathing Law, Robbestad 1981:231).

The Gulathing Law includes formulations differentiating between social status: a female born of kin (*ættbori*) caught stealing was to be taken out of the country; theft by those not of age (*umyndig*) were compensated by fines (*skadebot*); theft by thralls, particularly of foreign origin, were met by decapitation, flogging, and payment of fines, and beggars and female thralls were to have their ears and nose cut off for repeated offences. In general, the consequences for free, adult individuals centre around being excluded from life and society by outlawry and execution, which is illustrated by the introduction to The Book of Thievery in Gulathing Law, stating that anyone desiring to remain in the king's realm (most likely physically and socially) shall refrain from stealing (Riisøy 2015:57).

There are similar formulations in other Scandinavian and English laws, but they do not contain the concept of outlawry to the same extent as the Norwegian laws (Riisøy 2014). Following a study of judicial violence in the Viking Age by Keith Ruiter and Steven P.

Ashby (2018, with references), offences like theft were regulated by capital and corporeal punishment as well as economic compensation. In the Gotlandic law, *Guta lag*, punishments ranged from branding to hanging, depending on severity, recidivism, and the value of goods stolen (Peel 2015:156; Ruiter and Ashby 2018). The English legal corpus is dominated by execution and fines, as well as dismemberment, and the most severe punishments were for transgressions against the king's power and the rule and peace of the kingdom, which included theft. The laws list theft among adultery and rape as one of the most severe transgressions, and Ruiter and Ashby (2018:157) considers prescribing capital punishment to discourage such offences as an illustration of local peace, the kin-group, local relationships, and collective stability being of utmost importance.

Casting a quick glance at Germanic laws from the 5th to 9th centuries, these may add some comparative perspectives. They are from further afield in geographical terms, but should – in principle – be more chronologically and culturally corresponding, under the presumption that Germanic laws had a common basis. However, in two laws that contain regulations of theft, namely those of the 6th and 7th century Franks and Lombards, theft was exclusively regulated by economic compensations (Drew 1988b, c). Following medieval historian Katherine Fischer Drew (1988a:34), these laws were variably influenced by Roman ideals during their formulation and writing, and this may be one such instance. In Roman law, physical punishment for theft (Lat. *furtum*) was abandoned in favour of payment for damages by the classical period (e.g. Gaius 3.184–209, Jorstad 1959). The Germanic societies on the Continent such as the Lombards underwent a range of social transformations around the 6th to 7th centuries, including moving from a rule of force to a rule of law; they largely (but not completely) moved away from a system where execution of justice rested with the family, often in the form of vendetta and blood feud, towards a more ordered system of wergeld and compensation with payments in kind or coin (Drew 1988:11ff). Thus, while considering legal sources is outside my expertise, particularly those outside Scandinavia, these general observations lead me to suggest that the formulations regulating theft in Scandinavian laws were not influenced by Roman and Continental legal principles. This could signify that they retain some indigenous, older legal customs, and outlawry may be a central concept here.

Arguably, exacting capital and corporeal punishments give an impression of a certain social distance between judicial authority and offender, and I question to what extent such punishments were common for theft in local Iron Age communities, within and before the Viking Age. Kinship, personal bonds, and honour were central to these communities and their internal justice, while the non-Scandinavian and medieval societies were governed by state-formulated law. Following Ruiter and Ashby (2018), the legal systems of Viking Age England and Scandinavia were distinct in that the former was a regimented, top-down system of judicial violence, while the latter was more loosely defined, bottom-up system where laws were enforced on a local level by semi-official members of the community. Ruiter and Ashby (2018:171–172, with references) point to a low number of deviant burials with signs of judicial violence in Scandinavia compared to England, which is taken as an indication that outlawry was the predominant form of punishment. Outlawry being a common punishment in the Gulathing and Frostathing laws could suggest that this particular response was entrenched in older customs, possibly the Late Iron Age.

As discussed by historian Anne Irene Riisøy (2014), the concept of outlawry appearing in England in the 10th century (OE *ūtlaga*, ON *útlegð*) points to its introduction from Western Norway, placing its application in Norway in the Viking Age. The Gulathing legal district was established in Hordaland and Sogn og Fjordane with a centre in Gulen during the reign of Háraldr hárfagri ‘Finehair’ (*c.* 872–933 AD), and later expanded south to Agder and north to Sunnmøre, possibly under Hákon ‘the Good’ (reigned *c.* 934–961 AD). The Frostathing legal district was situated north of the Gulathing district and generally concerned the area of Trøndelag, with a thing place at Frosta established at least in the 10th century, likely earlier (Hagland and Sandnes 1994:XVII; Stenvik 2017:110).[5] Riisøy (2014:106–110) argues that concepts denoting outlawry – *skóggangr*, *vargr*, and *sekr* – in the Gulathing and Frostathing Laws, as well Old Norse poetry, belong to the oldest parts of these sources. Outlawry as *skóggangr* entailed being banished ‘to the woods’, which was not always a permanent sentence, but could be reversed by compensation. This was in contrast to *vargr*, which are presented as irredeemable transgressors, murderers, liars, breakers of oaths, and pledges of peace and security, resulting in non-human status. *Sekr*, which appears in poetry and Runic inscriptions from the 9th and possibly 8th century, may denote someone guilty, fined, under penalty, and/or subjected to search and pursuit to be killed.

Riisøy (2014:110–113, with references) argues that these three concepts constitute old, common Scandinavian legal notions that are earlier than the settlement of Iceland (i.e. 9th century), and form the basis for the *útlegð* concept, which she considers a mainly Norwegian term – possibly without a Common Germanic origin. This entails that outlawry

[5] As a side note, these particular districts display continuity in lock and key finds from the Late Roman Period to the Viking Age, and Hordaland/Sogn has the strongest concentration within the Norwegian area (7.1.2). While this correlation could reflect some form of connection between locking and socio-judicial continuity and significance, it is merely an interesting observation here.

as outlined in the three concepts represent normative concepts pertaining to degrees of alienation and expulsion that were particular to Norway in the Viking Age and potentially earlier. Here, different degrees of theft, similar to the Frostathing and Gulathing laws, could be punished by varying degrees of expulsion, which in graver cases could entail being killed and in lesser cases be compensated for. Considering the laws' differentiation of people's statuses, it can also be envisaged that infringing against a lock would be met by different reactions depending on relational and situational factors. The nature of the offence (e.g. theft, unrightful borrowing, disturbance, destruction; with malicious intent, in affect, or by accident), the identity of the offender (e.g. age, kin, status), their relation to the offended (e.g. family, friend, leader, subordinate, enemy, stranger), and the social context (e.g. public/private, farm, assembly, market, town, on travel) may have come into play.

Outlawry as punishment appears logical in a local-regional judicial structure as envisioned for Norway/Scandinavia, not only because it was less resource demanding (Ruiter and Ashby 2018:172), but arguably because social rejection and exclusion from land, kin, and community may have been a most severe consequence of breaking social norms: a form of social death (that may also have involved literal death). I suggest that it is within such a judicial system that locking should primarily be envisaged, as boundaries upheld by the importance of values, of people's social relations, and their interdependency on each other. So while tentative, I infer that transgressing against locked property in the Iron Age, at least the later part, may have entailed risking life and loss of limbs, and more importantly membership and status in society. Such a view resonates with the importance of honour in the Iron Age as a defining value and characteristic for individuals in life and death, and for holding society together, providing its order and orderliness (e.g. Hanisch 2002; Skre 1998). Thus, while fear of death, physical punishment, and fines may have been present, the impact of transgression on one's reputation and social relations was likely a decisive factor in the normative protection that locking offered. Hence, the main point is that locking devices in the Iron Age may have been of limited strength because social justice, as normative consequences to actions as well as values like the integrity of persons and possessions, was strong.

The security that locks and keys represented in the Iron Age was both materially and immaterially constituted. The protection they offered consisted of several forms of security in combination, which were directed in different directions. On the one hand, they separated and enclosed things and spaces on behalf of the person or persons who administered them. Here, security was directed inwards at what was locked, keeping it in place, safe, in order, and inaccessible – from view, use, damage, theft, or other. On the other hand, locking would also protect the person doing the locking from negative consequences such as loss, in which the security of things and spaces was intertwined in that of persons (cf. Table 3.1). At the same time, security could be directed outwards, keeping wider society orderly. Locking could protect people from themselves, so to speak, in regulating unwanted behaviour, reducing opportunism, temptation, and accidents, thus avoiding conflict. Certain things and spaces kept secure may also have been considered harmful to others. In managing risk of damage, loss, or adverse consequences for the person(s) locking, the lock may simultaneously have reduced the risk of other people committing transgressions and upsetting order, also reducing the need to enforce penal consequences which from a consideration of select legal sources were severe for the transgressor as well as their kin and community.

The material and normative security of locking may thus have been three-fold: protecting the thing or space itself, the person(s) dependent on it and responsible for its keeping, and those that would transgress against it. Regulating and separating things, spaces, and people can be seen as a technological and social strategy for maintaining physical and social order.

9.2 From material to purpose: ordering people, things, and spaces

Having established an outline of how the security function of locks and keys was anchored in material and social parameters, I will now venture further into more concrete ways in which locking ordered life in the Iron Age. A central objective in this study has been to show that locks and keys were not uniform, but had specific constructions because they had specific uses. As noted above, this has entailed seeing locks and keys as gatherings of particular constituent parts as well as pieces of larger wholes (i.e. lockable things) with their own physical parameters. From this perspective, I was able to state that the possibilities and limitations of locking mechanisms and lockable things pointed to use and effect in certain social spheres. In the following, I address and discuss their applications in such spheres, specifically in two main forms: as securing things in what can be generally termed storage (9.2.1) and in securing built spaces (9.2.2).

The main perspective is that, within a household or other social group, at home or elsewhere, the core purpose of locking related to maintaining order and reducing conflict between people and the material world. Naturally, it would have been possible to regulate things and spaces by other means than locking, but as suggested above, locks and keys can be seen as a social strategy for doing so in a particular manner, by the use of material, personified agents. This strategy was both continuous and changing in the first millennium AD.

9.2.1 Storage

I have found that containers were the predominant form of locking in the Iron Age, and these were used for storage and transportation in varying ways. The range of locks and keys and select well-preserved container finds, and how these occur over time demonstrate that securing things in containers was a dynamic yet continuous practice. The way containers were constructed, locked, and outfitted show that the possibilities and limitations for storing was diversified over time: lockable small boxes are characteristic of the Roman Period, also (re-)appearing in the Viking Age; caskets appear in the Migration Period and seem to have been the most common container type from this time; chests appear from the Late Merovingian Period/Viking Age, but to what degree they were as common as caskets is difficult to establish empirically (which will be addressed further below). It is likely that containers as secured storage may have been used similarly as well as differently within and across various contexts of life and activity, as I will show in the following.

The connection between locking and the domestic has been a prominent theme in earlier research (2.3), and locking devices – keys primarily – have been documented in relation to farm longhouses from the Roman Period to the Viking Age (Table 8.2, 8.1.2). However, the residential farm house is only one of several settlement forms or spaces of activity where locked containers would have served a purpose. The Norwegian settlement finds show that locking took place at sites away from the farm from the Migration Period onwards, such as outfield sites, production sites, assembly sites, and market places. Finds from Kaupang and Bjørkum, and from similar urban sites in Scandinavia such as Hedeby (Westphalen 2002), Birka (Arbman 1940, 1943; Gustafsson 2003, 2005; Nordström 2014; Tomtlund 1989; Ulfhielm 1989; Westerholm 2001), and Helgö (Tomtlund 1970, 1972, 1978) connect locking to non-agricultural settlements that encompassed other spheres of activity beside the domestic, most notably trade and specialised craft production. Additionally, the finds from the garrison at Birka (Gustafsson 2003, 2005; Hedenstierna-Jonson 2015; Karlsson 2009), demonstrate how lockable caskets or chests, padlocks, and keys were used in a military building. Thus, locks and keys in weapon burials from the Roman Period onwards could indicate these being used in martial contexts (see below).

Locks and keys found inside longhouses (e.g. Åker, Arstad, Modvo, possibly Huseby), pit houses (Bjørkum, Stedje), and outfield buildings (Dokkfløy, Mogen, Vikastølen) demonstrate their in-house presence and presumed use. At Arstad, Modvo, and possibly Åker, the finds appear in the residential part of longhouses, showing that the containers were situated in the area where people lived (see also the Birka garrison, where chests seem to have been placed along the walls of the hall, e.g. Gustafsson 2003:16, with references; Hedenstierna-Jonson 2015). This was where inhabitants would sleep, cook, eat, refine products, perform craft-working, receive guests, and so on, but also where they would interact, practice and negotiate social status and identity, teach and be taught the knowledges of social life (Croix 2014; Eriksen 2015:69–70) – and also find themselves in confrontations with each other. My view is that locks and keys were part of the 'doing' of these activities and, hence, of the everyday. In the longhouses – and presumably in other house types and places of interaction – lockable containers provided ways of keeping and restricting the use of things within the household/group, establishing order and tidiness both practically and socially by preventing interference, damage, and conflict, as well as manifesting belonging and rights pertaining to locked things and spaces. This view is anchored in considering lockable containers as linked to individual(s) through the having and wielding of key(s), and locking devices acting on their behalf (such as the security perspective discussed above). It also stems from a consideration of the artefacts found in containers, which generally speaking are personal items and tools.

A central aspect to containers is that they were movable and could be rearranged depending on activities and social zones of occupation. They could also be brought outside for other tasks, and be used for travel. So, unlike a locked building, a container was a mobile secure unit, versatile in that its contents and its placement could be varied at will. The difference in some containers and their temporality must be emphasised. Due to their size, the largest chests from the Viking Age (e.g. from Oseberg and chest burials) were less mobile than a smaller casket and box, and may have been mainly in-house containers or potentially for transporting cargo on ships (e.g. the small chests from Oseberg and Hedeby harbour). The others, however, could have been easily brought along for purposes pertaining to storage and transportation – as well as deposition, in terms of the caskets used in tool/metal hoards (Table 8.1).

It is less discernible archaeologically whether the locked containers in buildings were used for storing the things on behalf of single individuals or of the collective (discussed more in detail in 9.3). What can be theorised is that different containers may have represented different forms of belonging and security within a shared living space. There may even be temporal as well as social differences, in that the increased variation in containers were accompanied by similarly varied uses.

Going by the burial finds (Table 8.9–Table 8.12), containers could be used for keeping anything from personal effects to a range of tools and raw materials, trading implements, foodstuffs, weapons, items for making fire, for cooking and drinking, whetstones and sewing kits for maintaining equipment, different textiles like a change of clothes or finery for a special occasion, maybe also gifts and wares for sale or barter. While the containers in burials from the Early Iron Age do not display as wide a range of items as in the Late Iron Age, they could have held other and less durable things than indicated by the material – as could the later containers. In the burial and settlement record, we mainly see the outline of locking in funerary rituals and where people lived, but there are some indications of how locking may have been performed away from home, which are presented in the following.

The travel aspect is less emphasised in past research, but locking on the move – on water or on land, by horse, cart, or on foot – may have been equally important as locking at home. When travelling and staying at different places for shorter and longer periods of time, lockable containers would be a way of making sure that things were kept in order, were not lost or mixed with other people's things, nor easily available to prying eyes and fingers. One way of regarding the locking of containers while travelling is to fix in place while being in motion. A portable secure unit offered freedom of movement and a way to manage and control things when not in a static and stable environment. While a person's home may, in principle, have been a definable and personalised space for keeping things within a physical boundary, the container may have been part of defining a person's private space when not at home. They may also have been part and parcel of a person's activities and social role, as they are predominant in well-furnished burials of people commemorated with pronounced social status and gender (Table 8.5 and Table 8.6, and Figure 8.7). The lock and key may thus have been intertwined in both the physical mobility of people and how they marked and situated themselves socially, outside the home as well as within.

In the Roman Period, the small sliding-lid boxes would have been the lockable containers available for taking on travels, and their size was well suited for such a purpose. I have suggested that these items or knowledge of them were brought to Norway and southern Scandinavia through contacts with Germanic areas in Poland and Germany. Movement between these areas depended on water travel, by boat and early ships. Presumably, internal travel was mostly by foot and horse as well as water, and possibly skis in the winter (e.g. the Furnes ski dated *c.* 115–240 AD, Vorren 1995:55). With the potential exception of rowing ships and sleds, none of these travel forms facilitated the use of large containers, which could be why boxes were preferred. The majority of burials with these boxes are gendered female, largely containing items of personal care and sewing. There is one male burial with such a box and a full weapon set, and one burial with a man and woman indicated, also containing weapons (respectively from Dynna and Gullen in Gran, Oppland). The boxes could be items acquired from abroad like other imported goods in this period, or have accompanied the individuals they were interred with from outside Scandinavia. The connection between locking and military activity may be seen in relation to the key finds at Illerup Ådal (Ilkjær 1993a), suggesting that lockable boxes were used by some warriors when on campaigns. Considering the high-standing character of these burials, and of the Roman Period burials in general, warriors with keys and locked boxes may have held prominent positions within the military organisations. Thus, both men and women may have had use of lockable boxes on journeys in this early time, as practical devices and social markers.

In the Migration Period, these tendencies – personal care, textile-working, and military engagement – are largely continued, but now in relation to lockable caskets up to 50 cm in length. This meant that the locked unit required more space when travelling, on the other hand, it could accommodate and secure a larger amount of things (Figure 8.13). A larger container also warranted that things inside were organised correspondingly, for example keeping smaller items in separate containers within, such as the non-lockable boxes from Dyster, Evebø, or Ommundrød. What the caskets held in male graves is less documented (out of seven, one case of arrowheads, knife, and shears), but all were buried with weapons, underlining an upper-strata, probably mobile and military life style. The containers in female burials primarily have textile-working tools, as well as potential amulets and other items. Textile-working tools are commonly related to the in-house sphere (e.g. Kristoffersen 2000), but I envisage that the caskets could also have been used when women travelled – for such items or others. The majority of the female burials have elaborate dress ornaments, such as relief brooches, cruciform brooches, equal-armed brooches, gold and silver rings, gold bracteates, and so on, suggesting that they were women of high status, socially prominent, active, and therefore presumably mobile. The close parallels to the British Isles and northwestern Continental Europe seen in locking mechanisms may also signify that there was long-distance travelling, exchange, and alliance-building taking place, comparable to the previous period.

In the Late Iron Age, particularly from the Late Merovingian Period and the Early Viking Age, the growing numbers of varied mounted locks and the introduction of padlocks (Figure 7.11 and Figure 7.12) coincide with increased frequency and scale of mobility and long-distance contact related to general travelling, trade, craft-working, military/political campaigns, and emigration. Arguably, never before in the Iron Age had so many been so mobile, and locking was by all accounts part of this large-scale activity. Portable mechanisms may have been particularly related to individuals engaged in mobile activities because of the practical nature of the locks: they were not only small, light, and easily movable, but also *re*movable. They could be used for locking caskets and chests, packs, things fastened by chains, and the like, and could be easily disengaged and interchanged depending on various needs. Indeed, two padlocks in this material have remains of leather on them, indicating that they had been inside a pouch of some kind in their respective burials (C22444h and T1192). This may have been a common way of keeping padlocks when they were not in use, also demonstrating their portable character. Additionally, when away on long journeys, caskets and chests could be damaged. In such cases, a mounted lock would be difficult to remove and attach to a new container, unless there was a skilled craftsperson that could perform such a repair. A padlock and the clasp hasp that secured the lid (cf. Figure 6.85) could be detached and fastened to a new casket, or the damaged casket would be easier to repair without having to deal with an inset mounted lock.

While mounted locks were most likely used on caskets and chests on journeys (e.g. the chest from Hedeby harbour), the possibility to freely detach and repurpose a padlock is a likely explanation for why such locks were increasingly used at this time. This is supported by the presence of padlocks at trading sites and central places such as Åker and Helgö in the Merovingian Period, and Bjørkum, Kaupang, Birka, Ribe, and Hedeby in the Viking Age. As mentioned, several of these also have evidence of padlock production (7.3.4). Padlocks and their keys are exclusively found in male-determined graves in Norway (Table 8.7), in contrast to for example Birka (Arbman 1940, 1943; Tomtlund 1989; Ulfhielm 1989). The male burials generally contain weapons, tools for metal-working and carpentry, as well as trading implements such as balance scales and weights. Scales and weights also occur in two female-gendered graves and a double burial (8.1.3, note 2), but not in combination with padlocks and padlock keys. Tools for metal-working and carpentry are also a feature of the Late Iron Age and of mobility. The burials with such items do not contain padlocks (with one exception, C27454), but mounted casket/chest locks of A/AA and B/BB types (Table 8.11 and Table 8.12). This could point to mounted locks being related to craft-workers, for both men and women (e.g. textile-working), used to keep, order, and mark the possession of tools and materials in their activities at home and away.

In contrast, padlocks, particularly C1 (box-shaped) padlocks and their corresponding 3A keys may have had a connection to the military sphere, due to their occurrence in weapon graves and predominance at the Birka Garrison. Here, the keys have been argued to have been worn on display by an elite group of warriors, representing identity and belonging to the group, and communicating position and status (Hedenstierna-Jonson 2015; Westerholm 2001). Padlocks are rarely presented as communicative on such a symbolic level, perhaps because they are considered as the practical part of the lock-and-key unit. However, when considering the various forms and decorative features on the lock cases – such as copper-alloyed surfaces, stripes, patterns (e.g. B2 and C1 in 6.3) – it is necessary to acknowledge that the locks through their security and form (i.e. dual dimensions), may have signalled who operated them and controlled what they locked. Being able to differentiate between individualised padlocks could have been a way to achieve order in containers and belongings, for example in a garrison, a camp, or on board a ship.

The use of lockable chests on ships in the Viking Age has only received brief mention (e.g. Kalmring 2010b:283, with references). Having perused non-academic sources such as websites for groups involved in ship reconstructions, there seems to be a general preconception that sea chests were a common part of ship furnishings, used by the crew to sit on and row and to secure their possessions. However, the material evidence for ship chests and their use is very sparse. Most documented ship finds were not fitted for travel, they had either been transformed for burial, such as Gokstad, Oseberg, and Salme in Estonia (Konsa et al. 2009; Mägi 2021; Peets et al. 2011; Peets et al. 2013), or they had been intentionally sunk, such as the ships in the Roskilde Fjord (Olsen and Crumlin-Pedersen 1969).

The Oseberg chests were probably not ship chests, one indication being their length and generally less robust constructions (see below). Thus, the only find I know of that may support the use of sea chests is the chest from Hedeby harbour, possibly deriving from the warship Hedeby 1, as discussed by Sven Kalmring (2010b:282–283). The Hedeby chest is among the shortest documented: 52 cm long, 23 cm wide, and 27 cm in height (Kalmring 2010b:282). Two rows of these chests would have fit a narrow longship such as Hedeby 1, leaving a central isle open for movement about the ship. Following Kalmring, the chest's lid was made from a hollowed-out trunk, which would make it strong enough to sit on, and its broadened base would provide stability on a moving deck. In contrast, the large Oseberg chests were longer, taller, and wider, and may have been less stable in construction. The smaller Oseberg chest is comparable to the Hedeby chest, but lacks the strong lid and would probably not withstand the weight of a person. By comparing the physical possibilities and limitations of these containers, I generally support Kalmring's interpretation of the Hedeby chest as a sea chest. However, to what extent they were used instead of thwarts for rowing, is debatable. The chests may have been placed by each rower's seat, which would provide an explanation for how the number of people and equipment necessary for long sea voyages were organised. Furthermore, the chests may have been brought on land and served a range of purposes depending on the destination and the purpose of the journey. Still, it is currently challenging to estimate how common the use of ship chests were, when this practice started, and how long it lasted.

If the Hedeby chest belonged to the ship wreck, it places this particular locking practice and ordering in the late 10th century. If lockable chests were common outfits from the emergence of longships around the late Merovingian Period to early Viking Age, it would entail that locking devices participated in the maritime activity and organisation from the beginning. As a side note, this would have had a significant impact on both the scale of production and the scale of use of locks and keys in this period. It could also link locksmithing to places of naval power and trade (e.g. Zachrisson 2021), although this is a topic for another time. It is difficult to suggest how many chests may have been made, but if only some of the ships had sea chests it would still provide a very different picture than that portrayed by the archaeological record. The preserved chests may be a shadow of the original number in circulation, similar to the ship finds. This acknowledgement should have an impact on how the manufacture, application, and distribution of locks and keys are perceived. Firstly, it would warrant a moderation of the female/domestic impression given by the burial evidence; if sea chests were part of a ship's furnishings, this could explain why containers are less documented in male/weapon burials. Secondly, the scope of locksmithing as a craft and the related container production may have been a significant industry in the Late Iron Age. And thirdly, it provides a more nuanced impression of distribution in the period, making the widespread presence of locking devices in the Middle Ages more of a gradual continuation than a marked jump.

This digression aside, based on the containers from the Roman Period to the Viking Age and their contexts it can be stated that the purpose of achieving and maintaining order may have been an ongoing theme in their use and development. The same may be said for the locking of buildings, but in a somewhat different way: instead of enabling people to bring things with them and retain a degree of security, door locks may have primarily enabled things to stay put and spaces to remain undisturbed while people were away.

9.2.2 Buildings

Ten potential door keys and known remains of doors or door locks outside Norway suggest that built spaces may have been locked as early as the Migration Period, but more convincingly from the Late Merovingian and Viking Periods. However, it is difficult to discern to what extent buildings were locked and, indeed, what kind of buildings.

Door keys may be under-represented due to burial customs and sparse artefactual evidence at settlement sites, but their limited numbers may also result from limited locking of buildings in general. The only potential door key from a settlement is from Modvo, which has an earlier date than the others, and could have been a large container key. Otherwise, the Norwegian door keys are all pull keys (1A, 1B and 1C) and derive primarily from a handful of burials in rural districts (Table 8.8). In contrast, finds from other areas are from urban settlement contexts (e.g. Hedeby, York), and seem mainly to have been turning mechanisms (2C keys, B4 and B5 locks). Following medieval examples (Berg 1989:109), doors could also have been locked with larger padlocks; C3 is a candidate for this. This type's 3C push keys have a strong presence at the early urban sites, but are hardly represented in the Norwegian material. Keeping in mind the poor preservation conditions for iron at Kaupang, this possible correlation in technological and contextual difference could point to a divide between urban life and rural life. In turn, it could also indicate a tentative divide between locking of occasional residences and specialised buildings in non-urban areas and locking of semi-permanent and permanent residences in urban areas.

The following is a relatively generalised view of Iron Age architecture and settlement organisation, but is intended to set some rough parameters for locking different buildings in different contexts (starting from Eriksen 2019; Gjerpe 2017; Herschend 2009; Olsen 2015). Longhouses commonly had more than one door and were occupied by a relatively high number of people, where most of the everyday activities took place in and around the house. Arguably, to regulate the comings and goings of inhabitants by locking and unlocking doors would require a degree of effort and delegation. It could be that such a strategy was not considered 'worth doing'. In contrast, smaller or more specialised buildings (e.g. storages, workshops, outfield houses, thing houses) may have had mainly one door and periodical activity by a select number of people, which would be practically easier to manage. Similarly, access to cultic buildings may have been restricted, potentially by locking (cf. the Viking Age 1B.3 key from Høyheim, 8.1.4). I theorise that specialised buildings may have preceded residential buildings in being locked. The main reason is because it would presumably be advantageous to lock spaces not permanently occupied and correspondingly disadvantageous to lock those that were.

From a security viewpoint, locking offers the possibility to leave while retaining a form of safety, trusting the lock to regulate unwarranted access. The suggested door locks did not make the door physically more protective, but mainly regulated access and allowed the door to be barred without anyone remaining on the inside (cf. medieval examples in Berg 1989:108). A lock enabled freedom of movement, albeit within the bounds of managing the lock and key. In a residential house, at least at farms, one could presume that someone was always present, e.g. taking care of animals and crops, members of the family that could not travel, or other reasons. Thus, locking such a house may have been largely unnecessary (see also Nordström 2016:68 about locked storages in *Eyrbyggja saga*). The situation may have been another for houses not permanently occupied or supervised, like those in outfield areas and at particular places, like at things, markets, and towns. Houses at such places may, as mentioned, have been more feasible to lock in practical terms. Such buildings would have belonged to people of different family units, kin groups, or other affiliations, and they would have been placed close together, potentially raising the need and desire to regulate access. Furthermore, activities may have prevented inhabitants from supervising the buildings, in which cases a lock may have been implemented to act in their place.

As for inner doors or storage compartments, I have not encountered convincing evidence to suggest that such features were locked, although the possibility should not be rejected outright. At present, I presume that they could have been barred, but not locked. Select Swedish settlement finds deserve mention here, specifically from Vallhagar on Gotland as recently presented by Nordström (2016). Her article constitutes one of the few spatial analyses to date of locks and keys in settlement context. Vallhagar is a Late Roman and Migration Period farm village settlement excavated in the 1940s, where four of the twenty-four documented buildings produced finds of keys and lock fragments. Finds from three of the four houses point to locked caskets rather than doors or chests, in my opinion;

there were two 1A.2 keys and what was probably an A2 lock cover, characteristic to Gotland (Nordström 2016:59–60, with references, cf. 7.3.2). However, in the fourth building was found a 55 cm long curved iron rod, situated in the doorway between the residential and stable section of the house (Building 11, Nordström 2016:60–61, with references). According to Nordström, Bertil Almgren consulted on the find for the original publication (Stenberger and Klindt-Jensen 1955a, b), and he believed that it may have been used for unlocking a sliding-bar lock. If this classification is correct, it would be completely unique in Scandinavia. The keys I know of that might correspond in form and size are from Hallstatt, La Tène, and Gallo-Roman sites in Central Europe (e.g. Guillaumet and Laude 2009, no. 193; Jacobi 1974; Vogt 1931, Taf. 12). However, the possible key is not depicted in the article nor in the find publication, which makes it challenging to investigate this matter further.

If residential houses were not locked in the Iron Age, only certain buildings in certain contexts were fitted with a lock, buildings that served specific purposes, went unsupervised for a length of time, or were particularly restricted. This entails that locks and keys did not directly regulate the security of people and their built spaces to any particular extent in the Iron Age, but mainly the security of things. One possible exception is if the locks (and doors, Eriksen 2019:26) from the early urban sites secured houses for permanent or semi-permanent residents. This difference could well be dependent on context and rural versus urban living, marking a divide between social organisations characterised by larger social units living under one roof in scattered settlements versus smaller units living separately in dense settlements. Thus, such a divide could also have encompassed high social transparency and overview, predictability and effortless trust versus lowered transparency, challenges with trusting and judging risks, and a resultingly increased need/desire to make the complexities of everyday life less demanding. In essence, locks may have been applied on buildings to act in peoples' place when the social circumstances kept them or people they depended on from being present and maintaining control. From this argument, residential houses or other buildings may have been locked at large farms and central places, but that remains uncertain at present. Thus, managing the access and security of space through locks and keys may have arrived late in the Iron Age and been less widespread than securing containers, which appears to have been the main practice. In turn, as securing things was the predominant purpose of locking in the Iron Age, this warrants an exploration of locking as delimitation of property.

9.3 Locking property: ownership, wealth, and social position

Locks being able to 'do' security and order rests on people having the right to implement them for these purposes. As pointed out by Gustafsson (2005:22), 'the action of sealing a space from others is dependent on a common social code that dictates that some people have the right to restrict others' access to certain objects and spaces'. Following my conceptual framework and definitions in 3.3., this right centres on control, on people establishing relationships to things, taking things into possession in socially acceptable ways, and manifesting and upholding their ownership rights. Thus, the next step in understanding locking as a social phenomenon is to address in more detail how locks and keys could regulate property during the Iron Age, and how controlling rights to possessions may have tied into wealth and social differentiation

9.3.1 Ownership and possession

There seems to be a broad consensus that locking was closely connected to rights of use and control, i.e. ownership and possession in the Iron Age. However, whether there were variations (temporal, contextual, technological, or otherwise) in how locking managed property rights has not been explored. To the extent that ownership has been discussed, differences in locking mechanisms have to a limited degree been part of such discussions and past ownership concepts have rarely been approached with critical nuance. For instance, locking devices have been presented as manifestations of 'private' ownership (e.g. Roesdahl 1993:217), but it is not always clear whether this concerns all types of locks and keys, or whether private is meant as personal or 'not communal' (e.g. SE *'icke gemensam'*, Andrén and Nilsson 1976:399). Interpretatively, there are tendencies towards a division between locks and keys as representing individual rights over personal things versus delegated rights and responsibilities over things that belong to another or a group. The latter form has traditionally been envisioned for women/housewives, implicitly suggesting the former for men – outlining a gendered owner/administrator separation which appears to be based on understandings of social roles rather than locking mechanisms. My perspective is that relationships to property may have taken several forms and been held by individuals as well as groups and communities in the Iron Age. In the following, I will attempt to discern the different ways in which ownership and possession may have been defined and managed by locking, while acknowledging the challenges inherent in such an endeavour.

Property and ownership have been described as ‘slippery’ concepts (Gosden 2015:215; Klevnäs and Hedenstierna Jonson 2015:viii), and they are equally slippery to grasp from archaeological evidence, locks and keys being no exception. Accessing such past mental concepts is challenging, which may explain why textual sources have been given such explanatory significance. In Chapter 3, I attempted to define ownership, possession, and property in a way that could encompass Iron Age conditions, and I will implement these definitions in the following exploration. I do not aim to arrive at any clear or generally applicable view of how rights to property were legally or otherwise defined during the period, I will rather attempt to technologically and materially address the matter from lock and key finds. Studying locking devices and practices may provide an avenue into concepts of property because they divulge aspects of how people related themselves to possessions and spaces in relatively concrete terms, by protecting and restricting access. In turn, they can highlight how people possessed, what they associated and identified themselves with, took into possession and claimed rights to, invested resources and emotions in, and exercised control over (following Hodder 2012). Thus, this allows me to disentangle some of the human-thing relationships that undoubtedly existed in the Iron Age.

I have highlighted through this study that certain locking mechanisms were designated for and facilitated certain forms of locking. Having established that there were differing physical parameters for what particular locks could ‘do’, it has become clear that the locks and lockable objects had different preconditions for working as boundaries and managers of access and rights. Thus, practical function was intrinsic to social function, making it necessary to address whether there were differences between forms of locking and forms of control and ownership.

Locking containers: rights of the individual?

The most archaeologically tangible application of locks and keys is in the form of containers and their use in burials. Some earlier works have addressed what locks and keys were used for, such as container form and contents (e.g. Hedenstierna-Jonson 2015; Müller 1911; Thorberg 1973), but not from Norwegian contexts, nor diachronically, and the finds have largely not been brought into a debate of ownership (Hedenstierna-Jonson 2015 being one exception). Thus, there is an unexploited potential for considering period-related, situational, or other social differences in how locking worked in defining and practicing ownership.

Now, my general impression of lockable containers is that they seem to have been largely related to single persons, possibly suggesting that containers manifested individual ownership and/or possession of things. One initial argument for such a view derives from the high degree of individuality in their form, which is a continuous feature across types and materials, from the Roman Period to the Viking Age. This individuality is an indication that locking was, in principle, intended to be performed on an individual level. If the purpose of locking was to prohibit access, restriction in form and number was vital (cf. 3.5). Duplicate keys did rarely occur, and the technological development of mechanisms demonstrate how locksmiths were striving for uniqueness and variation. As argued above, individuality in mechanisms could have enabled a physical demonstration of a connection between what was locked and a keyholder, which in essence can translate to manifesting a person's right of control. However, whether such a right can be equated with personal ownership or designated responsibility, and whether it was permanent or temporary is less determinable by locks and keys alone.

Another potential argument for containers being individual is the generally limited volume capacity of containers up to and into the Viking Age (Figure 8.13). The boxes from the Roman Period and the box from Oseberg were small (*c.* 0.5–2 litres) and could not accommodate much in terms of content. This is also the case for their unlocked counterparts. While it is possible that boxes could secure things on behalf of others, their size and portable nature indicate primarily personal use as well as manifesting personal access and control. This may also have been the case for caskets, which were in use from the Migration Period onwards and had a capacity of *c.* 10–45 litres. The chests, particularly the domestic ones, had significantly larger storage capacities (Oseberg *c.* 30–90 litres, Kaupang *c.* 150–300 litres), which could indicate that they contained things on behalf of several people, like a household. However, it is challenging to determine whether the expanded capacity of containers represents an increasingly collectivised keeping of things or whether certain people were able to lock more of their things away. Both scenarios are plausible and may have depended on social roles and social contexts. Indeed, a central feature of containers is that their contents could be changed at will, meaning that the boundary that they represented may have changed situationally. Thus, while volume provides a certain measurable parameter for the limitations and possibilities of locking and marking ownership, it would most likely provide more insight when considered contextually.

Burials make up the primary context for considering the use of containers. To interpret the practice of depositing keys and lockable containers with contents in burials is challenging. One factor is the variable preservation and documentation, another is to discern the significances of selection and depositions. Despite the relative continuity of the practice, it may have depended on a range of motivations and meanings, as in the case of burial goods in general (e.g. Moen 2019:57–59, 121, with references). As stated in 4.3, burials are ritually standardised and idealised contexts, but also have variable traits that may demonstrate levels of personalisation. Locks and keys in burials is a rare custom in the Norwegian Iron Age, which can indicate that it represented a personalised rather than standardised ritual action. Thus, their deposition can be seen as expressions of ownership, in the sense of individual relationships with locking devices and locked things.

One indication in support of this is their placement. When observable, the items are usually placed intentionally close to the person, both in the Norwegian archaeological record and elsewhere in Scandinavia (e.g. Müller 1911:5; Roesdahl 1977:117, Fig. 181: Thorberg 1973:43–47). It is a general trend that keys are associated with the body, often located by the waist area, and containers are observed by the feet, next to the body, and occasionally on top of the deceased (Figure 9.1). This is further supported by burials that contain more than one individual. For instance, both individuals had keys in the double male and female-gendered burials at Bygland in Setesdal (C58880) and at Fyling in Gaular (B11470), and the two near identical chests and bucket-shaped caskets in Oseberg (C55000) could indicate that they were designated to (or belonging to) each of the interred women.

Figure 9.1. Artistic reconstruction of a female burial with key and casket from Svingeseter in Stryn, Sogn og Fjordane, Western Norway (B6483g). The key was found in the waist-area and the remains of the casket were found in the foot-end, here suggested to have been placed across the legs. (Illustration: Mirosław Kuźma, copywright Leszek Gardeła, from Gardeła and Toplak 2020).

Another indication is that the locks and keys were demonstrably fitted to each other. Due to the fragmented state of many of the finds, it is not always possible to determine whether they corresponded, but starting from the burials with both locks and keys, the general tendency is that when locks and keys were interred together, the majority actually fit together (Table 9.1). Connecting key with locked thing was obviously important, particularly in the Roman Period and the Viking Age. This suggests that there often was a tangible connection between the persons interred and the locked things that accompanied them, which was manifested in the keys – a connection that can be understood as right of control, i.e. ownership.

Period	**Burials total**	**Lock and key burials (% of total)**	**Corresponding lock and key (% of lock and key burials**
RP	22	9 (1) *(41–45.5 %)*	7 (3) *(70–100 %)*
MP	57	2 (1) *(3.5–5.3 %)*	2 (1) *(66.7–100 %)*
EIA	6	0	0
MVP	43	6 (1) *(14–16.3 %)*	4 (2) *(57.1–85.7 %)*
VA	285	64 (8) *(22.5–25.3 %)*	42 (22) *(58.3–88.9 %)*
Tr. f./LIA	32	2 (2) *(6.25–12.5 %)*	1 (3) *(25–100 %)*
IA	2	0	0
Total	447	60 (31) *(13.4–20.3 %)*	56 (31) *(61.5–95.6 %)*

Table 9.1. Overview of corresponding keys and locks in burials. The overview shows per period how many burials out of the burial total have locks and keys present and an estimation of how many of those have corresponding locks and keys. Additional potential cases of lock and key burials and of correspondence are placed in parentheses.

Moving from the container mechanisms to their contents, the character of the container assemblages can also be seen as manifesting personal ownership, at least within the burial ritual. Enclosing things in a container regulated by key and lock is a physical and social manifestation of access and rights, which provides a basis for considering these things as particularly personal and owned/controlled. The contents are characterised by everyday tools and items of bodily care, specialised tools, and things potentially linked to protection/belief, which has parallels to contexts outside Norway as well. In the Juellinge burials, the boxes contained what Müller (1911) called toiletries: comb, shears, needle, knife, as well as spindles; in the burials at Buckland in Dover a horse tooth and a fossilised crustacean were documented, possibly amulets (Grave 55 and 60 in Evison 1987:231, 233); and in the containers at Birka there were items such as smoothing stone, bone combs, a piece of amber, beads, glass beakers, strike-a-lights, slag, animal bones, weights, ceramic vessels (Thorberg 1973:43–77). A large number of the containers at Birka had no discernible contents (30 out of 40), and Thorberg (1973:46) saw this as an indication that they had held items of perishable materials, probably clothes/textiles and food. There are at least two burial containers in this material that appear to be empty (C58880 and T19530), and the occasionally low number of documented artefacts in caskets and chests could point to clothes, food, and other perishable items being part of a container assemblage – similar to Oseberg. Furthermore, there are some cases of containers having been left open in the grave, judging by the position of the locks (e.g. Müller 1911:6; Roesdahl 1977:124). Müller (1911:6) saw this as reflecting a belief that the dead should have access to the contents and their use in the afterlife, which is a potential interpretation (cf. Härke 2014:45, with references). Whatever its significance, I suggest that keys and lockable containers with contents in burials may signify that right of control over specific things and the agency of locking mechanisms extended beyond death and into the grave.

Thus, studying Norwegian burial contexts shows that locks and keys generally corresponded functionally and that things for care, wear, production, and consumption were included within the regulated bounds of lockable containers. As part of burial rituals, the deposited devices and container contents can be seen as part of social display, adherence to standardised burial customs, and expressions of religious beliefs. However, burials are also commemorations of recently deceased persons, in which case the same items may have emphasised close relationships between individuals and certain things, chosen for burial because of these relationships. There is a strong possibility that the contents and the lock and key were owned by the deceased in life, although they may also have been selected, displayed, and gifted for the burial – entirely or in part (e.g. Kristoffersen and Østigård 2006; Price 2008; Williams 2010). In the former case, their placement in the burial can be seen as an emphasis of ownership rights, meaning the existing and continued possessive control the deceased had over things. In the latter case, one could consider the burial as a transference of ownership from giver to receiver, where the items were (in principle) taken permanently out of circulation and fixed to a particular person and place, as part of the transactions and re-negotiations that took place at funerals (e.g. Østigård and Goldhahn 2006). A burial assemblage and the contents of a container may therefore be a mixture of things owned and given, but nonetheless ‘possessed’ in the grave, representing both existing and created relationships between people and things.

To differentiate between such relationships is not necessarily possible archaeologically, but one potential avenue is to consider things that from a modern perspective may seem mundane and 'low' in value. In simple terms, the majority of the things documented in containers in this study fall into this category. My perspective is that locking was an action considered worth doing for things of value. This entails that things of seeming 'low' value were not so, but were acquired, possessed, used, and locked for their abilities and significances. A comb, for instance, is an item for everyday care, but may also be imbued with human connections, feelings, memories, and investments (e.g. Ashby 2011) The same can be said for a garment, a knife, or tools in general. The presence of such objects in lockable containers could indicate that they were possessions that had belonged to the deceased, in contrast to 'exclusive' and 'exotic' items that could represent funeral gifts deposited as manifestations of social alliances (following Østigård and Goldhahn 2006:33). So while items in containers may have been part of idealised constructions and social negotiations of the living, the general character of the material and how a lockable container would enclose and conceal its contents leads me to argue that their significance for and belonging to the deceased was most likely central to the selection of those items for burial.

It may be necessary to make a differentiation between burials with locked contents and those with only keys or keys that do not fit the lock, as the latter do not visibly relate to what is secured. As illustrated in Table 8.4, there are no burials with keys only from the Early Roman Period, while they are continuous yet fluctuating in number for the rest of the Iron Age. Burials with only keys were the least common in the Late Roman Period (27.3 %), most common in the Migration Period (87.8 %), less in the Merovingian Period (67.4 %) and into the Viking Age (47.77 %).

There is no clear explanation for why keys were deposited alone in burials from the Late Roman Period. Certain interpretations centre on the deceased having held delegated responsibility for locked property rather than individual ownership rights themselves – largely in case of female burials with keys, interpreted as married women governing household possessions (e.g. Andrén and Nilsson 1976; Hildebrand 1883; Eriksen 2015; Kristoffersen 2000; Magnus 2014; Solberg 2003). One argument has been that the wife secured the storage and chests of the household, exemplified by the presence of key chains. In this study, I have not been able to identify any other form of storage facilities than small boxes and caskets before the Late Merovingian Period, and burials with more than one key or key chains are in minority of the total number of lock and key burials (Table 9.2). In total, 70 (10) burials out of the 447 graves (*c.* 16–18 %) contain more than one key, including keys with matching container locks. If multiple keys signified delegated responsibility over property, this was rarely marked in burial customs.

Although multiple keys was most common in female burials, it was not an exclusively female feature, occurring in male burials and those of double or indeterminate gender from the Migration Period onwards. Two keys was most common, while three or four were rare. Thus, the burial material does to a limited degree support interpretations of delegated responsibility for locked property, which with the absent evidence of locked storages and buildings in the period can be taken as an indication that locking was largely about personal control and management of things in the Iron Age. In other words, it seems to have been more about 'doing' ownership and executing rights over possessions in daily life than having responsibility over things belonging to others or a collective. One caveat here is that burials are inherently personalised and idealised in nature, meaning that locking in real life may have been more varied in organisation that the material suggests.

Period	**Female**	**Male**	**Double, Ind.**	**1< key burials**	**Burial total**
RP	0 (2)			0 (2)	22
MP	9	1 (1)	1	11 (1)	57
EIA				0	6
MVP	8	3	1	12	43
VA	23 (1)	6 (3)	12 (1)	41 (5)	285
Tr.f./LIA	2	1 (2)	2	5 (2)	32
IA			1	1	2
Total	*42 (3)*	*11 (6)*	*16 (1)*	*70 (10)*	*447*

Table 9.2. Burials with more than one key or key chains by period and gender (burials with uncertain gender-determination included). The numbers include burials with locks or indications of containers.

Period	**Female**			**Male**			**Double/Ind.**			**Total**
No. of keys	*Two*	*Three*	*Four*	*Two*	*Three*	*Four*	*Two*	*Three*	*Four*	
RP	0 (2)									0 (2) of 22
MP	5	2	2	1 (1)				1		11 (1) of 57
EIA										0 of 6
MVP	7	1		2	1		1			12 of 43
VA	17 (1)	4	2	3 (2)	3 (1)		11 (1)	1		41 (5) of 285
Tr.f./LIA	2			1 (2)			1		1	5 (2) of 32
IA							1			1 of 2
Total	31 (3)	7	4	7 (5)	4 (1)		14 (1)	2	1	70 (10) of 477

Table 9.3. Burials with two, three, or four keys by period and gender (burials with uncertain gender-determination included).

An alternative interpretation of keys without locks in burials could be that keys referenced their use and part in a larger whole despite not being physically associated with it, as a form of *pars pro toto* representation. The potential door keys could be examples of this, as the door lock and building naturally would not be placed in the grave. Likewise, it is possible that a container key could be deposited without the container it belonged to, perhaps because this was no longer present (e.g. lost, broken, stolen, or reused). Understanding locked things in burials as owned may run counter to perspectives where grave goods are seen as metaphors for interpersonal relationships (e.g. Brück 2004) or idealisations of the dead (see 4.3.1), but my view is not intended to conflict with these, as burial assemblages may constitute a range of different and potentially accumulated motivations, meanings, and beliefs. A relational significance is not excluded in regarding locking devices as individual, as they may be multivocal and polysemic symbols (as argued for keys by Eriksen 2015:237, 2019).

An associated aspect is that (container) locks and keys could point to individual rights of use, but in the form of possession (e.g. borrowing, renting) rather than formal ownership. The main evidence of such an organisation is from the Garrison at Birka, recently discussed by Hedenstierna-Jonson (2015). A group of professional warriors were stationed at Birka in the 10th century, serving within a garrison area which included a hall building, smithy, and remains of a battle that was probably the cause of the garrison's abandonment towards the end of the century (Hedenstierna-Jonson 2015:73–75). Over 40 padlocks and about 16 keys were found at the garrison, several of them inside the hall. The keys were mainly of 3A.2 type, with two 2B.2 keys, and the padlocks that were determinable to type belonged to 3A (Tomtlund's type II, Gustafsson 2003:5–7; Ulfhielm's type I and III A:2, Westerholm 2001). The walls of the hall were slightly curved and were suitable for storage (and seating) as the roof was lower along the sides (Hedenstierna-Jonson 2015:74–75). This is also where many of the locks, keys, and remains of containers were identified, in the same area as bundled weapons with textile impressions (Holmqvist Olausson and Kitzler Åhfeldt 2002). The garrison may have housed around 40 warriors, which corresponds to the amount of locks as well as comb-cases found, and there was most likely one container (casket or chest) for each member. Based on studies of the keys and locks by Marita Westerholm (2001) and Ny Björn Gustafsson (2003), respectively, Hedenstierna-Jonson (2015:79) regards the mechanisms as signs that the warriors marked ownership of and responsibility for the weapons and equipment, signalling their right of use and that transgression would be met with consequences. The standardised character of the weaponry indicates that the warriors were provided with most of their weapons, suggesting that they were lent to each on a personal basis (Hedenstierna-Jonson 2015:78–79, 2006:54ff). The containers and locking devices may be interpreted similarly, as part of the equipment that a warrior was provided with. Indeed, this seems to be the case, but there are also indications that these were highly personal.

Many of the artefacts at Birka had motifs of falcons, such as sword sheaths, brooches, and bronze-handled 3A keys. They are suggested to have been produced in the garrison smithy for the stationed warriors, signalling their rank, status, and belonging in this warrior community (Hedenstierna-Jonson 2015:81–82; Westerholm 2001). One such key and C1 padlock are documented in the Birka burials (Bj 562), with an additional nine decorated keys identified on Gotland – all male graves – in addition to three keys from a settlement at Hitis by Kyrksundet, Finland (Westerholm 2001:10–11). I have located one parallel find from the Norwegian area, at Kjølstad Vestre in Hedmark, a male grave that contained a 3A.2 key and corresponding C1.2 lock (C37550). The decoration on the handle is almost entirely worn away, but the key type, material, and shape strongly suggests a link to the Birka Garrison. The finds may indicate that the buried individuals had served as warriors at Birka, and that they kept the keys and locks after leaving the garrison, which may then have been markers of their membership in this warrior community outside Birka as well, and served as their individual security mechanisms until their deaths. The lock and key were part of the internal organisation of the garrison (cf. 9.2), and arguably contributed to situating the individuals in wider society. This entails that even though weapons and equipment may have been lent during their service, the locks and keys were gifted or commissioned for the warrior to own. Furthermore, the lock and key manifested an individual and role-related relationship to things temporarily in possession, and the lock and key were themselves things that a person possessed individually and permanently – which in these examples were expressed both in life and in death.

So while the locking of containers could have been performed on behalf of a collective or someone else, there is currently little archaeological evidence of such a practice. And while the things that were secured could have been considered as owned or temporarily possessed, the material suggests that locks and keys were inherently individual and governed an individual's relationship to things in terms of both rights and responsibilities.

Locking buildings

It is more challenging to consider the locking of doors as manifestations of personal ownership. As outlined in 3.2, organising the locking of a building that was secured by one key would involve a certain degree of management. Thus, with the exception of persons living alone, securing buildings for storage, living, or other purposes should likely be regarded as communal. The security of the building and its value(s) would be of interest to all who benefitted from its safe-keeping. A locked storage building could have contained values such as food stuffs, raw materials, and equipment that were connected to and resulted from the labours of the community. The locking could then rather point to the right and responsibility of protecting and administering jointly owned property rather than personal ownership. The security of a building could have been temporary and ambulatory, and be transferred within the group of those that shared in the joint ownership.

As discussed in 9.2.2, buildings were not observably locked prior to the Merovingian Period and it is uncertain if residential houses were locked at all in the Iron Age, perhaps with the exception of urban housing in the Viking Age. It is suggested that lockable buildings outside urban contexts may have been buildings of specialised uses and temporary occupation and activity. Hence, these forms of locking take on the character of the collective rather than the individual, manifesting communal rights of use and delegations of responsibility. It is possible that the advent of large chests (i.e. domestic chests mainly kept indoors) and lockable buildings in the Late Iron Age/Viking Age led to keys being delegated to particular individuals as part of permanent or ambulatory responsibilities. It may not have been so clear cut, however, as singular or specific individual owners may have been responsible for the locking, for example the husband and wife of a farm and its resources, community leaders in terms of outfield hunting or iron-extraction sites, or a cult building. In urban contexts, the locking of residential or other forms of buildings could take on a similar non-personal character.

I have not come across discussions of whether or not houses in urban settlements were owned privately, rented, or possibly communally owned, so at present it is difficult to discuss locking and property ownership for these contexts. What I can suggest is that all of these three forms of possession – and potentially others – may have been practiced. It has been suggested that urban settlements were under rule of the elite (e.g. Skre 2007c for Kaupang). Hence, house plots and/or buildings may have been delegated by such authorities, either by purchase or lease. The inhabitants of Kaupang are believed to have mainly consisted of Scandinavians (Skre 2011:417). However, there are indications of people from outside areas, e.g. the building called the *Frisian Merchant's House.* This house may have been occupied by people from Frisia/Frankia, as visitors and traders or potentially as permanent residents (Gaut 2015:144-145; Skre 2011:431-434). Other groups present may have been from western Slavonic areas and other parts of Scandinavia. Comparatively, markets and towns in Frankia such as Saint Denis attracted Anglo-Saxons, Frisians, merchants from Northern Italy, Spain, and the Provence, and possibly also Scandinavians (Gaut 2015:148–149, with references). Frankish written records outline that urban properties were owned and rented out to tenants by ecclesiastic and aristocratic institutions (Gaut 2015:149–151). Bjarne Gaut (2015:152–153) has argued that Scandinavian Viking Age towns emulated the Continental urban trade system and had an increasing monastic and royal presence, so it could be that a similar organisation was present in some form in Scandinavian towns. Within such contexts, locking may have been indicative of ownership of buildings and plots, but maybe also of possession as temporary right of use by agreement.

Thus, at present, there is still much that is unknown about how and to what extent people in the Iron Age governed locked spaces. My general impression is that regulation of spaces, particularly in rural areas, may have been controlled by other means than locking in this period, presumably by social values and rules of conduct that maintained the integrity and peace of delimited spaces. The prominent feature in this period is the locking of things, and in the following I suggest that the patterns presented outline an increasingly complex and entangled relationship between people and things.

Expanding circles of ownership: an entanglement perspective

Following Hodder (2012:23–27), ownership is fundamental and intrinsic to human relationships with things. Therefore, the commencement of locking property in the Roman Period need not necessarily have represented 'increased' ownership, but rather a new form of 'doing' in terms of demarcating and managing human-thing relationships. Through Hodder's (2012) perspective of entanglement, locks and keys constitute another adaption, addition, and amendment to the entrapment of humans and things. There is a directionality to human-thing entanglements, a form of inflation, in that keeping stability and making choices leads to an increasing amount of things. Locks and keys are things for keeping other things, and once in place, interdependence is created and increased.

If one envisages a small circle for the boundary that the lock governs, and the key provides access to, the tendency throughout the Norwegian Iron Age is that this circle was expanding in stages. In the Roman Period, the circle was small. What was locked were the closest of personal effects; combs, small utensils, and potential amulets, maybe also dress ornaments and gold items – and they were kept in small boxes. In the Migration period, the circle was somewhat wider, encompassing tools, probably amulets, and small vessels. Dress ornaments and clothes may have been included. These were kept in caskets that could be carried by hand. In the Merovingian Period, the circle was expanded to contain a wider variety of tools and implements for a range of activities, particularly craft-working and agriculture. The containers were largely the same size as the previous period, but may have reached chest size around the 8th century, being heavier and more resource-demanding to make and to move. In the Viking Age, the circle was expanded again and significantly. What was now fitted into the circle were items related to metal-working, carpentry, food preparation and consumption, furniture, and weapons. The containers developed into large chests that probably required more than one person to carry. A high number of things related to living and working were put into the circle of locked things. This included people as well. Caskets and chests were used as coffins for the dead, both inhumed and cremated remains. Humans were also locked as things, with shackles and fetters in the Late Viking Age. In the Late Iron Age or at least towards the end of the Viking Age, there are indications that buildings were locked – homes, workshops, outfield houses, and perhaps places of cult and ritual. Entire buildings became lockable containers, in a way, and much of what a person could possess was possible to lock – if that possibility was socially available. The unfree were presumably omitted from these rights (e.g. Engelstad 1944; Gjessing 1862 in 2.3.2), while the social access to locking may also have been a similarly widening circle.

A pronounced feature in the long-term pattern is that locking followed the general and large-scale social developments in Scandinavia in the Iron Age, meaning that locks and keys were part of and participants in the transformational processes from tribe to state (as outlined by for example Hedeager 1992). In what ways they may have done so is explored in the next section, but before this, I will briefly address their connection to social status. The technological and social development of locking was intrinsically tied to dealing with the possession and accumulation of things, and this leads to the topic of wealth and how rights of ownership related to differences between people and their places in society.

9.3.2 Wealth, social differentiation, and social status

That locks and keys worked to achieve security and order and to communicate rights of use in everyday life is the basis for how they worked in differentiating between people socially.

In simple terms, they distinguished internally between people who had different knowledges, rights, and things to lock, and separated them from people who did not have such knowledges, rights, and things. This is not a new perspective, rather, it is a general basis for regarding locking devices as mediators of ownership, in the present as well as the past. However, through the Norwegian material I can outline with some specificity how it manifested itself through the Iron Age.

The Roman Period burials are generally of elite character with gold artefacts, imports, and weapons, buried in cairns and mounds. There is a more varied picture in the later periods, indicating that locks and keys were coming into the hands of more people and of differing social position. Keeping in mind potential biases inherent in the burial record (cf. 4.3.1), this suggests a top-down introduction of locking, being an upper-class feature in the beginning, later to be more socially distributed. However, judging from the relatively consistent occurrence of locks and keys in monumental and furnished burials (8.1.3), the connection to what can be broadly termed upper strata is prominent. This is also indicated geographically, as locks and keys tend to concentrate in areas generally characterised by a high number of burials, large settlements and settlement continuity, some with indications of central functions, areas with rich agricultural landscapes, access to outfield resources, and along travel routes by land and water. As such, locking was seemingly a feature of people that led lives of relative surplus.

While I do not presume a one-to-one relation in the make-up of burials and social status, profession, gender, or wealth, I will in general terms suggest that the variations in burial constructions and contents indicate an increasingly varied range of people that were related to locking during the first millennium. This, in turn, could be related to more socially demarcated roles identities in the period (see below). To the extent one can outline rough characterisations of individual interred with locks and keys, they may have included social leaders or members of governing families, craft-workers and specialists, traders, hunters, warriors, healers, cultic persons, farmers, dependants, etc. They could represent married and unmarried individuals; widows and widowers; children and adolescents; parents and grandparents; free, unfree, and persons that had achieved freedom; people from the local community or from elsewhere and far afield. Discussing a common and shared significance of locking and of the key and lock to these various individuals and groups is likely not possible nor fruitful. What can be suggested is that marking ownership and control over things and drawing boundaries against others were central to the practice of locking and the significance of the artefacts. In this relation, locking could be a way of signalling social position and exacting control, rights, and responsibilities – in general and reflexively in terms of what the devices were securing. The rights and obligations could have been negotiated and defined from the particular social role and status of the individual or the social group (see also Nordström 2016 for similar views).

Thus, the main impression from the burials, and from the settlements and depositions as well, is that locks and keys were related to individuals and social groups with resources and a certain level of affluence and social prominence. Here, wealth in the broadest sense can be seen as a common denominator for locking in the Iron Age, being a determining factor in both the social access to locking devices and the purposes they were used for. However, it could also be argued that wealth, like locking, was another factor originating from larger developments and not a basis in itself.

For instance, it has been argued that the increase in locks and keys in the Viking Age should be seen in relation to an increase in portable wealth that was accompanied by an intensified desire to display ownership of such wealth (Edgren 1997:43; Reinsnos 2013:17; Roesdahl 1993:217). This perspective touches upon some important points, but requires nuance. It is challenging to sustain that there was less portable wealth in the Roman or Migration Periods compared to the Viking Age, and that locking devices therefore were fewer in number. Nevertheless, portable wealth was arguably more socially distributed in the Viking Age compared to previous periods, due to the rise of market economy, silver, and large-scale trading, raiding, craft specialisation, and urbanisation (e.g. Brink and Price 2008; Roesdahl 2001; Solberg 2003). This situation is more consistent with the lock and key material, which indicates a correlation between locking and resourceful people of varying positions.

One important factor here could be processes of hierarchisation and social differentiation in the Early Iron Age and into the Late Iron Age (e.g. Gjerpe 2017; Hedeager 1992; Herschend 2009; Kristoffersen 2000; Solberg 2003), where navigating and defining increasingly complex social landscapes entailed drawing social and physical boundaries between people. Here, locking may have been a strategy for distinguishing between individuals, roles, groups, identities, rights, and responsibilities, for providing order in the everyday and in the community in general. Ownership rights would have been one of the central parameters that defined a person and a group, and defining one's possession of the material world may have become intrinsic to defining oneself and one's position in society. A related aspect that I will not venture into here is the matter of locking and gender, and particularly female ownership and inheritance rights in the Iron Age. From the few gendered differences observed in this material, there are grounds for questioning the implicit division between respectively individual and delegated ownership rights of men and women. This may be a fruitful venue forwards in exploring the social significance of locking.

My main point is that needs and desires to express and manage ownership may have become more important over time, due to increasing social differentiation and complexity rather than rising wealth in society in itself (see also Roesdahl 1993). This topic will be further explored and contextualised in the following, in which I view the implementation and development of locking in a large-scale perspective of social order and organisation and changes therein during the first millennium AD.

9.4 Social order and organisation: mobility, sedentism, and hierarchisation

Roughly speaking, the first millennium AD may be seen as a dynamic period of transformations from the pastoral-nomadic Bronze Age to the state-structured Middle Ages. From the Roman Period to the end of the Viking Age, the Scandinavian societies underwent processes of hierarchisation, power consolidations, collapses, and changes in social organisation (e.g. Gjerpe 2017; Grønnesby 2019; Hedeager 1992, 2011; Herschend 2009; Myhre and Øye 2002; Ystgaard 2014). Prominent restructuring factors were changes in land exploitation and subsistence; in internal and super-regional politics and ideology; migrations and climatic events; in long-distance contacts, craft production, and trade. It is within this long-term period of slow and rapid societal transformations that locking arrived in Scandinavia and was gradually embedded into everyday life; nevertheless, how and to what degree locking and its technological developments were linked to the organisational changes of the period has largely gone unaddressed. As pointed out by Lars-Erik Tomtlund (1972:1, my translation): ‘Exactly why the keys/locks of metal come into use is a question that seems uninteresting to most Western-European archaeologists. One merely ascertains that keys and locks suddenly exist, and it appears so obvious that one does not need to explain why’.

So far in this chapter, I have argued that locking was intimately connected to ordering things and people by drawing boundaries, and that the needs and desires to do so related to achieving predictability and safety, as well as difference and exclusion in terms of rights and social order. It is through these interpretive steps that I can now approach Tomtlund’s question and address the potential reasons why locking was introduced and gained foothold in Scandinavia. Seeing locks and keys as having purposes and effects in achieving order is the basis for the discussion. In the following I will demonstrate that the order that locking enabled may be the reason why it was closely connected to social order and organisation in the Iron Age, following the fluctuations and transformations that characterises the period. In the discussion, I will be relating my observations of Norwegian locking mechanisms to certain elements of larger social developments within and between the Early and the Late Iron Age, particularly settlement organisation, social stratification, and aspects of mobility and sedentism.

A question that arose during this study was whether locking as management of non-landed and mainly personal ownership was connected to changes in landed ownership. My conclusion is that locking may not have been directly related to landownership in itself, but rather to processes of hierarchisation and social reorganisation that occurred alongside growing sedentism and changes in resource exploitation. As will be argued, these factors may have been enabling as well as limiting for the introduction and development of locking devices. I have formulated this perspective by drawing on two studies in particular, the recent doctoral works by Lars Erik Gjerpe (2017) and Geir Grønnesby (2019). Both Gjerpe and Grønnesby readdress societal structure in the Iron Age from a direction of settlement archaeology and landed ownership, in Eastern and Central Norway respectively. In the technological comparison presented in 7.3, I discussed geographical and temporal developments in locks and keys within Norway in a long-term perspective, as well as linking the locks and keys to other areas. Some of these developments will be drawn upon, and much like that discussion, the following is a picture painted with broad brush strokes and with suggestions rather than firm answers.

9.4.1 Locking and society in the Early Iron Age

In keeping with my 'back to start' perspective (2.4), I will begin by considering the period before locking arrived. There are no finds of locks and keys from the Pre-Roman Iron Age in the Norwegian material, nor elsewhere in Scandinavia, which suggests that people in this period did not make or use them. Considering that the raw materials and the basic metallurgic competence to make locking devices were present, one can ask whether people were simply unaware of the technology or if not using it was a conscious choice. Following Gjerpe (2017:189–190), this period in Norway up until *c.* 200 AD was characterised by an egalitarian social structure, collective property rights, and low degrees of accumulation and concentration of wealth and power. This accords with Grønnesby's (2019) perspective, who considers this society as pastoral-nomadic in character, mobile and migratory, with low settlement density and limited stratification. I theorise that the relevance of locking mechanisms in such a society would be low. From a security perspective, living in small and mobile communities would arguably produce high social transparency and therefore limited need and desire for locking; from an ownership perspective, marking and bounding property as part of social differentiation was likely to be less important in a society with low stratification.

South Norway is believed to have been an integrated part of the ideological cultural sphere in Northern Europe in the Pre-Roman Iron Age, with close contacts with the Continent and with Celtic areas (Gustafson 2016:123, with references). Certain parts of the Celtic areas demonstrably had locking devices in this period (e.g. Jacobi 1974; Jacobi 1930; Vogt 1931, see 7.3). It is difficult to say whether or not people in Norway/Scandinavia knew of this technology, but if they did, its absence may be considered a conscious decision, meaning that it was not implemented because it had no relevance within the social structure, which differed from the Celtic. These societies were hierarchical and governed by elites, and had specialised metalcraft, early urbanisation, and coinage (e.g. Solberg 2003:33–34). Therefore, if locking was undesirable and unnecessary in mobile and egalitarian societies with presumed weak property divisions and high social transparency, locking may be connected to the opposite – to centralisation of settlement, people, resources, and power in an hierarchically structured society, with related factors such as lower overview and predictability, and growing needs to order and control people, things, and spaces. This is supported by a largely coinciding pattern between lock and key development and processes of social complexity in Norway and Northern Europe in the first millennium AD.

The Roman Period is marked by an emerging upper class that resided in fertile and strategic areas and buried their dead in embellished, monumental graves. Their power was based on a redistribution economy, social relations and alliances formed through exchange of portable goods, and participation in extensive contact networks to the south and east (e.g. Gustafson 2016:123–129, with references). The first lock and key finds in Norway are dated around B2, *c.* 70–150/160 AD (Table 7.1 in 7.1.1). Their occurrence at prominent sites in Eastern Norway in the Early Roman Period and at centres around the coast in the Late Roman Period (Figure 7.2) suggests a link to increased social stratification and changes in settlement organisation. Both Grønnesby (2019:164, 181) and Gjerpe (2017:191–194, with references) observe that settlements became more structured from *c.* 200 AD onwards, with signs of increased sedentism, power concentration, and social stratigraphy centred on a warrior-based elite. Grønnesby (2019:245, 296) suggests that people became more dependent on agrarian production at this time, but retained a degree of mobility. A similar tendency is emphasised by Ingrid Ystgaard (2014:280, with references), who regards the same factors as central to the martial organisation of society in Central Norway and in Scandinavia generally. Grønnesby connects his observations to similar processes in Germanic societies on the Continent. From a range of literary sources he argues that these societies became more sedentary and agrarian between the 1st and the 5th century AD, and were consolidated into 'confederations' led by warband 'kings', with a mobile social structure based on movable property (Grønnesby 2019:107, with references). This structure transformed from around 400 AD onwards, a time characterised by the fall of the Roman Empire, the intrusion of the Huns into Europe, large-scale migrations, and emerging kingdoms (e.g. Heather 2006; Hedeager 2007, 2011)

The Roman Period locking mechanisms in Norway were primarily lock type A1 and key type 1A, arriving in the 1st to 2nd century and disappearing around 400 AD (Table 7.7 and Table 7.8 in 7.2.1). Their temporal duration coincides with that documented by Kokowski (1997) in Germania, particularly the Przeworsk cultural area, but also the Wielbark (7.3.1). The archaeology of the Przeworsk culture has many parallels to Roman Period Scandinavia, most notably in the burial record. There are signs of social stratification in the Early Roman Period (notably B2) as well as increased metal working specialisation, and the cultural area moved and expanded in the Late Roman Period before settlements largely disappeared around 400–450 AD and Slavs settled the area in the 6th century (Andrzejowski 2010). The Przeworsk locks and keys were particularly related to female graves with spindle whorls, spindle hooks, needles, and knives (Andrzejowski 2010:70), comparable to Norway and Denmark. The Wielbark culture was characterised by mobility and territorial expansion in the Early Roman Period, at the time situated on the Baltic coast of Poland, followed by a stabilising phase with monumental burials in the Late Roman Period, during which phase the culture moved southeast towards the Black Sea (Kokowski 2010). Following Kokowski's (1997) concentrations of Wielbark A1 locks, these largely occur in the settlement zones of the Early Roman Period (Map 7 in Kokowski 2010). The communities in Eastern Norway and Denmark may have participated in the same network as the early Wielbark communities at this early stage, which may have been replaced by the Przeworsk in the Late Roman Period as these groups expanded up to the Baltic coast and Northern Germany (see Andrzejowski 2010, Figs. 9 and 19). Grønnesby saw the coinciding traits between Trøndelag and Germania as indications that they were closely connected and part of a common organisation. The locks and keys offer some support for his interpretations. Generally speaking, the temporal and material parallels could suggest that the societies in Scandinavia and Germania were structured in similar ways and underwent similar and interconnected developments. The emergence and use of lockable boxes in both areas may be related to largely mobile communities with emerging elites connected in extensive cultural and economic networks, which were disrupted by a combination of socio-political factors towards the end of the period. Thus, there are notable points that link early locking to hierarchisation, dynamic settlement structures, and complex economies of long-distance trade, craft specialisation, animal husbandry, and agriculture. This is a feature that seems continuous in the Iron Age, with temporal, spatial, and cultural variations.

In the Migration Period, the lock technology lost its connection to the previous Germanic areas and manifested itself as Scandinavian in character, with regional differences (7.3.2). Type A2 was seemingly restricted to Gotland and Eastern Sweden, and A6 to the Norwegian area. Concentrations were centred in southwestern Norway with probable specialised production. A6 locks and copper alloy 1A and 1B pull keys display distinctive characteristics in construction and style that have few direct parallels in Scandinavia and elsewhere. Such distinctiveness has been noted for other craft products such as pottery (e.g. Engevik jr 2008; Fredriksen et al. 2014; Kristoffersen and Magnus 2010), metalwork (e.g. Kristoffersen 2000; Kristoffersen and Pedersen 2020; Røstad 2016), and textile production (e.g. Bender Jørgensen 1992). Similar to these crafts, lock and key manufacture underwent significant transformations in the late 6th century. The lock type was continued, as were the key types, but their material and decorative expressions were not. As discussed in 7.3.2, the social structure that supported the craftworking centres, meaning the elite hierarchies, transformed in relation to events and processes preceding and following 536 AD.

Locks and keys remained related to upper-strata burials in central areas from the Roman to the Migration Period, but the concentrations shifted from Eastern Norway to Southwestern Norway from one period to another, which correlates with an established tendency. As discussed by Solberg (2003:159–162, with references), Southwestern Norway demonstrated particular settlement concentrations and population density, organised and specialised craft, long-distance alliances and trade, as well as socio-political rivalry and unrest. The predominance of locks and keys in this region could be associated with hierarchisation as well as increasing social competition. This could also explain the differences in lock mechanisms (e.g. A2 in Gotland) and decoration, as they could have been produced by local elites in an effort to socially differentiate. However, it has been proposed that variability in the quality and elaboration of jewellery in D2b – in which a majority of the finds appear, particularly in female graves – indicates a period of stability and decreased distance between social strata (Kristoffersen and Røstad 2020:26-27; Røstad 2019:317, 339). In a scenario of more widely and equally distributed wealth, locking devices could relate to a definition of status and roles rather than competition.

Simultaneously, and regardless of concentrations, the lock and key types in this period (as in the Roman Period) could be suggestive of these communities being labile and mobile, consistent with Grønnesby's pastoral-nomadic perspective. A central point within this perspective is considering settlement as movement in the landscape, in the sense that location and continuity of settlement need not have been connected to a fixed territory and that mobility was always possible within sedentism (Grønnesby 2019:241, 269). People in the Early Iron Age may have been moving to a large extent, in times of peace as well as aggression. Certain groups and individuals, such as cultivators, craft-workers, children, the elderly, may have been more bound to the farming settlement than others, for example community leaders, herders, hunters, traders, and warriors (building on Grønnesby 2019:245, see also Ystgaard 2014:291-292, and Solberg 2003:160, with references). One could also envisage that households did not reside permanently in one house, but moved between houses or between settlements depending on the seasons or other factors. In such a dynamic social organisation, small and portable containers would be more practical compared to larger containers. They could be easily moved – in person, by pack animal, cart, or boat. This may indicate that the way locking was performed was defined within a social structure where being mobile was an integral part of life. This may also be true for the Late Iron Age as containers remained a central form of locking. However, these were much more diverse, a development that most likely took place in relation to the social transformations of that period.

9.4.2 Locking and society in the Late Iron Age

Comparable to the start of the Migration Period, the Late Iron Age began with a decline in locks and keys, but the disruption was not as great as in the 5th century, demonstrating continuity in lock and key types despite a reduction in numbers (7.2.1). The reason is probably that the production and use of locks and keys had been firmly established in society and was resistant against complete collapse. Presumably, when the elites that had governed the technology lost their foothold in the mid-6th century, it survived and was brought into the restructuring processes that followed – in which hierarchisation, sedentism, and mobility again were central factors.

Gjerpe (2017:183) describes the Iron Age social structure as a 'heterarchical', which did not exclude hierarchy, but where decision-making and privilege was more distributed, power relations were reversible, and accumulation of power was restricted. In his view (2017:199–203, with references), the aftermath of the 6th century crises led to a collapse in the Early Iron Age social structure, which entailed less protection against power concentration. In the centuries that followed, old and new elites engaged in competition and an emerging leading strata may have exploited the power vacuum by taking possession of abandoned land and moving the centre of cult into the halls, thus ending political symmetry and removing power from the collective. Territorial control, power concentration, and increasing dependency to land are similarly argued to form the basis for the Late Iron Age military structure and social hierarchy (Ystgaard 2014:295). Grønnesby (2019:274–277) considers the Germanic kingdoms on the Continent as the principal inspiration for the later Scandinavian development, in which power was territorialised and formalised at the expense of the plunder economy, relying more on extracting surplus from agriculture (Grønnesby 2017:274–277). The relevant points to remember are the emergence of 'unrestricted' social stratification and the strategy of controlling land and resources, both human and material.

As for the locks and keys, the most notable changes are seen in the Late Merovingian and Early Viking periods. At this time, the shape and sizes of caskets appear in the most diverse forms (rectangular, bucket-shaped, square, oval), lockable chests appear, and the diversity in forms are accompanied by an unprecedented variation in mechanisms – some of which have technological links to Western Europe and the British Isles. The chests are particularly noteworthy, and may demonstrate a social organisation that differed from the Early Iron Age in being both less and more mobile as well as more socially diverse.

On the one hand, the increased control and exploitation of land was linked to increased sedentism. Following Grønnesby (2019:182), farms were to a greater extent situated in the same place from *c.* 600 AD onwards, and the character of the settlement organisation changed from labile to stable. There are signs of intensified agricultural activity, particularly animal husbandry, signifying a more dependent relationship on land and surplus production (Grønnesby 2019:279, Gjerpe 2017:201–202). A more permanent settlement structure may have entailed that households were more fixed to one farm and residence, making large chests more feasible as storage and security devices. Domestic chests (and potentially door locks) could have developed alongside increased settlement continuity, and around prominent individuals and families that had extensive control over land and people – the Oseberg burial being one example.

On the other hand, sea chests could point to increased mobility where ships offered new possibilities to store and transport possessions and goods in large containers. This development may be connected to the start of Viking campaigns, long-distance and large-scale trade, and the Scandinavian diaspora, which involved people of the elite, warriors, traders, craft-people, and whole families (Roesdahl 2001). Thus, the seemingly rapid relevance of locking and for applying locks to more things could relate to longer settlement continuity as well as extensive mobility. At the same time, the continued use and development of caskets show that the portable container remained a common form of securing at home and away.

In addition to increased sedentism and travel, centralisation and urbanisation were also relevant transformative factors. Locks and keys display a marked presence and diversity at central and densely populated places with high turnover of people; Åker, Helgö, and Ribe in the Merovingian Period, in addition to Birka, Hedeby, York, Kaupang, and to some extent Bjørkum in the Viking Age. Finds are also documented at the court site at Tjøtta and at the old market site at Veøy (T2171, T2218a). These were variably places of production, exchange, assembly, and general interaction, indicating that manifesting, displaying, and maintaining order may have been particularly significant at these places, both physically and socially.

The general picture is that people were to a greater degree living in socially heterogeneous communities in the Late Iron Age. A central tendency is that increased sedentism and resource exploitation were related to increased population density and diversity, accumulation of power and resources, social stratification and sharper demarcations of roles, which in turn probably lead to competition, lower social transparency, and requirements to create and maintain order.

Looking at the first millennium AD as a whole, the corresponding temporality of the technological and contextual developments of locks and keys and changes in social organisation indicate that the need for locking was interwoven with fundamental social structures. Locking as a social phenomenon can be seen as a characteristic of increasingly sedentary and hierarchical societies. Personal ownership may have played a significant part in these processes, considering the lasting importance of gift giving, alliances, and raiding as socio-economic and political strategies. Taking into possession and transferring possessions was at the core of the social structure, and locks and keys as managers of possessions may have been increasingly important in creating and maintaining order in rights of control. In turn, this suggests that non-landed property was central to personal self-definition, social position, belonging, and participation in society. This view corresponds with transgression against property being prevented and penalised by exclusion from these very aspects.

A related point here is that the emergence and changes in locking technology should not be seen as direct reflections of Scandinavians passively receiving new knowledge and things from the outside; rather, the circumstances within Scandinavia and dynamics between other societies and cultures may have been just as decisive for how and when the changes took place. I have attempted to show that the social preconditions for what locks and keys could do for people differed through the first millennium AD, meaning that the desires and requirements peoples had for locking changed through the period. This also shows how closely related locking was to social organisation and structure, as well as concepts of ownership and order on a deeper level. Furthermore, by looking at an 'everyday' technology like locks and keys, it has been illustrated that people's daily lives were not detached from the large-scale social developments in the Iron Age, but were deeply intertwined, enabled, and delimited by them. Arguably, this is not because large-scale happenings have a 'trickle-down effect' on everyday life, but because the everyday is where history is mainly produced, as a result of thoughts, feelings, actions, and routine practices taking place within wider and changing social structures.

Summing up this section, as managers and mediators between people, things, and spaces locks and keys have been presented as integral to growing social complexity and ordered life in the Iron Age. I do not consider this a reflection of social organisation and social order, rather as how it was 'done' in terms of possibilities and limitations. The mechanisms were entangled with people that had the social and technological ability to differentiate themselves and their property by the use of technical devices, and to uphold this practice through socially entrenched values, norms, and consequences. Thus, locks and keys were integrated into how living was practiced and organised, first by the few and later by the many, as this way of 'doing' life was enabled and made relevant by changing practices and social structures. This, in turn, leads me to regard locking as a concrete form of entanglement – one that may not have been foreseen from when the first locking mechanisms were introduced, but in variably unforeseen ways became integrated into the doings of people, staying relevant, effective, and in this way gaining permanence.

9.5 Permanence of locks and keys: entangled in locking?

Following the expanding boundaries of things locked in the Iron Age (8.4, 9.3), the analyses of locking mechanisms in Norway outline an increasing spiral of locking in the Iron Age. In general terms, the lockable units move from small to large; the contents from limited to extensive; the mechanisms from simple to diverse and complex in technology and function; and the practitioners from the few to the many, locking moving down and sideways in social strata, taking place in a widening range of places and social contexts, gradually permeating society. As discussed in this chapter, these interlocked developments connect from the details in artefact and human agencies to the social structures in which they act; they are contingent upon the tasks that locks and keys performed, the motivations behind their use, and the effects that locking had on individuals and society. On a basic level, the observed developments result from people and locking mechanisms becoming entangled and entrapped with one another. This centres on the 'stickiness' of locking technology and the efficiency of locks and keys in working as mechanisms of security.

A concept of 'sticky' technology is constructive for understanding permanence, relevance, as well as the agency of things and their mediating abilities (3.1). Based on the discussions in this chapter, where locking devices are viewed as useful in establishing order and simplifying the complexities of life, I consider their stickiness to reside in their efficiency, in the direct nature of their interaction with people and things, acting as an extension of persons onto others and their surroundings. Basically, the developmental steps presented in the introduction of this chapter can be seen as improvement and as reflective of the success of locking mechanisms in performing their tasks. Their permanence may be taken as signs that they were relevant, useful, and desirable, and their changes as efforts at producing and maintaining their relevance and effects. Through stages of craft-related innovation, knowledge acquisition, and social circumstances that changed the social context and relevance for security, locks were added to more and more things. The main reason, I argue, is because locking *worked* in regulating human behaviour, and they worked because their physical 'object design' manipulated people's actions and ways of thinking. They changed, enabled, and directed people in ways of acting, interacting, and ordering their societies.

From this point of view, the introduction and implementation of locking in the Iron Age societies can be compared to evolutionary progress, where things were getting bigger, better, more versatile, and more numerous – because people wished them to. However, locking may also have been accompanied by and partly resulted from unforeseen effects. Considering that locking had negative as well as positive sides, the development may alternatively be seen as a form of entrapment characterised by interdependency.

9.5.1 Progress versus entrapment

Following Hodder (2014:30), human-thing interdependency is characterised by humans striving to deal with the instability of things, which demands organisation and mobilisation of resources (3.1). The production and maintenance of things result in a gradual and relentless inflation, and an increasing cycle of management, things, and entanglements.

In the Roman Period, the A1 mechanism and iron 1A keys were simple enough that knowledge of making them could be relatively easily transferred to persons with basic metal-working knowledge, and repairs do not appear to have been technically difficult. The same may be valid for the copper alloy versions (e.g. Juellinge), which were probably made by forging cast metal strips (cf. Kristoffersen 2000:113). In the Migration Period, the technological complexity level was raised with the introduction of A6 locks and keys with multiple tips and decoration. Craftworkers with lock-making as a side speciality were probably appearing from the late 5th century AD (as suggested in 7.3.2), although amendments and repairs could be within the bounds of general smithing knowledge, at least for the locks and iron keys. This gradually changed when pull-and-slide mechanisms appeared towards the late 6th and early 7th century, padlocks arrived around the same time or a little later, and casting keys in copper alloy began in the 8th century (e.g. Ribe). The level of complexity in the making of these products indicate that locksmithing was growing into a speciality, meaning that learning the craft was a specific field in metalworking and that master locksmiths may have begun to appear in the Merovingian Period. Consequently, specialists would be required for acquisitions, repairs, or replacement keys. In the Viking Age, the range in types and complexity indicate that the craft itself was highly diversified, suggesting that smiths with basic knowledge of various metal-crafting could make and mend certain lock types, while others were the specialty of high-level locksmiths, perhaps located at specific production sites or central locations. These may have been less accessible, which could lead to locksmithing being a sought-after skill. While some locksmiths may have worked from where they lived, others may have travelled to settlements and markets, and some may have been under commission by the elite (e.g. Sømmevågen).

From an entanglement perspective, this development of craft specialisation can be seen as a form of entrapment. The growing practice of locking and increasing technological complexity, as well as the expanded capability of locking more and more things, may have been intertwined with conditions and rules that required and expected people to lock – and to punish transgressions in a variety of ways. In turn, this may have led to a heightened necessity of acquiring, using, maintaining, and repairing locks and keys. In a way, people became entrapped by their security devices.

For instance, when people started to lock, was stopping the practice an alternative? There is an indication that locking may have paused at the end of the Roman Period, as the A1 mechanisms disappeared in Norway and in the Germanic areas (cf. Kokowski 1997) around 400 AD. However, the appearance of the A6 mechanisms in the mid–5th century shows that it was desirable (or necessary) to find new ways of securing containers. If people had 'lost' the possibility to lock, they seem to have retrieved it relatively quickly. Thus, locking seems to have worked in this early phase, the effects of locking devices were considered desirable. This means that the introduction of locking devices may have marked the start of a trajectory that one could not or did not want to turn back from.

The outgoing spiral envisioned above illustrates how locks and keys enabled human action as well as restricted and directed it onto paths that were not expected, and may have been desirable as well as undesirable. The locks and keys were dependent on humans making and caring for them, and humans in turn became dependent on them to work, physically and socially. Arguably, this interdependency may have caught people in what Hodder (2016:4–5) calls a 'double-bind', involving the upkeep of mechanisms, production and innovation, controlling and managing them in everyday life, and creating and upholding social structure that sustained their effects by renegotiating rules, social norms, and relations.

Thus, the development of locks and keys in the first millennium AD can be seen as an asymmetrical entanglement of the intended and the unforeseen, and locking as a complex phenomenon that existed and transformed between wants and needs, possibilities and limitations. The success of locking in this period seems to have resided in its effectiveness in regulating human behaviour and ordering life, but like innovations that enable people to achieve desired outcomes, its effects were also those of added responsibilities and requirements in the short term, and long-term consequences for social organisation and structure. In a way, choosing to lock involved a trade-off between inconveniences and benefits (e.g. security, order, ownership, social status, trust), where the benefits were considered the greater.

A potential criticism of the entrapment concept is that it could be seen as downplaying human agency, making people of the past appear powerless against the unavoidable inflation of things. From my understanding, the entrapment largely comes about through human agency, through their taking possession of the material world as individuals and collectives. I find the notion of powerlessness somewhat liberating, as it acknowledges the bounds of human agency and that past people had less control and foresight than archaeologists may attribute to them. Furthermore, the concept is useful in understanding the processes of social complexity, which cannot be regarded as directly intentional and foreseen, but rather as products or consequences of cumulative practices and entanglements.

9.5.2 Entrapped in social complexity

Following Hodder (2016:4, 9, cf. 3.1), entanglements between humans and things may involve establishing inter-human relations, ideals and norms, and institutions to regulate such entanglements and conflicts around them. These are foundations in social order and, thus, increasingly entangled relationships with things are linked to increasingly complicated ways of ordering society. It may not be as directional as outlined by Hodder, but within this study, the patterns suggest a relatively growing curve of locking that connects to established complexities in the Iron Age (9.4). Here, locking may be considered as a way for people to deal with social complexity. It may also be seen as one of the ways in which social complexity is produced, as taking things into possession and drawing physical and social boundaries around them creates separations and distinctions that warrant complicated structures to negotiate and uphold. And, in keeping with the above, the more diverse the boundaries are, the more complex the structures need to be.

In light of this, one of the most central and probably unforeseen consequences of the human-lock entanglement is that locking would expand into so many spheres of life during the Iron Age, which has continued into modern times. In a way, how people got 'stuck' in locking can also be an indication of the entrapping character of social complexity as a whole, where efforts are increasingly spent at dealing with it and, thus, resulting in its continued production and expansion. The social structures of the first millennium AD have resonated far into medieval and modern times, and the permanence of locking devices from the Roman Period onwards is one example of this continuous yet changing process of social organisation and social order.

10. A thousand years of locking: concluding remarks and future perspectives

My point of departure has been to approach locking as social practice and locking devices as material agents engaged in human-thing entanglements. From this perspective I have addressed how various locks and keys worked, what they were (and were not) used for, and in what ways the tasks they performed related to social conditions and changes therein. In order to address and understand social functions pertaining to security, ownership and order in a long-time perspective, I have approached locks and keys from Iron Age Norway. More than 800 finds from *c*. 500 archaeological contexts have been analysed, with two main objectives. The first was to establish an empirical and terminological framework for the study of prehistoric locking mechanisms; the second, to explore the parameters for and purposes and effects of the introduction and implementation of locking in Norway. The main parameters are argued to have been internal and external transformations pertaining to social stratification and reorganisation in tandem with socio-technological, craft-related developments. To achieve order, physically and socially, is argued to have been the main purpose of the use of locks and keys. Their efficacy and success in achieving order is considered as the main factor in how locking devices participated in social life and society in the Iron Age.

Analytically, this work has been comprised of three stages of investigation. The first stage included creating an overview of lockable objects and constructing classifications of locks and keys based on their technical function, which enabled links to be made between the construction and function of lockable objects and the mechanisms that secured them. The second stage concerned the application of this framework in temporal and geographical analyses. These resulted in technologically based typologies and a long-term view of how locking was introduced and distributed in Norway through the Iron Age, which in turn enabled a comparative study of how the Norwegian mechanisms related to Scandinavian and European finds in terms of production and technological transformations as well as social connections. The third analytical stage constituted contextual analyses of locks and keys in burials, settlements, and depositions over time and space, which made similarities and differences in the application of locking devices discernible. These informed a broadened understanding of locking practices, in which locking was situated within a widening circle of social groups, situations, and landscapes, and demonstrated to have become an increasingly diversified and embedded practice during the course of the Iron Age.

Based on the empirical results and the applied conceptual framework, I have discussed how locking was introduced, upheld, and transformed through interdependent relationships between locking devices and human actions and mentalities, particularly in terms of the creation and management of social boundaries, rights of control, practical and social order, and social complexity. Locks and keys as material agents are considered as products of human actions and mentalities as well as participants in their production, having been reflexively conditioned by and conditioning for social circumstances in the Iron Age. The results and interpretations presented have painted a dynamic picture of development and continuity, in which the needs and desires for locking in various forms are seen as intimately linked to social organisation and social transformation within Norway and wider Northern Europe. In essence, changes in locking constituted changes in living in the course of the first millennium AD.

The main contributions of this work may be summarised into four points. Firstly, it presents a basis for the identification, classification, and dating of locking mechanisms in Norway and wider Scandinavia, which includes a terminological and functional framework that may enable future studies and discussions on locking technology and its social impact. Secondly, the technological developments of locks and keys are provided with chronological and geographical delimitations and are linked to those of other artefact categories, which may allow for locks and keys to be included comparatively in technological and socio-organisational studies. For instance, the fact that locksmithing from the Roman Period beginnings involved techniques for working iron and copper alloys as well as wood and bone/antler, may offer inspiration to current debates concerning the respective specialisations of metalworkers and craft organisation (e.g. Ashby and Sindbæk 2020; Croix et al. 2019; Lønborg 1998:81–84; Pedersen 2015:55, with references). Future investigations into the decorations on locks and keys, as well as lockable objects, may provide further insights into socio-cultural and craft-related conditions. Thirdly, the different ways in which locks and keys were part of indigenous and external craft-working, artefact and knowledge exchange through contact networks and activities, and social transformations on the meso to macro scale, can be utilised in discussions that include and extend beyond locking technology.

Lastly, this work contributes to current perspectives on locks and keys in terms of social differentiation and social organisation. A long line of contributions on technical function and manufacture is drawn into the emerging discussions on security, ownership, social roles and groupings, and early law. How technological and utilitarian aspects of locks and keys are used for considering immaterial factors such as socio-judicial values and norms, as well as rights and social positions will hopefully propel these debates further. The matter of gender, and particularly that of female ownership rights in the Iron Age, is an aspect that could benefit from closer investigation; similarly, the military and travel perspectives are considered fruitful avenues forward.

In conclusion, locks and keys were mechanisms of security in the Iron Age, devices that were conditioned by their own protective abilities and by social structures. Security and boundaries were arguably inherent parts of daily life, of ordering space, and of achieving stability and foreseeability of the near future, which grew increasingly complex from the time locking devices arrived in Norway. From the beginning of the first millennium locking devices contributed to and became entangled in the ordering of life and society, and thus gained relevance, significance, and permanence. Herein, social complexity was both countered by as well as aided and sustained by locks and keys, which in the practice of regulating people and things became a social phenomenon inseparable from stratified and formalised societies.

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List of figures

List of tables

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