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WARFARE IN HEIMSKRINGLA: AN ANALYTIC SURVEY OF SOURCE RELIABILITY AND RELEVANCE TO ARCHAEOLOGY

GUERRA NA HEIMSKRINGLA: UMA AVALIAÇÃO ANALÍTICA SOBRE CONFIABILIDADE DAS FONTES E RELEVÂNCIA PARA A ARQUEOLOGIA

Are Skarstein Kolberg[1]

Abstract: This article is a critical analysis of Heimskringla's source reliability, first and foremost from an archeological point of view, but also within the historical field. The analysis is presented as a case study where the relevance and reliability for battlefield archaeology is assessed. Some focus will be put on when different forms of warfare and organization were introduced, examples include *shield walls* and other battle formations, use of horses in battle or the introduction of *Leidangen*.

Key-words: Archaeology; Heimskringla; Viking Age; Medieval warfare.

Resumo: Este artigo é uma análise crítica sobre a confiabilidade da Heimskringla como fonte, em primeiro lugar, do ponto de vista arqueológico, mas também dentro do campo histórico. A análise é apresentada como um estudo de caso em que a relevância e confiabilidade da arqueologia do campo de batalha são avaliadas. Algum foco será incluido quando diferentes formas de guerra e organização forem introduzidas, exemplos incluem *paredes de escudos* e outras formações de batalha, uso de cavalos em batalha ou a introdução de *Leidangen*.

Palavras-chave: Arqueologia; Heimskringla; Era Viking; Guerra medieval.

Introduction

Are the sagas mere fairy tales, or do they give us real insight into the past? Do they to some extent report actual events? Apparently the criticism of saga literature came to a preliminary conclusion with Bagge, 2002; Koht, 1938; Myrvoll, 2014 and Claus Krag, 1995 who dismissed sagas as partly fairy tales. During recent years however, there has been a tendency

[1] Norwegian battlefield archaeologist (MA in Archaeology, University of Oslo, 2011, with a thesis on the Battle of Stiklestad, 1030 A.D.). Currently working on a PhD as an independente researcher. E-mail: arekolberg@gmail.com

for growing acceptance. This article is a critical analysis of Heimskringla's source reliability, first and foremost from an archeological point of view, but also within the historical field. The analysis is presented as a case study where the relevance and reliability for battlefield archaeology is assessed. Some focus will be put on when different forms of warfare and organization were introduced, examples include *shield walls* and other battle formations, use of horses in battle or the introduction of *Leidangen*.

Other factors such as alliances and outside influence will be discussed where relevant, such as when, according to Snorri, Håkon Jarl's soldiers take position on top of the defensive structure Danevirke during the wars with the Holy Roman Empire. The texts are being compared to the archaeological record as well as with different contemporary sources. Physical battle sites are particularly interesting for discussing tactics and warfare. We will discuss Heimskringla's source reliability for determining battlefield locations based on topographical and toponymical information, this through a survey of Kjersti Jacobsen's work on the battles of Re. We will use the revised Storm-edition as a source, but with continued cross reference to the original text. Where English translations are presented, the 2011 translation by Alison Finlay and Anthony Faulkes will be referred. In cases of discrepancies and/or ambiguity, we will refer to the Norse. We will also refer to other historical sources in cases where they can provide further information – either to support or dismiss the claims from Heimskringla. In this manner the article will also serve as a general source critical analysis of texts from an archeological point of view as the analysis has relevance to other sources and themes.

We have several sources for studying tactics and warfare. Findings of weapons in graves and in contexts of battlefield archaeology are tangible sources. To some extent, they reflect the arms regulations from Magnus Lagabøte's land law, which again is believed to have an older legacy, possibly dating back to the ninth century (Binns, 1997, p. 138; L III nr. 1–18). The standardized weapon sets indicate standardized warfare in formation and tactical knowledge (Kolberg, 2019).

Possibly, the oldest battle from which we have archeological findings is Re 1163. This means that we lack archeological knowledge of Viking Era battlefields, and consequently

comparative material based on which we can track changes. Such material may be weapon types and equipment related to warfare. Findings at Re suggest that horses may have been used in battle. It might be the first battle in Norway where horses were used, if the archaeological material is paired with written sources. There are some erroneous sources, a point which is dwelt upon in the chapter discussing Re. Based on Heimskringla and other written sources that date back to roughly the same time, it is indicated that horses were not used in battles in Norway before the beginning of the Middle Ages. We do however lack archeological evidence to support this claim. A Francian source, a chronicle by the bishop Regino of Prüm from the 10th century, suggests that Norwegians mastered battles of infantry versus cavalry, as they, according to the records, caused riders to flee during a raid in 891 (von Prüm, 1939, p. 98–100). Is it possible that Heimskringla is a rather reliable source which, among other things, largely determines the time when cavalry was first used in Norway?

The Re-project is interesting also because tactics is determined by the landscape. One of the factors that distinguishes the development of tactics and warfare in Norway from that of continental Europe, is precisely the landscape. Warfare is always dependent upon local variations in topography as well as climate (Lynch og Cooksey, 2007, p. 25). By looking at the distribution of findings in the physical landscape, we may get hints on tactics and weapon types, but also the battle's development in time and space. This may again be aligned with information on events and topography as well as toponomy in written sources. In this respect Re will constitute a practical framework for the theoretical discussion in this article.

There is a big debate concerning whether saga literature such as Heimskringla are trustworthy sources. Lately there has been a discussion in the daily newspaper Stavanger Aftenblad between Håkan Petersson at AM/UiS (2018 a; 2018 b), Titlestad (2018) and Sigvald Grøsfjeld (2018) concerning the establishment of a new Viking center, the Hafrsfjod-project and consequently also saga texts vs archaeology. Titlestad claims that Petersson has an outdated view on the field as he writes:

> [...] The stories must be based on actual objects and results from archeological excavations rather than anecdotes and mythical sagas. When it comes to the battle of Hafrsfjord, there are no findings to this day that confirms the saga. [Petersson, 2018a]

In other words, the debate is very much alive. But the tendency points towards an increasing level of acceptance for the value as a source. One example is the accounts of the well at Sverresborg as written in King Sverre's saga. According to the saga, a dead Birkebeiner was thrown into the well in 1197 after Sverresborg was conquered and subsequently rocks were thrown into it (Jonsson, 1979, p. 198). These events must be admitted to have been confirmed by recent archeological investigations performed by NIKU at Sverresborg in 2016 (figure 1) where a skeleton was found under a layer of rocks that had been thrown into the well. The determined gender and dating of the osteological material supports the information from the saga (NIKU, 2016; Denham og Westling, 2014).

Figure 1: *Investigations of the well at Sverresborg, June 2016. Foto: Are Skarstein Kolberg*

A Short Research History of Source Criticism

The debate concerning the source value is not new. Earlier researchers such as P.A. Munch and Gustav Storm, who among other things translated Heimskringla, represented a view of the sagas which was moderately critical as they questioned the texts to a larger extent than 18th century antiquarians such as Gerhard Schøning (1910) who readily accepted the information relayed in the old Norse sagas, and who attributed Iron Age gravemounds to mythological kings (Eriksen, 2007, p. 75–84). Munch and Storm considered the scaldic poems to be the most trustworthy texts, even though the view that they had been unchanged due to the strong oral story telling traditions and transmission was beginning to fade (Myrvoll, 2014, p. 384; Helle, 2011, p. 51). Later researchers such as the brothers Lauritz and Curt Weibull and Halvdan Koht (1938) voiced a so-called radical saga critique were the texts were largely rejected as historical sources, a line later continued by Claus Krag (1995). Also, the scaldic poems were questioned as sources, even though they were still generally considered to be the most trustworthy parts of the Norse saga literature. The saga prose itself was criticized as opposed to the scaldic poems and older foreign sources (Bagge, 2002, p. 173, 174; Helle, 2011, p. 52; Myrvoll, 2014, p. 387). Krag believed that the poems may have been unchanged, and that they represented an important oral tradition, but also that they often could be quoted in the wrong context or misunderstood by later authors such as Snorre. Often the authors had added significant parts, or that, according to, Krag *false verses* occurred in the transmission (Krag, 1995, p. 72, 73). Lauritz Weibull writes about the battle between Styrbjørn and Eirik Seiersæle in St. Olav's saga that:

> [...]The oldest saga texts, in which this saga image of the battle between Erik Segersäll and Styrbjörn is conserved, are written around 200 years after the events, and the form in which the accounts then and later appears clearly shows how it to a large extent has been subject to people's fantasy and the saga writer's transforming influence. [Weibull, 2010 [1965], p. 43]

Weilbull also writes that the battle between Olav Tryggvason and the Danish king Svein Tjugeskjegg has similarities with earlier Germanic hero poems and doubts the accounts of Olav's fall at the battle of Svolder, but he is more willing to accept that Svein conquered Norway (Weibull, 1911, p. 124–143). He points out that the long lines may be reliable. In other

words, there are opposing views concerning sagas and scaldic poems. When it comes to Snorre, there is also doubt as to how much he actually wrote himself (Megaard, 2017, p. 17–42). It is considered certain that he based his writing upon older sources such as Fagrskinna and Morknskinna, also from the 13th century, but there are texts dated all the way back to the 12th century. He may have relied on the saga works «Ågrip» and Theodoricus Monachus' «History of the Old Norwegian Kings». With a view to Sverre's saga and the example of the well, there is a point that the same author, abbot Karl Jonsson wrote most of it.

Halvdan Koht interpreted Snorre from a Marxist view of history. This means that Snorre and his contemporaries' class allegiance and view of society from the top down, influenced the texts. That is to say a class struggle and tensions between king and aristocracy (Bagge, 2002, p. 175, 176; Koht, 1938; Myrvoll, 2014, p. 388, 389, 404). This does not mean that Koht, according to Myrvoll, was questioning details, because he used information from the sagas to develop his hypothesis. Some critics meant that Koht rejected, or had a positive view of Snorre, depending upon how well the information suited his own views (Myrvoll, 2014, p. 396). Since the 1960´s the sagas' value as sources has gradually become more recognized, a view advocated by historians such as Sverre Bagge and Jón Viðar Sigurðsson. This view is opposed to that of Lauritz Weibull who meant that only the greater lines could be accepted as true, whereas Bagge in addition is far more positively inclined towards the reliability of the scaldic poems (Bagge, 2002, p. 173, 174; Myrvoll, 2014, p. 387, 399, 403). The historian Kåre Lunden takes on Krag in a book review and calls his critique «iconoclastic revisionism». Lunden claims that Snorre was a much better source critic than Krag (Lunden, 1995, p. 185, 191). Myrvoll on the other hand warns against being too positive and claims that Lunden also writes from a political conviction (Myrvoll, 2014, p. 404).

When A.W. Brøgger examined the burial grounds at Borre in 1915, it was based on the idea that Borre was the burial site for the Ynglingeætt, and that Halvdan Svarte could be buried there, a common view among archeologists of that period. This is part of the same archeological tradition that links the Oseberg-ship with Queen Åsa (Myhre, 2015, p. 19, 22–24). When archeologists and historians have different views of the sagas, this is partly due to differences between the two fields of study, but according to Bagge, archaeology has

contributed to a more positive view of the sagas as reliable sources also in the period after WW2, here exemplified by the excavation of the skeleton in the well at Sverresborg (Helle, 2011, p. 50).

Joseph Harris claims that the sagas were written as historical novels. By this he means that the authors retold events from the distant past, a fact that contemporary readers must have been aware of. According to Harris, Christianity was a necessary condition for a historical view of the past and a new view of the future. But Harris still admits to a core of truth (Harris, 2008, p. 230–235), which partly harmonizes with Bagge's views. The terms author and historian are unsuitable as he probably did not attempt to write a fictional story in a modern sense, nor did he retell history according to the standards of a modern historian (Bagge, 1991, p. 24). Yet it has been claimed that Snorre had a critical eye on his sources, which gives him more reliability than a mere collector of various texts. Bagge is reluctant to call Snorre a historian, and he questions his source criticism, but he still points out that Snorre distinguished between, and evaluated the trustworthiness of the different sources he used (Bagge, 1991, p. 24–26).

On a general note, Bagge is less critical than Harris, and he points to investigations of oral transmissions from the 17th to the 19th century in Norway. According to these studies the original content is to a large extent preserved through a period of 250 years. Bagge claims that the oral traditions on which the scaldic poems is based was taken very seriously, and that it was considered important to preserve the original content. (Bagge, 2002, p. 193–195). In other words, the stories reflect the truth to a degree which increases as the duration between the events and their recording decreases, as in the example with the skeleton in the well at Sverresborg. From this perspective it is likely that the scaldic poems are the most reliable parts of a saga. If you compare Fagrskinna, Morknskinna and Heimskringla, the poems are the shared material, i.e. they do to a very large extent have the same form. A returning problem is that the scaldic poems often are filled with dramatic and mythical effects. The poems from the battle of Hafrsfjord is a good example here. It includes both dramatic weather and berserkers. In relation to the oral tradition that dominates early sagas, Sverre's saga belongs to a later,

written tradition, a point that matters when we discuss trustworthiness, as exemplified by the well at Sverresborg.

Generally, we find descriptions that include specific places and named persons more trustworthy than those who lack such information (Bagge, 2002, p. 194). Maps and prospects is a good analogy. Drawers often got second hand information on topography and vegetation without having visited the places they drew, a situation similar to Snorre's who based his writings on older information. For this reason, prospects include trees that are not present, while the maps show legendary cities (van der Krogt, 2005, p. 572). Maps is a relevant analogy as they like Heimskringla are representations of history in time and space. Snorre's description of wonders in Heimskringla might be compared to sea monsters on old maps. A Scandinavian example includes Olaus Magnus' *Carta Marina* from 1539. Sea monsters and other mythological creatures have been included on behalf of witnesses, often seafarers, or they are based on older myths. In other words, the map does not always reflect the terrain, but the larger lines are often correct. In the following survey of the sagas of kings in Heimskringla, the information on tactics and warfare will be aligned with other contemporary texts and archeological findings, as well as etymology and toponomy. The goal of this article is not only to evaluate the source reliability in the field of battle archaeology, but also the source reliability in general.

Harald Fairhair's saga (860–933)

The area of Viken in Norway was ruled by the Danish King Gorm the Elder. The power struggle in Viken is the background for Harald Fairhair's beginning power consolidation in Norway. The fact that this text in many ways is considered a creation myth for Norway as a unified kingdom, constitutes a problem of source criticism. Fairhair was for a long time considered a king from Østlandet, while most researchers in more recent times agree that he was a king in Vestlandet, and that the size of his kingdom was limited (Skre, 2007). In addition, many dramatic literary devices have been added, especially in the scaldic poems. This may, as previously mentioned, been seen in connection with the claimed lineage to the Ynglinge-ætt and other myths of origin. In one verse from the skaldic poem of the battle of Hafrsfjord, we read that:

[...]The berserks bellowed;

battle was upon them.

Howled wolfskin-wearers

and weapons rattled. [Snorri, 2011a, p. 18]

The saga mentions battles, but they are mainly sea battles, such as the battle of Hafrsfjord, which is one of the most well-known but also one of the most mythical battles in Norwegian history. Although there is in fact an ongoing project to find the archaeological remains of the battle (Opedal & Elvestad, 2015), the texts leave us with but a few clues, chiefly the toponym in itself as well as mentions of *Jæren* (Snorre, 2003a, p. 18), the name of the district around Hafrsfjord. According to the saga, some men took refuge in a fort on a small rock, this has been interpreted as being the iron age hillfort of Berge on the small island of Haga (Særheim, 2011, p. 9). Although possible, this is a somewhat dubious claim as the hillfort would have been long out of use. It may of course still have existed as a hillfort in collective recollection as a place of refuge. As a whole, the high numbers of large boathouses and hillforts has led Arnfrid Opedal and Endre Elvestad to suggest that Hafrsfjord was a naval base and a generally strategically important area (Opedal & Elvestad, 2015). The latter is an example of how the archaeological record can be used to support information in sagas, in order to analyze battlefields one must look at the landscape at whole, in other words it is a matter of connecting the dots. Still, in this instance lines are drawn where there are perhaps no connections.

Ample archaeological evidence points to connections and alliances. In the second verse of the skaldic poem from the battle of Hafrsfjord we read that:

[...] They were laden with

warriors and with white shields,

spears brought from Britain,

blades of Frankish forging. [...] [Snorri, 2011a, p. 18]

The above excerpt is most likely referring to mercenaries or possibly alliance partners. At least it is a reference to Norwegian contact with the continent and the British Isles.

In paragraph 16 (Snorre, 2003a, p. 16) we read that: "Later on the Goths rode to and held a battle with King Harald, many men were slain and King Harald was victorious." The word rode may be interpreted as indication that they rode to the battle, or that horses were used in the actual battle. In the Norse original text we read that (Snorre, 1872a, p. 17): "Síðan riðu Gautar ofan með her mikinn ok héldu orrostu við Harald konung, ok varð þar allmikit mannfall, ok hafði Haraldr konungr sigr.", which we may translate into «they came riding down to», i.e. that we are speaking of traveling on horseback, even though it is a subtle difference, it is an important element in tactics and warfare. As further discussed in the article *There is Power in a Cohort*, it is supposed that horses were not used in battle in Viking Age Norway (Kolberg, 2011, p. 47), but that they were used for scouting purposes. Horses may also have been used by a smaller group of aristocrats, in other words a form of knights, as per the European ideal of the knight. Gauter refers to the population of today´s Götaland in Sweden, where they may have had a more significant tradition of using horses in battles, a view that is support by the Vendel-graves and Eastern influence (Shenk, 2002, p. 23–29; Stalsberg 1982, p. 271–274).

The Norwegian archeological material does not contain cavalry weapons that date back before the Middle Ages. What is often referred to as lances is really spears, and thus infantry weapons, and the swords are generally the infantry version of Spatha-swords with an average length that would have been less suitable for cavalry warfare (Berge, 2006, p. 19–21: James, 2011, p. 14–37). Based on findings in the Swedish database of findings, *Det historiska museets samlingar*, it is not possible to draw conclusions related to the frequency of spear findings vs the findings of lances. The Knighthood may have been an ideal judging by depictions, but there is a difference between ideals, myths and reality. Again, a matter of interpretation.

Håkon the Good's Saga (934–961)

Important decisions of military politics were made under Håkon's rule, such as the introduction of the *leidang* and the division of the kingdom into *skipreider*, even though this system may have older roots (Binns, 1997, p. 138; Snorre, 2003b, p. 20). Physical remains that points to such a system include longboat boathouses and harbors, such as King Øystein's harbor at Agdenes in Trøndelag county, as well as toponyms in the present-day landscape

(Elvestad, 2001; Særheim, 2011). In terms of battles, the most famous one is that of Rastarkalv in Frei in 955. As described in stories and poems, different shield walls were organized, each under a different mark. According to Snorre, signals were also blown. Such descriptions are also given about the battle of Stiklestad (Snorre, 2003b, p. 24–27). We have no indication that there was a long shield wall, as we often find depicted in popular science and popular culture.

One interesting aspect of the descriptions is how the shield walls are adapted to the number of soldiers and the topography. The sons of Eric were allegedly called ashore at Frei by Håkon, who according to Snorre had delimited a field of battle, «haslet vold», on the beach (Snorre, 2003b, p. 24). To «hasle vold» means to put up hazel-poles in order to mark and limit the area where the battle is to take place (Flatnes, 2005, p. 35). We do not know whether this took place, but if so, it bears witness of organization and a mutual understanding of rules in warfare.

When it comes to Rastarkalv, relatively good information on topography and toponomy is given, even though the name itself, Rastarkalv, is lost. The prefix *rast* may refer to a height with vegetation, or piece of land, while the suffix kalv may come from a piece of land separated from the mainland, or a small island. [2]

The toponomy Rastarkalv could be explained by the stream Kalvsgrova which is named on a map by Lorentz Klüwer from 1823 (figure 2), in modern maps often refered to as Kallskrovbekken. This stream was earlier running through the area. In later times it has been slain in pipes, and it has partly changed it course due to changes in the landscape.

[2] http://www.edd.uio.no/perl/search/search.cgi?appid=208&tabid=2320

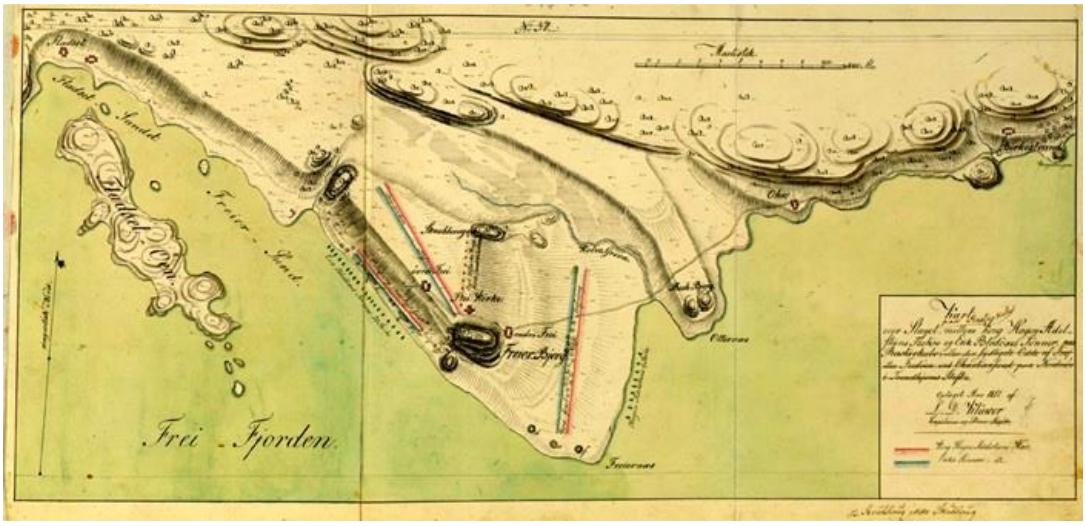

***Figure 2**: Klüwer's map of Frei/Rastarkalv from 1823. Kalvsgrova is marked to the right of the lowest army lines. Source: The Gunnerus Library, Trondheim.*

The second big battle that is described is that of Fitjar in 961. It is mentioned here that spears were thrown before the swords were drawn, a battle technique we recognize from Roman and Roman inspired battle formations, used by the Frank Kingdom and Byzants among others. It is also supported by archaeologic evidence (Goldsworthy, 1996, p. 176–228; Kolberg, 2019; Snorre, 2003b, p. 30; Ystgaard, 2014, p. 92–108, 343–394). Håkon the Good is killed in this battle, and Håkon Jarl is left in power.

Håkon Jarl's Saga (963–968)

This saga is relatively short, and it contains few references to tactics and warfare in general. But it is implied both preparation and use of warships, in other words a possible reference to leidangen (Snorre, 2003c, p. 1, 4, 5, 7) and military missions in, and contacts with other countries (Snorre, 2003g, p. 1,7,8). It was a period of much internal unrest. We find references to huskarer/huskarler in Håkon Jarl's Saga (Snorre, 2003c, p. 11). This term was used for a type of soldiers who were often found in livgarden, often armed with axes. Huskarer are frequently mentioned in British sources (Kolberg, 2011, p. 66, 67). In several sagas the huskarer/huskarler are mentioned in connection with hirdmen. But some of the references are unclear. In Håkon Jarl's Saga they are mentioned in connection with leilendinger, a timely

question is then whether we are speaking of a hird or possibly peasants, as huskarl also can mean the latter.

Olav Tryggvason's Saga (968–1000, king from 995–1000)

During the period 968–1000 Francia was unified under Emperor Otto I, and the Holy Roman empire is established. This had consequences for Scandinavia as Denmark came under increased pressure. Olav becomes allies with Otto against the Danes, who are supported by Håkon Jarl, the ruler of Norway (Snorre, 2003d, p. 25, 26). This is partly supported by information from Adam of Bremen (Bremen, 1993, p. 66–91) and by Fagrskinna (Eikill, 2008, p. 80–86). It is mentioned that Håkon Jarl placed his men in a shield wall on top of Danevirke (Snorre, 2003d, p. 24, 26), a 35 km long defence wall in Jylland which has been traced archeologically back to the 7th century (Figures 3 and 4). It is often linked to ringforts, and bears witness of an advanced organization of society (Dobat, 2008, p. 27, 53), as we also see in the organization of battle formations and conscription systems such as the leidang (Kolberg, 2019).

***Figure 3**: Remains of Danevirke by Slesvig. Foto: Willi Kramer/Wikimedia Commons licence 3.0*

Figure 4: *Detail from Olaus Magnus' Carta Marina from 1539 which shows Danevirke. Foto: Are Skarstein Kolberg*

It is told that the Franks had cavalry in addition to the foot soldiers, and it is then timely to ask to what extent this influenced warfare in Scandinavia. It appears to take longer before horses become a common element in battles in Norway, and Scandinavia as a whole. We may mention that Olav had allegedly been to Sweden, Vendland, England and Gardarike, where

he is said to have served as a mercenary. It is hard to tell what extent this influenced him tactically, but it is safe to assume that he got experience with weapons (Snorre 2003d: 5, 21, 22, 25, 26, 30).

Apart from that, there are some battles at sea, such as the battle of Svolder. It is told that a *hærpil*, i.e. war-summons, is sent out before the battle in order to gather people, and again this appears to be linked to the leidang. Shield walls, sword-things and huskarer are also mentioned (Snorre, 2003d, p. 37).

As in Håkon the Good's Saga, it is mentioned that Olav put up a delined an area of battle. This may have been a custom established by the thing that everyone was obliged to follow, also kings and aspiring kings, a form of *gentlemen's agreement* (Snorre, 2003d, p. 18).

St. Olav's Saga (1015–1030, king from 1015–1028)

Few kings are as legendary as St. Olav, and this affects the trustworthiness of our written sources. King Olav's rule was a time of wars with the Danish King Svein Tjugeskjegg. Olav served under king Adalraad against the Danish army in England. One of the famous battles in this war was held by a bridge across the Thames in London. Olav is also reported to have been to other places in Europe, such as Rouen where he was allegedly baptized (Snorre, 2003e, p. 13, 14, 20). According to Heimskringla, he also took part in sieges and attacks on fortifications in Normandie (Snorre, 2003e, p. 17), even though this is not traceable to Norman sources. In other words, he got impulses from many sources. Olav also accompanied Prince Jaroslav on several occasions, such as between 1028 and 1030, that is after he lost the crown and until the battle of Stiklestad.

It is often mentioned that Olav travelled in Viking to Sweden and Denmark, but also to Frisland, France, Spain and England. We may see the latter in connection with his power struggle with the Danish king, and the accounts of his service in England must be interpreted as that of a mercenary. This means that a Viking raid with mere looting is not likely to be the case (Snorre, 2003e, p. 6, 9, 15).

When sea battles are mentioned, chains were allegedly lain across Stoksund in today's Sweden in order to prevent attacks from foreign sea powers. This indicated an organized coastal defense. We may see this as related to leidangen (Snorre, 2003e, p. 7). Before he went to England, it is told that Olav was in Frisland with his army and that they were attacked by riders before they went ashore:

> [...] hjálmum grímt it fimta;
> þoldu hlýr fyrir hári
> hríð Kinnlima síðu,
> þá er við rausn at ræsis
> reið herr ofan skeiðum,
> en í gegn at gunni
> gékk hilmis lið rekkum. [Snorre, 1872b, p. 11]

> [...]You fought, foe of pilferers, the fifth battle, hard on helmets; bows suffered a storm off steep Kinnlimasíða, when down to the ships of the ruler rode the army, grandly, and to war against warriors went the troop of the leader (Snorri, 2011b, p. 11).

We may interpret that they rode them down, as per the preposition *ofan* in the Norse i\original text, see also the Norwegian translation, that is they were riding downwards. According to the poem there was a hard battle and *skeiðum*, or skeider most likely refers to the longest version of longships (Fritzner, 1954, p. 301, 302). *Skeið* can also mean a direction or distance, sometimes used in gatherings and competitions, so in this context it may indicate a battle site, or a long shield wall (Fritzner, 1954, p. 301, 302). It could mean that they fled back to the ships, which we may see as an indicator that they were not used to battles with horses; they were trained for infantry warfare and sea battles. We may also interpret it as witnessing how important it was to take advantage of the landscape, or that they fought from the ships down at the beach, and that these tactics ensured the victory. In Fagrskinna it says: «The fifth time he fought in the Kinnlima Fjord against an army of knights, and he conquered it» (Eikill, 2008, p. 157).

The battle of Stiklestad is the most famous from the saga literature. In my MA thesis (Kolberg, 2011) I tried to locate the battle based on topographic and toponymic information, also with help from archeological structures and findings in the landscape. One of the

problems is that the battle is linked to the location of the church. This is also the case with several other battle sites (Kolberg, 2011, p. 39, 40, 60, 86). Allegedly the altar is placed above the rock against which Olav was slain. According to Heimskringla, Olav is stabbed with a spear while lying on the rock, and subsequently there is an eclipse of the sun. A blind man also got his eye sight back through rubbing Olav's blood in his eyes. But as historian of religion Øystein Morten points out in *Jakten på Olav den hellige*, this is a story which was also told about Jesus, the Roman soldier who runs his spear into the body of the crucified Christ, how the blood is running down into the eyes of a blind man who becomes cured, and also the eclipse (Morten, 2013, p. 131). The number of soldiers in the army is greatly exaggerated. Snorre claims that they were more than ten thousand on each side, but it was probably not more than a few hundred. The normal size of a hird appears to have been about 150 soldiers. Other sources such as Adam of Bremen and The Anglo-Saxon Chronicles mentions the battle of Stiklestad as a small battle (Bremen 1993: 104; Killings 1996). It is also mentioned that they used horses for transport, but that they stepped down from the horses before they took position in the shield wall (Snorre, 2003e, p. 209).

We know from Scandinavian archaeology that farm churches were built in wood, and such a church may have been standing in the same location as the current stone church in Stiklestad is placed. Post holes were found under the church's floor during a restoration in 1930. This does not mean that the church was built to mark the place where St. Olav was killed, but it is likely to have been an important crossroads there, and this explains the position of the church. In other words, they wanted to build the church in a convenient, and thus the battle was moved in hindsight due to the church's wish for a monopoly of everything sacral linked to Olav (Kolberg, 2011, p. 2, 60, 88). Investigating the landscape can be helpful when it comes to lifting mythical veils that cover history.

Information on topography, toponomy, remains of old roads and cultural traces in the landscape allows us to narrow down the number of possible battle locations. The flat area below the hills south of the church is a plausible location. There is however a big challenge for those who attempt to locate the battle site; a large series of landslides which have hit the area

from the Middle Ages and right up to modern times (Kolberg, 2011, p. 56, 70–89). To compensate for this, we need to reconstruct the 1030 landscape.

There is some information in the saga texts, and scaldic poems, about the battle formations that were used in the battle. Shield walls are separated into different groups, each with a different group leader with a different mark. Snorre writes that «They started the war cries and launched both arrows and spears» (Sturlason, 2003e, p. 226). When the shield walls were separated into groups, each with its own leader, this indicates that we are not speaking of a long and uninterrupted shield wall. *Huskarl* is also mentioned in a poem performed by Sigvat the Skald, after he was appointed a member of the *Hird* (Snorre, 2003e, p. 43). Furthermore, there are several other similar references in the text, often mentioned in the same context as hirdmenn. But it does not necessarily have to be a reference to the hird in each case. One example is when it is mentioned that he had 30 huskarler that were going to work on the farm, and that the hird slept somewhere else. In other words, we find several instances where huskarer and hird are distinguished (Snorre, 2003e, p. 57). Huskarer does not necessarily refer to a soldier.

The landscape is an important factor in establishing the battle site. In the MA thesis on the Battle of Stiklestad I considered various other alternative battle locations which were plausible based on roads and the farms in Stiklestad, one of them was a location where a stream runs below a hill. The stream may make this location less likely as it constitutes an obstacle or separation line as per archeological landscape analysis. It is not certain whether the stream was running in this course in 1030. Old maps, aerial photos and geological data was studied without giving conclusive answers, but streams may also have been used to an advantage (Kolberg, 2011, p. 82). In the event that you did not have to fight, if you were able to find protection behind an obstacle and thus win through mere presence, this must be considered optimal given that most of the soldiers were farmers (we may also call them soldiers or proto-conscripts, as per the previously mentioned leidang).

We also find descriptions of sea battles, such as Nesjar in 1016. Attempts to determine the battle were made in 2015 by, among others, battlefield archeologist Kjersti Jacobsen

(Slagene på Re-prosjektet).[2] It turned out to be difficult to find the battle site, which goes to show the challenges of searching for battle fields, especially at sea.

Olav allegedly founded Sarpsborg and built entrenchments and a church there around 1015 (Snorre, 2003e, p. 61). There are still entrenchments visible in Sarpsborg today. Archaeological investigations have found several traces of human made entrenchments among today's town streets which correspond to the preserved parts of the entrenchments, as well as the extent of the Middle Age town. In the 1850´s log constructions that may have been a fundament for a tower were found at the entrenchments. Graves that are dated to around 1015 have been found inside the entrenchments. Several coins from the first half of the 11th century have also been found close to the entrenchment (Guhnfeldt, 2016; Riksantikvaren, 2015, p. 42–44; Vattekar, 2016, p. 245–256). This supports the information that Olav founded Sarpsborg and that he had knowledge on building fortifications.

Magnus the Good's Saga (1035–1047)

At this time there were internal wars in Denmark, and several battles are described. Many of these were sea battles, one of which took place in Limfjorden (Snorre, 2003f, p. 33), and a larger battle in Lyrskoghede, today's Schleswig-Holstein. Details are scarce; therefore it is not possible to determine the tactics apart from King Magnus having gathered a large army supported by the German Kaiser Otto. It does however give us further indication of contact networks and alliances. The background for the battle at Lyrskoghede was a conflict with the Wends, the inhabitants of Wendland in today's Poland, where King Magnus was on a campaign. The Saga mentions a siege of the town Jomsborg and its town walls (Snorre, 2003f, p. 24), another instance of a siege. We do however lack a description of the town's location. It is described as home of The Jomsvikings that waged war against Olav Tryggvasson, but they and their town may be fictitious (Stylegard, 2015, p. 78). Weibull writes that both Jomsborg and The Jomsvikings are pure fiction (Weibull, 1911, p. 179–195). Fagrskinna from the 13th century is the only source older than Heimskringla that mentions The Jomsvikings. Apart from that, there are no references to neither The Jomsvikings nor Jomsborg. This also goes for foreign sources such as Adam of Bremen. Saxo Grammaticus on the other hand mentions a town named *Julinum* that was founded by Danes, and it may correspond to Jomsborg

(Stylegard, 2015, p. 79, 80). Adam of Bremen writes about a place called *Jumne*, where Slavs and Scandinavians meet and trade (Bremen, 1994, p. 65, 66). But as Stylegard, and to a certain extent Weibull points out; Jomborg may refer to general tendencies, i.e. that such places did exist. We may compare with similar towns such as Trelleborg, which does have archeological evidence. Jomsborg may correspond to the town of Wolin, where according to archeological excavations, entrenchments and objects that indicate contact between different ethnic groups have been found (Stylegard, 2015, p. 81, 82).

The references to battles on land describes use of throwing spears and arrows (Snorre, 2003f, p. 30, 33). Furthermore Magnus, as mentioned, gathered leidangen and appointed lendmenn, so there is little doubt that leidangen was important for mobilization (Snorre, 2003f, p. 6). King Magnus eventually succeeded in conquering both Norway and Denmark, and thus he wanted to claim the deceased Canute the Powerful's posessions in England. This is partly supported by information in The Anglo-Saxon Chronicle (Killings, 1996). This was the background for Harald Hardråde's later campaign in 1066.

Harald Hardrada's Saga (1030–1066, king from 1046–1066)

This saga is rich in descriptions of battles and battle formations and refers to networks of contacts and travels all over Europe. Hardrada allegedly traveled to Miklagard (Constantinople) via Gardarike, where he led the lifeguard of the Byzantine Emperor. He allegedly took part in sieges of several fortified towns, so siege warfare was not unknown to him. This information is largely supported by other sources, such as the Anglo-Saxon Chronicles (Killings, 1996), and by information about Varangians in the service of the Byzantine Emperor from the first half of the 9th century (Blöndal og Benedikz, 2007 [1978], p. 32–102). The runic inscription found inside Hagia Sophia (figure 4) in Istanbul bears witness of the Scandinavian presence in Constantinople.

***Figure 5**: The runic inscription from Hagia Sophia. Foto: Are Skarstein Kolberg.*

Hardrada is most famous for the invasion of England which ended in defeat and his death at Stamford Bridge in 1066. Not only England was attacked. Before his campaign in England it is mentioned that he shot a war arrow and gathered the leidang for an attack on Denmark to claim the throne (Snorre, 2003g, p. 32). Even if all the information should not be correct, the general picture shows mobilization and organization on a large scale. It is therefore important to distinguish between Viking raids and larger campaigns. Hardrada's campaign in England appears to have been well organized with camps and outposts for scouting and gathering of supplies. The archaeological finds of large winter camps possibly connected to the *Great Army's* invasion of England around 872 A.D. shows that Scandinavians were able to organize campaigns of rather large scales, and set up camps, already prior to Hardrada's invasion (Hadley et al., 2016).

Descriptions of the Battle of Stamford Bridge shows that they knew how to take advantage of the terrain to get an advantage. In the first part of the battle, a vanguard was taken by surprise as they were gathering resources. In this event the bridge was used as a bottle neck. It is hard to determine how much of this is true, but it is also written in The Anglo-Saxon Chronicle. In the main part of the battle Hardrada sets his army up in a large circular shield wall on top of a hill to defend against cavalry, who in turn face the disadvantage of attacking up hill. The English did however triumph by tricking Hardrada's army into believing that they were fleeing, thus breaking up their formations, allowing the English to penetrate Hardråde's lines (Snorre, 2003g, p. 89–92).

Apart from this there is some mention of battle formations, such as bore's head formation (Snorre, 2003g, p. 2) and a variation reminiscent of the Roman *testudo* or its Byzantine equivalent *foulcon*, where the shields are held above the heads of those in the lines behind in the shield wall (Snorre, 2003g, p. 89). The two words *foulcon* and *fylking* may be connected etymologically (Rance, 2004, p. 265). This Byzantine link is interesting considering that Scandinavians, or Varangians served there.

Olav Kyrre's Saga (1067–1093)

There are few references to warfare in Olav Kyrres saga, which is also a very short text. There are however some indicators of organization and administration. According to the saga he had 100 hirdmen (Snorre, 2003h, p. 4), which is a more realistic number of soldiers compared to the exaggerated numbers we find in St. Olav's Saga for instance, where the number of men at the Battle of Stiklestad is reported as 10000 on each side. It is also stated that he had 60 huskarer/huskarler, which could indicate that a part of the hird consisted of this type of soldier (Snorre, 2003h, p. 4). Olav Kyrre allegedly founded several towns and expanded Bergen with new parcels and docks, which is supported by archeological findings, such as early quay constructions (Hansen, 2005; Herteig, 1969). In her doctoral thesis Gitte Hansen argues against Heimskringla's claims that Kyrre founded Bergen, as she refers to archeological findings that indicate town activity prior to 1070 (Hansen, 2005). Kyrre is likely to have built the town with a view to trade and seafaring. Kyrre is also said to have minted coins, so called

pfenniger[3], and it stated that he built several large farms where he lived on his travels around the kingdom – which may correspond to the system of Huseby-farms (Brink, 2007, p. 59–63; Snorre, 2003h, p. 8). Allegedly he spent his last days on the farm Haukebø, which corresponds to the name in the Norse edition. This is supposedly the farm Haakeby which still exists (Snorre, 2003h, p. 8). There is no etymological link between Huseby and Haukebø but given that Haukebø comes from the Norse word for hawk (Fritzner, 1867, p. 247), we may play with the thought that this was his *Eagle's Nest*. This interpretation may not be too far-fetched considering that animals such as bear and wolf or birds such as eagle were often used as symbols of power and strength, but also origin (Jesch, 2012, p. 261–266).

The saga of Sigurd the crusader, Eystein and Olaf (1103–1130)

The most noteworthy character in this saga is Sigurd the Crusader, first and foremost known as the first Crusader king. He was the first European king to participate in a crusade as he left Bergen with 60 ships in 1107 (Snorre, 2003i, p. 3), which are numbers supported by Fulcher of Chartres who wrote about the first crusade (Kragh, 2009). It is a safe claim that this was a well organized campaign rather than a Viking expedition. It is however written that Sigurd met Vikings in the Mediterranean on two occasions, and that battle followed (Snorre, 2003i, p. 4, 6). In this context Vikings must be understood as pirates (Haavardsholm, 2012). First Sigurd sailed to Galicia in today's Spain after he had spent the winter in England. He sieges and occupies the fortified towns of Sintra and Lisbon (Snorre, 2003i, p. 4, 5; Morten, 2014, p. 98–100, 101, 102), before he continues his journey to Serkland, today's Marocco. Here we find descriptions of a battle with heathens, referred to as *blámaðr,* blue men (Snorre, 2003i, p. 6). On Sicily Sigurd and his army find lodgings with Duke Roger II, before they continue to Jorsaland and the town of Jorsalaborg, i.e. Jerusalem. Here Sigurd meets King Baldevine, and together they traveled to Syria where they sieged and occupied Sidon (Snorre, 2003i, p. 10, 11).

Afterwards Sigurd returned to Norway via Miklagard where he spent time with Emperor Alexios I of Byzantium. While Sigurd traveled back to Norway parts of his army stayed behind to serve the Emperor (Snorre, 2003i, p. 12, 13). Snorre goes on to recount that

[3] http://www.dokpro.uio.no/umk/bilder/br_ok.html

Sigurd visited Hedeby in Denmark where he met the Saxon Duke Lothar, who later became Emperor of the Holy Roman Empire (Snorre, 2003i, p. 13).

Later in the saga we read that the leidang is gathered and that Sigurd goes on a campaign into Svealand to convert heathens in the area around Lund and Kalmar (Snorre, 2003i, p. 24). This is unlikely to be true given that Sveland was Christian at that time. The Cathedral of Lund was constructed in the 12th century[4], which serves as an argument that forced conversion was not necessary in the area.

It is hard to determine how much of this is true. When it comes to crusades and the journey to Jerusalem, we are entering a sphere of Christian wonders and martyrs, similar to what we find in St. Olav's Saga. Some events are supported by foreign sources such as writings by Albert of Achen and Fulcher of Chartres. Given that parts of this material is not easily accessible, historian of religion Øystein Morten's (2014) book *Jakten på Sigurd Jorsalfare,* has been applied, as he has done thorough work with the source material. Claus Kragh's article in The Norwegian Biographical Lexicon is another valuable secondary source.

The information on tactics is scarce, but again a network of contacts is central. We must take into account an increasing influx of impulses from the European Knighthoods, which may again have contributed to horses later being used in Norway. As I will argue later, archeological findings imply that horses may have been used in at the Battle of Re in 1063. Sigurd must have gained good insight into siege warfare, and certainly the leidang was crucial.

Magnus the Blind's Saga (1130–1136)

This period is characterized by a power struggle between Sigurd Jorsalfare's son Magnus Sigurdsson, later Magnus the Blind, and Sigurd's brother, Harald Gille. They split the country between them, and each gets support from his part. Both *haugaþing* (thing-mound assembly) and hird, which indicate organization, are mentioned (Snorre, 2003j, p. 1). 1130 is the year when the civil war period (1130-1240) in Norway starts.

[4] https://snl.no/Lund_domkirke

Once again, the information on tactics and warfare is scarce, but it is mentioned that a ship army is sent out and that mounted guards are placed along the road leading to the road where King Harald was lodged (Snorre, 2003j, p. 2). Battle ensues and it is recounted that Magnus organized his army as a long shield wall to surround Harald's army (Snorre, 2003j, p. 2). We also read about battles with Wends and the Danish King (Snorre, 2003j, p. 10). The number of soldiers is likely to be exaggerated. Magnus is reported to have 60 long hundred men, equivalent to 7200, and that Harald had about 1500 (Snorre, 2003j, p. 2), which seems like a lot given that a hird typically consisted of 100-300 men.

Håkon Herdebrede's Saga (1157–1161)

The final verses of this saga may be an interesting starting point. Here we read that Varangians joined the Emperor of Byzantium in his battle against blue men, which must be understood as Muslims (Snorre, 2003k, p. 19–21). This may refer to a crusade. Varangians (Norwegians) were posted as guards of the Emperor's tent. Christians, an alliance of Greeks, Franks, Varangians and Flemish were met by wagons and horses, and that the enemy made a large fort of the wagons, it also contained embrasures. A Varangian reportedly rode heroically on his white horse and fought the enemy single handedly.

Once again, the story is colored with wonders and exaggerated heroism, yet the long lines in the saga, i.e. the main events, are plausible. It is also written that a church was built in honor of St. Olav in Miklagard (Snorre, 2003k, p. 21). Such a church is likely to have existed, as follows from Passio Olavi from around 1150 (Skard, 1970, p. 26). This collection of legends describes wonders that followed after St. Olav's death, and is probably written by the bishop in Nidaros, Øystein Erlendsson (Skard, 1970, p. 12). The fact that this is a religious text inspired by Olav's status as a saint offers some problems of source reliability. We know that several churches were built in his name, and two texts that mention a church for St. Olav in Istanbul supports the claim.

The saga mentions both shield walls and flock commanders (Snorre, 2003k, p. 7, 17, 18) commanding battle formations, i.e. shield walls as we see in the part describing St. Olav. Ships

and troop transports at sea as well as huskarer are recurring elements (Snorre, 2003k, p. 10–12).

Magnus Erlingson's Saga (1161–1177)

This saga is particularly interesting when considering the results from the project «The Battles at Re», and this will be the main subject of this sub-chapter, because The Battles at Re is in many ways a practical test of Heimskringla's source reliability from a battlefield archeologist's perspective.

In his depictions of the battle of Re between Sigurl Jarl and Erling Skakke in 1064, Snorre tells us that Erling was informed that Sigurd Jarl was *up at Re*, on the farm Ramnes (Snorre 2003l: 12). According to the Norse original text of Fagrskinna, Sigurd was at the farm *Dinnduxstaðum* (Jónsson, 1902, p. K89), in Edvard Eikills Sagabook translation from 2008 called *Dyndugstad* (Eikill, 2008, p. 382). This farm is part of the route to the battle as it helps us localize it.

At this time Erling was in Tønsberg, but he was prepared for war and he had sent out scouts.

When he was informed that the enemy was approaching, he set out with his army to surprise Sigurd. They both set up shield walls. Sigurd's shield wall was placed *on a small hill facing the bridge between them and the farm,* where a small river was flowing according to Snorre (Snorre, 2003l, p. 13). Erling built his shield wall on the other side, and behind the shield walls armed and mounted men were placed together with the king (Snorre, 2003l, p. 13). This either refers to cavalry meant for flanking maneuvers or horses for commanding soldiers during the battle. In this way the king and other prominent persons were mobile and able to give commands quickly. If we interpret it to mean that the horses were used for cavalry, this is the earliest indication that horses were used in battle in Norway. We will compare this with the archeological material from the Battles at Re-project later in this sub-chapter.

According to Snorre, Sigurd said to his army that when Erling's banner crossed the bridge, Sigurd's shield wall was to attack Erling's shiled wall down the hill. Erling, on the

other hand, orders his army to walk upstream along the river rather than meet Sigurd at the bottom of the hill (Snorre, 2003l, p. 13, 14). If we understand the text correctly, this prevented Sigurd from using the terrain to his advantage. In any case the Snorre tells us that the battle was fought at the bottom of the hill. First they threw spears, then they drew their swords, as in Roman and later Carolingian tactics (Goldsworthy, 1996, p. 176–228; Snorre, 2003l, p. 14). The bottom of the hill must be interpreted as down by the river, and we read that Sigurd's army was forced to flee up the hill, and that they retreat into the woods (Snorre, 2003l, p. 14). These reports allow us to visualize the events of the battle, and thus also place its phases in the landscape from start to end.

The Batlte of Re-project included thorough topographic and toponymic analysis of all information from the saga texts. This included roads, paths and lines of movement in the landscape. Ramnes is today a church site and parish and covers a larger area. Fargskinna reports that Sigurd and his men were at Dinnduxstaðum. In an attempt to find it more about where the armies came from and where they were headed, project leader and archaeologist Kjersti Jacobsen used this farm as her starting point. Oluf Rygh (2018) refers to P.A. Munch, who mean that the name could be a corruption, or misreport of the name of the farm Linnestad in Ramnes. There are no explanations of the first parts *Dinndux* or *Dyndug* in Norse dictionaries, and neither in The Norwegian Encyclopaedia of Place Names, nor does Olaf Rygh provide entries for these subject words. Rygh does however point out that the farm name Linnestad appears in some saga texts (Rygh, 2018). In other words, it is hard to find etymological support for Dyndugstad corresponding to Linnestad. But the farm is situated close to the supposed battlefield, and right next to Kongeveien (King's Road). This road turns into Bispeveien (Bishop's Road) which probably was the main road into Tønsberg, and the roads were the main starting point for localization of the battle site. Traces of sunken lanes from the main road has been established, and this enabled a connection with the supposed battle site at Linnestad. These side roads may have been used to surprise Sigurd's army. Old cartographic material, written and archaeological sources were used to determine the roads (Jacobsen, 2013a, p. 75–84). Determining roads and access is worthwile because army movements requires a lot of logistics and therefore also good roads (Lynch and Cooksey, 2007, p. 25). There were also topographical factors, (compare with the descriptions in Heimskringla

and Fagrskinna), involved when Linnestad was used as a starting point, for example the proximity of a river and a stream (Jacobsen, 2013a, p. 71, 74, 88).

Places and place names may move in a landscape as settlements are moved for different reasons. Churches and other institutions in a society may be moved or built, and this may lead to a place name also being moved (Ringtved, 1999, p. 365–369). Charlotte Fabech (1999, p. 469–471) argues that places were moved during the transition to Christianity due to a new cosmology and world view which led to a new pattern of settlement and centres. Whereas it was common in Pre-Christian settlements to place a heathen hof at its centre, on the same physical level as the secular sphere, churches were often built on heights above the other buildings to separate the religious and the mundane. This may explain why today's Ramnes is placed around Ramnes Church. This interpretation can however be questioned, because there are examples were this was not the case. The location of Alstadhaug in Levanger, Trøndelag is a good example. Here we find a larger tumulus and a Middle Age church on a hill that stands out in the landscape. Findings in the surrounding area show that a heathen temple probably was placed there before the church was built (Sollund og Brendalsmo, 2013, p. 203, 204). But it may also be that parts of the Ramnes farms are abandoned, or have been added to other farms, and that the original farm name, as well as its affiliation disappeared (Jacobsen, 2013a, p. 89). It could also be that a larger area was named after a farm. This would make it more difficult to localize the original starting point, as in the case of Ødegård, in the example above.

A Summary of Kjersti Jacobsen's Field Work at Re

The following sub chapter is a summary and evaluation of Kjersti Jacobsen's work at Re. In cases where she is referred to, her work is described, but the references to other sources are mainly my revisions and evaluations. When the battle was localized, they used Snorre's descriptions of toponymy and topography as a starting point. This was compared to today's landscape and traceable changes in geology and place names (Jacobsen, 2013a, p. 71, 74, 83).

After initially deducing how to narrow down, several sublocations were identified (1A, 1B, 1C, 2, 3, 4, 5 og 6, whereof 5 and 6 were investigated with a view to the battle of 1177), the

archeological field work began. The motivation for dividing into sub-localization was partly because it would make it easier to handle measurement and maps for distributing findings (GIS figures 6 and 7).

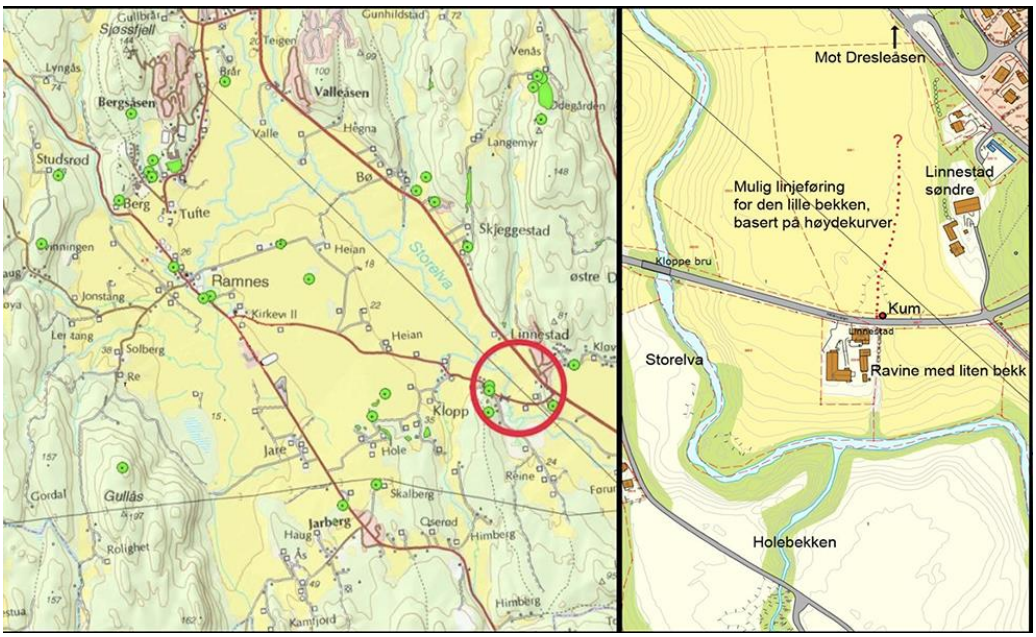

***Figure 6**: Narrowing down the battle of 1163. Jacobsen/VFK 2013.*

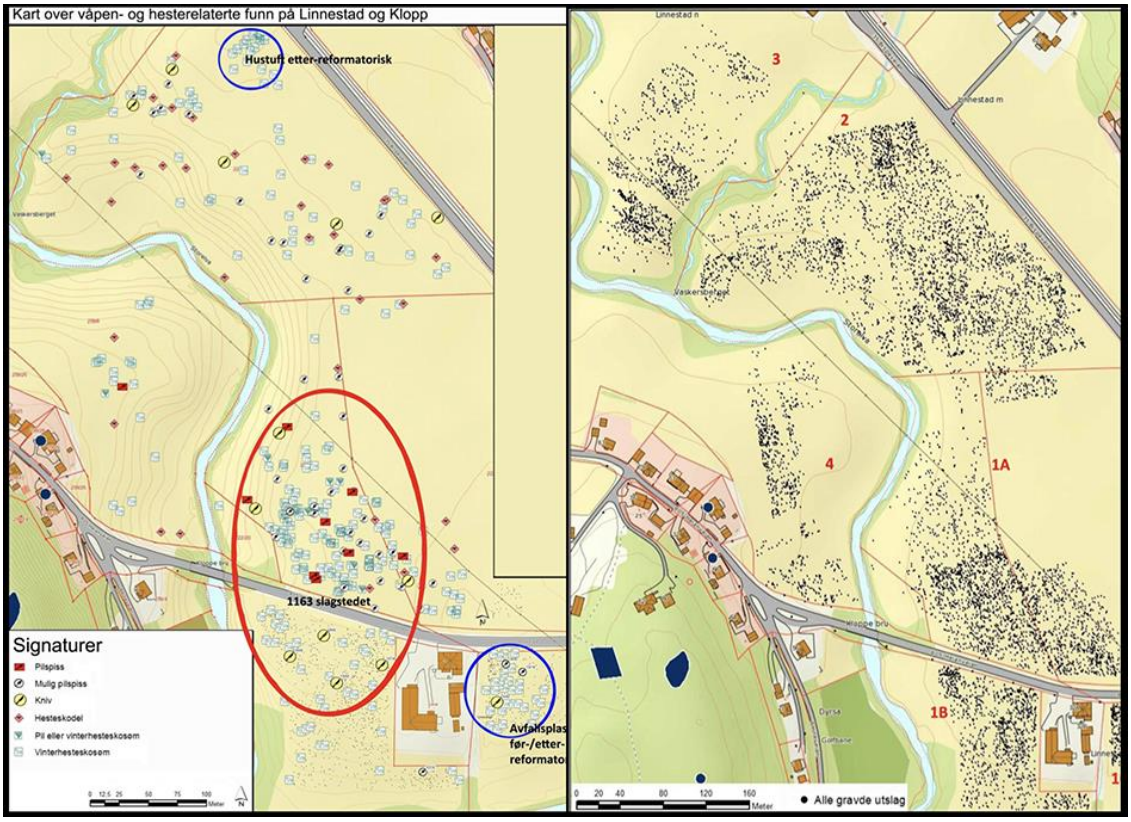

Figure 7: *Map of findings distribution from the battle of 1163. Jacobsen/VFK 2013.*

By searching with metal detectors, negative findings were made in area 3, and this made it easier to narrow down the search area. Afterwards positive findings were made, that is findings that may be linking with a possible battle, in the areas 1A, B, C, 2 and 4. They found arrowheads, horse related equipment and personal belongings. Around 3500 metal objects were found in total. In addition, machine excavation and geophysical investigations were made to unveil potential archeological structures to link the objects to (Jacobsen 2013a: 96–107).

The majority of the weapons found, mainly arrowheads, but also axes and weapon knifes, typologically dated to the period around the 12th century, were made in area 1A. Arrowheads and horse equipment, especially winter shoe seams, were found in area 2. The interpretation of the project was that the battle had begun in area 1A, where they fired bows

and arrows/and or crossbows. 75 horse winter shoe seams were found in areas 1A and 2. The arrowheads were more concentrated in one area, while the knives were more widely distributed. This may indicate that the location where the arrows were concentrated was the starting point for the battle, because it was common to open the battle by firing arrows, before close battle begun in battle formations.

Heimskringla tells about the 1177 battle, between Magnus and Birkebeinerne led by Øystein Møyla that Magnus received information that Birkebeinerne were at Re. He went there with his army and put up a shield wall just next to the farm. The name of the farm is not specified. (We read that they stamped the snow hard with their feet, and it was January). Birkebeinerne also gathered in a shield wall before battle ensued (Snorre 2003l: 42). Neither does Fagrskinna identify the farm in question, just that it was placed at Re. Further on we read that Magnus put up an entrenchment and that he placed his army in a shield wall across the road (Eikill, 2008, 416–418).

Topographical information about the battle of 1177 is far scarcer than those about the battle of 1163. We are told that the battle took place by a road not far from the farm. The snow was so deep in the fields that the formations fell apart. This led King Magnus to victory. King Øystein was killed by a farmer during his flight as he tried to hide in a farm. And his corpse was led to Ramnes (Snorre, 2003l, p. 42). Maybe the farm mentioned initially is Ramnes as well. The road referred to may be Prestegårdsveien which leads to Ramnes Manse and Solberg. In connection with the field work they also investigated here, search areas 5 and 6, based on the information that Ramnes Manse may have been the original Re-farm (Jacobsen, 2013a, p. 36–38,96–107).

At the assumed location of the 1177 battle they used the same methods as they did at the location for the 1163 battle, and they found several arrowheads and a possible crossbow bolt. They found horse equipment here as well. Loose findings from the Middle Ages have been registered in the area, such as shape from a sword sheath, parts of swords, axes, more arrowheads and a spearhead. Georadar was applied to search for possible structures, such as plowed down tumuluses, but none were confirmed (Jacobsen, 2013a, p. 136,137).

Possible error sources must be taken into account, as plows may move objects. The explanation may also be that masses have been moved from elsewhere, or landslides. In addition, it could be rubbish dumps, smiths, road remains, older courts or other places where objects may accumulate, or people may have lost things. As Jacobsen also points out, this is where measurement and maps of findings distribution becomes very useful to determine the frequency of findings within every course. If there is a lot of iron debris in a field, it will be measured. In this way you can register areas where an extra high concentration of a material stands out, such as arrowheads or other objects linked to battles. No rubbish tips or other structures such as courts were found at the assumed location of the 1163 battle (Jacobsen, 2013a, p. 110, 111). A comparison between the distribution of findings in the search areas and a larger area around the locations would have given a larger picture. Another possible error source is the farm name Dyndugstad, and whether the name corresponds to the farm Linnestad.

The arrowheads spurred a debate around dating and whether they were in fact arrowheads. This was partly due to little research on typology and that arrowheads in the Middle Ages were less well made due to large demands, and consequently a large work load for smiths, which again was due to more frequent battles during the civil war period. There is also little comparative material from Norway. It may also be that the production of arrowheads was not under the same demands for quality and standardization as other types of weapons used more than once (Jacobsen, 2013a, p. 112–119). The purpose of arrows was mainly to spread fear as well as incapacitating the enemy as much as possible rather than killing (Berge, 2006, p. 83). A more recent analogy may illustrate this: there are musket bullets with the casting sprue intact due to a large demand for bullets and thus an increased workload. Function before form (Mandzy, 2015, p. 154–176).

In other words, there is some doubt around the findings, yet it is interesting to use Heimskringla as a starting point for information on topography and toponymy to apply in the field to locate larger concentrations of possible projectiles in places interpreted as battle sites. The two examples from the battles at Re show that the methods of battlefield archaeology

serve a practical purpose. The distribution of findings can tell us something about the course of events in time and space and thus also tactics.

One interesting question is whether identified battlefields may be used to determine source reliability for Heimskringla in terms of the number of soldiers in the battles. According to Snorre, the numbers were often several thousand. In the battles of Re, Snorre gives us numbers of 1800 soldiers in total for the 1163 battle, and that King Magnus had 1500 soldiers in the 1177 battle (Snorre, 2003l, p. 12, 42). It is hard to determine the degree of exaggeration, but a hird usually consisted of around 150-300 soldiers. Admittedly there were changes over time. It would have been interesting if the extent of findings reflected the number of fighters, but it is unfortunately impossible to determine from the findings of arrowheads alone.

It is noteworthy that horse related equipment was found. Could this be the first battle in Norway were horses were used, considering information from Heimskringla, Fagrskinna and archeological findings? This is an interesting question given that horses is a *game changer* for tactics. It facilitates fast flanking maneuvers, but it also requires larger mastery of the landscape in order to use it for your advantage. The fact that we are mainly dealing with winter shoe seams, which corresponds with the information that the battles were in January/February, is also a good indicator and shows, in addition to the examples from roads and ground conditions, why seasons are relevant.

All in all, the above points to promising findings, even though they are not conclusive. There are many apparent matches, but we lack comparative material. Another point is that this is a relatively late saga, meaning that the span between events and the date for writing is shorter. The truth content is therefore assumed to be larger, and the content is more intact.

Summary and Conclusion

It is not possible to trace the development of tactics based on saga sources alone, one possible exception being the introduction of horses in the period around the 1163 battle of Re. But a lot of uncertainty remains, and it is hard to document the use of horses in battle through archeological material. Equipment such as horse shoes and bits are not primarily meant for battles but rather general use. Depictions of and references to cavalry mainly indicate an ideal.

All larger findings of cavalry weapons are dated to later in the Middle Ages. When we look at the frequency of terms and events in connection with those, such as the use of leidang, we see a tendency that the leidang was often used between Håkon the Good and the civil war period. This may reflect a change from a threat scenario characterized by outside enemies such as the Danish King, to an inner power struggle between pretenders from the Hårfagre clan (table 1). It remains a problem that some of the kings' sagas are expanded, whereas others consist of only a few paragraphs. The saga of St. Olav is very long due to all the myths and the sanctification.

Heimskringla refers to battle formations, i.e. shield walls. These are often separated into groups. This is supported by both laws on weapon combinations and the archeological material. Certain weapon combinations require formations. It also follows that the leidang system is important with a view to mobilization and weapon things. Huskarer/huskarler are often described, but the question is whether we are allways talking about hird, or maybe it could also be servants, or even petty farmers in some connections. The important factor here is the ability to adapt to situations and terrains. The number of references to continental contact is also interesting, among others the Francia and Byzantium, but also the Danes. Danevirke and Emperor Otto are refered to, contact which is supported both by archaeology and Frankish sources. Table 1 shows the frequency of terms linked to warfare in Heimskringla.

When it comes to determining battle fields, it becomes harder the further back in time we get due to source reliability as the distance between event and time of writing increases. Another general point is the lack of topographical information. Few battle accounts provide sufficient information. These are mainly the battles of Stiklestad, Rastarkalv and Re. Apart from that conservation conditions is a potential problem in terms of time and space, i.e. how objects disintegrate in time, but also the conservation conditions in different soil types and climates. Searching for remains after sea battles is particularly challenging due to dredging, rust and the fact that searching under water is more demanding than searching on land.

From a source reliability perspective several problems occur when we use saga texts such as Heimskringla. There are several interesting correlations between saga depictions and

archeological findings such as the findings at the well in Sverresborg[5], the battles at Re or Danevirke. It is however important to point out that such connections are not solid proof that certain events took place, but rather that general tendencies, i.e. the broader perspective presented is plausible. By the broader perspective we mean society as it is depicted and the description of overarching institutions such as the leidang, but also named kings such as Harald Hårfagre and outside contacts such as The Holy Roman Empire. In other words, the sagas may say something about the general development and situation, but details and stories may to a large extent be fictitious, such as the Jomsvikings and the town of Jomsborg. Possibly also some of the campaigns, but description of such activity implies that campaigns and contacts did take place. We also have evidence supporting this. One example is the runic inscription from Hagia Sofia and foreign sources. We also see that the level of truth in later sagas is larger than in the earlier, and that some of the information here is also supported by foreign sources. There is a relatively short time span between the reign of the later kings in the 12th century and Theodoricus Monachus' saga and Ågrip is written. More research and findings that support unique events may increase the source value; it does however remain a scientific problem that they cannot always be falsified. Lack of physical findings at a battle field does not mean that the battle did not take place, but neither does it make it easier to determine tendencies in warfare such as the use of weapons and tactics.

Another challenge is that using saga texts is a time-consuming process that requires interdisciplinary work such as knowledge of several types of sources, i.e. philology, and knowledge of toponymy and etymology. Misunderstanding and misinterpretation are possible error sources.

***Table 1**: The occurence of terms related to warfare and tactics in Heimskringla.*

Terms	Occurence in Heimskringla
Castle/castle wall	Ca. 124
Ring armour	38

[5] From The King Sverre's Saga, not Heimskringla.

Shield wall/building a shield wall	118
Horse	117
Hird	145
Helmet	62
Huskar(l)	30
Hærpil/war-summons	18
Leidang and skipreider	80
Arrows/to shoot arrows/rain of arrows	63
Knight	13
Rider	2
Ship and the ship-types karve, knarr og skeid, as well as ship-related events	1176
Shield	145
Shield wall	13
Spear/to use spears	90
Sword-things and arrow-things (weapon-things)	3
Sword/to use swords	243

Bore's head formation	1
Signaling fires/beacons	6
Wagon-castles/fortifications (to use wagons to shield against attack)	3
Axe	1
To blow signals/battle signals	27

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