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Re-forging the smith: an interdisciplinary study of smithing motifs in Völuspá and Völundarkviða

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RE-FORGING THE SMITH: AN INTERDISCIPLINARY STUDY OF SMITHING
MOTIFS IN *VQLUSPÁ* AND *VQLUNDARKVIÐA*

(Spine title: Re-Forging the Smith)

(Thesis format: Monograph)

by

Leif Einarson

Graduate Program in English

A thesis submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

The School of Graduate and Postdoctoral Studies
The University of Western Ontario
London, Ontario, Canada

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School of Graduate and Postdoctoral Studies

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**Re-forging the Smith: an interdisciplinary study of smithing motifs in
Völuspá and *Völundarkviða***

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requirements for the degree of
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Date

Chair of the Thesis Examination Board

Abstract

In *Re-forging the Smith*, I examine smithing motifs in the Old Norse poems *Völuspá* and *Völundarkviða*. The purpose of this research is to develop an understanding of these motifs in the contexts in which these poems were composed and transmitted.

The first chapter examines stanza seven of *Völuspá* and the role of the *aflar*, “forges/furnaces”, that the Æsir establish as part of their first settlement. I examine the significance of these *aflar* from literary, linguistic and archaeological perspectives and in relation to metallurgical functions, spatial associations, communal structures and patterns of trade. I present a definition of *afl* and I conclude with a summary of the significance of the *aflar* in *Völuspá* stanza seven.

The second chapter examines stanza forty of *Völuspá* and the role of the toponym *Járnviðr*, “Iron-wood”, in both the mythological and socio-historical landscape. I analyze the derivatives of this toponym, as well as toponyms that appear to be morphologically and semantically related to *Járnviðr*. I conclude that this toponym exhibits a geographical concept of resources related to bog iron smelting.

The third chapter examines artisanal motifs in *Völundarkviða* in comparison to early Germanic customs and possible literary and historical analogues. I study the poem as a performance of spatial, networked relations between artisans and the aristocratic elite. I examine the significance of *Völundr*’s artisanal revenge as a subversion of early Germanic customs.

Whereas smithing motifs and smithing figures have regularly been approached through archetypal and comparative methodologies, this thesis attempts to broaden our understanding of these motifs in relation to specific literary, social and technical features of metalworking in early medieval Scandinavia.

Keywords: Old Norse, smith, *afl*, *rauði*, bog iron, *Járnviðr*, medieval, central-place complex, *Völundr*.

Du bist ein Gast der Natur. Benimm dich! – Hundertwasser
(“You are a guest of nature. Behave yourself!”)

*Þá mælir Gangleri: ‘Þettu eru mikil tíðindi er nú heyri ek.
Furðu mikil smíð er þat ok hagliga gert.
Hvernig var jörðin háttuð?’* – Snorri Sturluson

(“Then Gangleri says: ‘These are important tidings which I now hear.
That is an amazingly large construction and skillfully made.
How was the earth constructed?’”)

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List of Abbreviations

COD = *Canadian Oxford Dictionary*

Gylf = *Gylfaginning*

H = *Hauksbók*

ÍF = *Íslenzk fornrit*

LP 1860 = Sveinbjörn Egilsson, 1860: *Lexicon Poeticum*

LP 1931 = Finnur Jónsson, 1931: *Lexicon Poeticum*, second edition

OE = Old English

OED = *Oxford English Dictionary*

ON = Old Norse

ONP = *Ordbog over det Norrøne Prosaprog – A Dictionary of Old Norse Prose*

R = *Codex Regius*

Skj. = Finnur Jónsson, 1967-73: *Den Norsk-Islandske Skjaldedigtning*

SnE = *Snorra Edda*

SPSMA = *Skaldic Poetry of the Scandinavian Middle Ages*

Vkv = *Vǫlundarkviða*

Vsp = *Vǫluspá*

All Icelandic authors are cited according to their first names.

Introduction

“Paradoxical though it might initially seem,” John Hines writes, “the serious study of myth must also be a study of reality. Myth is not merely fiction and fantasy, the absolute antithesis of concrete fact” (2003: 19). Rather, Hines suggests, “both the truth that is expressed in mythic form, and the way it is portrayed, will represent topics that were particularly significant in the myth’s native circumstances” (2003: 19). A study of smithing motifs and smith-figures in Old Norse¹ myths must therefore appreciate how these motifs and figures functioned within their “native circumstances”. Many studies have presented insightful and fascinating interpretations of the figure of the smith and the significance of smithing motifs. Few studies, however, soundly and clearly evaluate the actual technical features and contexts of smithing work in the communities and cultures during the period in which extant sources for the Old Norse myths were composed and circulated. In this dissertation I examine key smithing motifs in the eddic poems *Völuspá* and *Völundarkviða* in relation to the socio-cultural role of smithing techniques and sites in early medieval Scandinavia.

In this introduction I provide general summaries of *Völuspá* and *Völundarkviða* as well as an overview of the manuscript context for these poems. I survey what we know about the smithing techniques used during the early medieval period in Scandinavia. I briefly discuss evidence for the cultural significance of furnaces, forges and crucibles, with a particular focus on forge-stones and pictorial representations of smithing. At the end of this introduction I review some of the scholarship on the figure of the smith and I outline the objectives of each of the chapters that follow.

Why *Völuspá* and *Völundarkviða*?

For the purposes of this study I focus on key smithing motifs within two poems, *Völuspá*, “The Prophecy of the Seeress”, and *Völundarkviða*, “The Lay of Völundr”. These

¹ For a definition of “Old Norse”, see Orri Vésteinsson (2005: 7). As a linguistic term, Old Norse is somewhat inaccurate: there is no “Middle Norse” or “Modern Norse” (Orri 2005: 7). “Linguists use the term ‘Norse’ or ‘Old Norse’ to describe the common language of Scandinavian peoples (apart from the Sami) until the emergence of the separate languages of Swedish, Danish and Norwegian in the late Middle Ages” (Orri 2005: 7). Old Norse most generally applies to “all the Germanic peoples of Scandinavia and their colonies in the British Isles and the North Atlantic. In the context of the Viking Age we often find ‘Norse’ used as a description of anyone of Scandinavian origin” (Orri 2005: 7; cf. Crumlin-Pedersen 1997: 16-7).

poems are contained within the so-called *Poetic Edda*.² I have chosen to focus on these two poems for several reasons. My more general studies of smithing motifs in the Old Norse corpus and the Old English corpus have led me to appreciate the fundamental importance of how these motifs are understood in these two poems. *Völuspá* and *Völundarkviða* exhibit some of the most detailed and comprehensive information on smithing motifs out of the poems contained in the *Poetic Edda*. Moreover, as I will now briefly outline, these two poems are arguably amongst the oldest and most comprehensive narratives in the *Poetic Edda*. In the following pages I will first summarize *Völuspá* and discuss how this poem can be dated. I will then summarize *Völundarkviða* and discuss how that poem can be dated.

Texts and contexts of *Völuspá*

Völuspá is the first poem in the *Poetic Edda*. This poem recounts the story of the Norse cosmos from creation through to destruction and re-creation. The form of the poem is a monologue, a sequence of visions recounted by a prophetess who is supposedly being interrogated by Óðinn. This prophetess tells of the proto-giant Ymir and the creation of the universe by Óðinn and his two brothers. She tells of the ordering of the universe and the establishment of the Æsir's (i.e. the gods') first buildings and forges and workshops, along with tongs, tools and precious treasures of gold. The prophetess tells of the arrival of three powerful female giants from the *Jötunheimar*, "Giant-lands". She recounts the creation of dwarfs and humans, and the appearance of Yggdrasill, the world-tree, and the three Norns. The prophetess tells of the first war, between the Æsir and the Vanir, and of the death of Baldr. She tells of a place called Járniðr, "Iron-wood", in which *in aldna*, "the old one", gives birth to or raises creatures in the shape of trolls. Finally, the prophetess describes the apocalyptic battle between the gods and their enemies and the ultimate destruction of the universe. She concludes with a description of the post-apocalyptic hall at Gimlé along with a select group of survivors. The poem cuts off abruptly with reference to yet another impending apocalyptic cycle.

The extant manuscripts show that this form of the *Völuspá* poem was in circulation in the thirteenth century. Using evidence from the three chief extant manuscripts that contain

² The *Poetic Edda* is also known as the *Elder Edda* or as *Sæmundar Edda* (i.e. *The Edda of Sæmundr*). This last title has its origins with the seventeenth-century bishop Brynjólfur Sveinsson who inaccurately attributed this work to the early twelfth-century priest Sæmundr Sigfússon. Brynjólfur also closely associated the *Poetic Edda* with *Snorra Edda*, hence the application of the term *Edda* (Gunnell 2005: 82-3; Lindow 2002: 12).

elements of *Völuspá*, however, it is possible to determine earlier dates for generally similar forms of the poem.³ First, the *Codex Regius* (R) vellum manuscript contains the most complete and reliable version of *Völuspá* and dates to c. 1270. Second, a less reliable and only partial version of the poem is preserved in the Icelandic *Hauksbók* (AM 371 4^o). H has been variously dated from c. 1302-1310 (Stefán Karlsson 1964 qtd. in Dronke 1997: 61), and “hardly later than 1330” (Bugge 1867: xxii) and to the mid-fourteenth century (Sverrir Tómasson 1993: 228-31).⁴ Third, as Ursula Dronke points out, “[t]wenty-eight stanzas from *Völuspá* are cited, wholly or in part, in the text of *Gylfaginning* in the *Snorra Edda*” (1997: 61). The earliest manuscripts for *Snorra Edda* date to c. 1300-1325 (Dronke 1997: 61). Snorri Sturluson, however, wrote *Gylfaginning* c. 1221-30 (Dronke 1997: 64; Guðrún 2001: 5). Thus some written form of *Völuspá* was likely circulating in the early thirteenth century at the latest. Dronke also points out that R, H and *Gylfaginning* uniformly preserve interpolation errors in stanza 4 (ll. 4-10) and in stanzas 10-16 (Dronke 1997: 63-4; cf. Sigurður 1978: 25-6).⁵ This clearly establishes an earlier source for these errors and manuscripts. *Gylfaginning*

³ With regards to the dating of these poems, see Bjarne Fidjestøl’s monograph on *The Dating of Eddic Poetry*. In particular, Fidjestøl points to Kurt Schier’s “useful survey” of how one can delimit the object to be dated (Fidjestøl 1999: 196). Schier’s survey identifies six key “objects”:

1. The age of the poem in its extant form.
2. The age of the poem in its extant form, possible reworkings taken into account.
3. The age of the subject matter.
4. The age of particular parts of the poem, groups of stanzas, stanzas or parts of stanzas.
5. The age of particular details (objects or institutions, words, linguistic forms).
6. The age of genres (e.g. senna, heroic elegy). (Schier qtd. in Fidjestøl 1999: 196)

⁴ The variants between these two manuscripts are substantial in only a few places and I will discuss the implications of these variants in detail when citing the pertinent stanzas.

⁵ H presents a major series of variants in the ordering of stanzas. Differing from R, H inserts stanzas 25, 26, 27, 40 and 41 between stanzas 20 and 21. H also entirely omits stanzas 28-33. Editors have suggested numerous re-orderings of these stanzas (cf. Dronke 1997: 83-6), but R persists as the more reliable reading. Dronke suggests that the author of the manuscript upon which H is based “may have been in the unenviable position of having to reconstruct a text of the poem from no more than its beginning and end sequences and a box of unnumbered and incomplete slips for its centre” (1997: 83). It is difficult to determine whether this, or some other eventuality, contributed to the changes in stanza order in H. It should be observed that the “omission of the death of Baldr leaves lines in H without context. [...] The omission of Baldr’s death cannot have been an intentional characteristic of any well established oral version of the poem, and it is difficult, indeed, to imagine the omission occurring even in a casual oral recitation” (Dronke 1997: 83).

In general, the interpretation of causal relations between many stanzas in the narrative of *Völuspá* is difficult because it is unclear whether or not the stanza order is in fact reliable. Snorri’s interpretation of the *Völuspá* narrative in *Gylfaginning* can appear as an attempt to present this material as one coherent narrative that follows a clear set of sequential events. *Völuspá* is, however, more accurately a collection of different and sometimes contradictory versions of one and/or multiple narratives (Dronke 1997: 25-33; McKinnell 1993: 713-4). Some scholars have nonetheless suggested causal interpretations of creation and crafting motifs across the narrative of *Völuspá* (Hedeager 2001: 500; Hines 2003: 34-5; Mundal 2002: 185-95). This methodology, however, depends upon causal relations between actions in stanzas that may, in fact, not be part of the narrative of *Völuspá* (cf. McKinnell 1993: 714; Sigurður 1978: 25-6). This is not to say, for example, that the list of dwarf names

also generally follows H much more closely than R, but R appears to preserve a more reliable and accurate version of *Völuspá* than H. Thus Dronke suggests that there must have also been an earlier version of H which Snorri used, but that this earlier version of H must also itself have been based upon a flawed transcription and/or interpretation of an earlier version of R (1997: 65). In short, there is fairly conclusive evidence for two prior manuscripts of H and two earlier manuscripts of R. The earliest of these hypothetical manuscripts (which was presumably an antecedent form of R) may reasonably be assigned to c. 1200.

A recognizable form of *Völuspá* can also be dated earlier than c. 1200 with some degree of confidence. It is important to note, however, that any argument based upon oral forms and modes of transmission is speculative and fraught with difficulties.⁶ Moreover, as Joseph Harris points out, it is difficult to take into account all the possible variables that are involved in Old Norse contexts: the *Poetic Edda* is not one homogeneous text, but rather it preserves a great variety of “styles, dates, and provenances” (Harris 1983: 224; cf. Gunnell 2005: 93). In the centuries immediately preceding the creation of the *Codex Regius* manuscript, the poem now known as *Völuspá* likely went through several “different types of composition and transmission” (Harris 1983: 233).⁷ Nonetheless, as Dronke points out, several skaldic verses show some knowledge of the general narrative of *Völuspá* (1997: 65 fn. 7).⁸ While such general knowledge is not necessarily decisive in determining earlier forms

(stanzas 10-16) and the creation of the race of dwarfs (stanza 9) do not belong, thematically and contextually, to the general Old Norse mythological narrative as it is preserved in the corpus (cf. Hermann 1996: 65). It is, however, important to keep in mind that detailed causal interpretations of the structure of *Völuspá* are in many ways speculative.

⁶ In his extensive study on *The Dating of Eddic Poetry*, Bjarne Fidjestøl concludes his evaluation of previously published methodologies for dating these poems by expressing the following difficulty: “On the one hand, a clear-cut isolation of the content from the form is problematic, and on the other, the complications brought about by a long history of oral tradition raise the question of exactly what the historian of literature wants to date. To the historian of literature the postulated undatability of the Eddic poems as non-fixed texts thus remains a major problem” (Fidjestøl 1999: 192-3). In the studies done by Fidjestøl himself, his findings are “extremely inconclusive” and reinforce his view that several previous studies seem “to lack any solid foundation” (1999: 259, 293).

⁷ Strictly speaking, Harris is not referring to *Völuspá* in this quotation; rather, he is referring to his examination of the eddic poems *Helgakviða Hundingsbana I* and *II*. His “conclusions are offered as applicable only to the poems actually discussed [...] and are meant to be no more than suggestive for Eddic tradition in general” (1983: 211). Nonetheless, Harris’s examination presents a more complicated and accurate picture than is often the case in scholarship on the *Poetic Edda*. In particular, it is important to emphasize the diversity of the poems within the *Poetic Edda* and the diverse ways in which previous forms of these poems may have been composed, memorized, revised and transmitted (cf. Gunnell 2005: 82-5, 93-8).

⁸ On the role of skaldic poetry in the Old Norse corpus, and particularly its reliability as to earlier periods than those of the extant manuscripts, see Magnus Magnusson and Hermann Pálsson’s introduction to Snorri’s *King Harald’s saga* (1966: 21), and also Vésteinn Ólason’s *Dialogues with the Viking Age: Narration and Representation in the Sagas of the Icelanders* (1998: 9, 21, 49, 124-5). See also Fidjestøl’s analysis of the role

of *Völuspá* as we now know it, there is also more compelling evidence. Arnórr jarlaskáld, who composed skaldic verses in eleventh-century Orkney, appears to have known “some earlier apocalyptic poetry” (Whaley 1998: 128). Several verbal and stylistic similarities have been noted in particular between *Völuspá* and stanzas 17 and 22 of Arnórr’s *Þorfinnsdrápa* (Whaley 1998: 128, 225-6). While he also incorporated Christian motifs, Arnórr clearly made precise use of Old Norse mythological motifs and he appears to have “consciously imitated” *Völuspá* on at least one occasion (Whaley 1998: 62). To reiterate, it is clear that skalds composed verses with an awareness of *Völuspá* in the centuries that precede the date of the manuscripts that now preserve these verses. Several scholars have pointed out the difficulty of determining the authenticity and history of these verses, as well as the complexities of how they were composed, memorized, revised, improvised and transmitted in both literate and oral contexts (Gunnell 2005: 93-4, 95-7; Harris 1983: 213-4, 218, 224, 232-3; Turville-Petre 1976: lxvi-lxxiv). With these difficulties in mind, it is conjectural but nonetheless reasonably clear that some earlier and probably oral form of *Völuspá* was in circulation in the early eleventh century at the latest.

Texts and contexts of *Völundarkviða*

Völundarkviða is the tenth poem in the *Poetic Edda*. This poem is generally thought of as partly mythological and partly legendary or heroic in that it appears to involve both mythological creatures (elves, swan-maidens) and humans.⁹ *Völundarkviða* is an interspersed prose and verse narrative about the famously skilled smith Völundr. He and his two brothers are princes of the *Finnar*, a term which is used in the Old Norse sources to refer to the Sámi (or Lapps), an indigenous group of people inhabiting areas of central and northern Norway, Sweden and Finland as well as northwestern Russia. These three brothers travel on skis, hunt and establish a residence together near a lake. They meet three swan-maidens from the south, who are weaving fine linens on the shore. Each swan-maiden marries a brother. The three couples live together for seven winters before the swan-maidens begin to long and ache for something else: they spend a final eighth winter together, and in the ninth winter, while the brothers are out hunting, the maidens fly away to the south. Völundr’s two brothers leave to

of mythological kennings used by skaldic poets in dating material from the *Poetic Edda* and elsewhere (1999: 270-93).

⁹ John McKinnell, for instance, suggests that *Völundarkviða* “offers a bridge between the higher mythological world of the gods, giants and elves, and the lower world of dwarfs and humans” (2005: 87).

search for their mates, one heading east, the other west. Vǫlundr remains alone, hunting bears and smithing seven hundred gold rings. He seems to be anticipating the return of his mate. From this point on in the verses of the poem Vǫlundr is called a countryman of the elves. The Swedish King Níðuðr discovers Vǫlundr's abode and has Vǫlundr shackled in his sleep and brought to his hall. Anxious about Vǫlundr's threatening presence, the queen orders that he be hamstrung and sent to work at an isolated island workshop. Vǫlundr sleeplessly makes precious objects with remarkable speed for the royal family. He has his revenge in two parts. First, Vǫlundr forges three sets of gruesome gifts: silver-gilded bowls from the skulls of the king's two sons, jewels from their eyes, and brooches from their teeth. Second, Vǫlundr seduces and impregnates Bǫðvildr, the king's only daughter. With the aid of a magical device (*vél*) of his own crafting Vǫlundr lifts himself into the sky, declaring that his revenge is complete and appropriate to the harms inflicted upon him.

As is the case with *Vǫluspá*, the most complete and reliable version of *Vǫlundarkviða* survives in the Icelandic *Codex Regius* (R) manuscript of the *Poetic Edda*, dated to c. 1270 (Jón Helgason 1962: 14; Dronke 1997: xi). While the verses of this edition appear to have a much earlier provenance than the manuscript date, the prose likely belongs to a thirteenth-century editor (McKinnell 1990: 3). The only other extant material from *Vǫlundarkviða* appears in the fragmentary AM 748 I 4¹⁰, written in Iceland around 1300-1325. AM 748 I 4¹⁰ contains only a few lines of the prose prologue and therefore preserves no substantial information on earlier manuscripts and forms of the poem itself (Dronke 1997: xi).¹⁰

The lack of extant manuscript evidence for the circulation of *Vǫlundarkviða* before c. 1270 means that we must look to both internal evidence (the vocabulary and structure) and to general representations of the poem (in other texts and in material culture) and draw reasonable but nonetheless speculative conclusions about the possible provenance of the poem.¹¹ Elements of and/or parallels to the *Vǫlundarkviða* narrative survive in several other texts, as well as a few carvings and runic representations from Scandinavia, northern Europe,

¹⁰ Any significant variants are noted in my detailed examination of passages in Chapter 3. Neckel and Kuhn (1962: 116-23) as well as Dronke (1997: 243-54) note alternative scholarly interpretations of the text and its lacunae, and I make note of alternatives where pertinent.

¹¹ While there is relatively convincing evidence of close stylistic imitation of *Vǫluspá* by Arnórr jarlaskáld, there is also skaldic evidence suggesting that previous oral versions of *Vǫlundarkviða* were in circulation several centuries prior to the recording of the poem in the *Codex Regius*. In Þjóðólfr of Hvinir's early tenth-century *Haustlong*, the kenning *grjót-Níðuðr* ("rock-Níðuðr") refers to the giant Þjazi (Faulkes 1998: 32), who is also known in the same poem as the god of skis. This might suggest similar associations of itinerancy and Sámi hunting techniques as are seen in *Vǫlundarkviða*. This association is, however, not as compelling or stylistic as Arnórr's use of *Vǫluspá*.

and the British Isles, dating back to as early as the seventh century (Dronke 1997: 269-75; Gunnell 2005: 93; Jón 1962: 30-52; McKinnell 1990: 12-3; Nedoma 1990: 129-39). As the primary focus of this study is an examination of key smithing motifs within *Völundarkviða*, I will not go into great detail on the many other representations of the narrative of the smith Völundr/Weland. These representations and parallels do, however, help to answer the question of the provenance of *Völundarkviða* as we know it.

Engravings and carvings of the Völundr narrative are distributed over both Scandinavia and the British Isles. The concentration of these representations, however, points more towards Northumbria than Scandinavia.¹² John McKinnell points out that the

rich tradition of picture stones from Scandinavia includes only one known image of Völundr (Ardre VIII),^[13] while the smaller and more heavily Christianized corpus of carving from Northumbria can boast five or six (one or two on the Franks Casket^[14] and four Anglo-Norse carvings in West Yorkshire). (McKinnell 2001a: 333)¹⁵

The Old English poem *Deor* refers to Völundr's enslavement by Níðuðr, and Bǫðvildr's abandonment by Völundr (Dronke 1997: 270-1). Artefacts of iron, steel, gold and silver attributed to the legendary skill of Völundr also appear in the Old English poems *Beowulf* and *Waldere*, and in the Latin Germanic epic *Waltharius* which probably dates to the ninth century (Dronke 1997: 270). In both his prose and verse renderings of Boethius's *De Consolatione Philosophiae*, King Alfred (d. 899) "without any evident reason" inserts a brief contemplation on the location of the bones and skill of "the wise Weland", concluding that the skill of this smith may never be taken from him (Dronke 1997: 271; cf. Ellis Davidson 1958: 145). An Old English charter of 955 locates *Welandes smiððe*, "Weland's smithy", in the remote Berkshire Downs, by the ruins of a Neolithic long barrow and tomb near the Uffington White Horse in modern Oxfordshire (Dronke 1997: 259; Kemble 1964: v. 322, ll. 23). Nearly 800 years later, in 1738, Oxford Antiquarian Francis Wise made the following observation of this location, then known as "Wayland's Smithy":

¹² The prose prelude and stanza six of *Völundarkviða* locate Níðuðr as king of the Níárar in *Svíðióð*, "Sweden" (Neckel and Kuhn 1962: 116, 118). Arguments for situating the kingdom of Níðuðr within a specific district in Sweden have, however, proven untenable (cf. Dronke 1997: 309).

¹³ This stone is from Gotland, Sweden and dates to the middle or late eighth century (Dronke 1997: 271; Nedoma 1988: 27-9).

¹⁴ The Franks Casket originates from late seventh-century or early eighth-century Northumbria (Dronke 1997: 271). For some descriptions and interpretations of the Franks Casket, see Hinton (2003: 268-9, 281-2) and Howlett (1997: 275-84).

¹⁵ These carvings from west Yorkshire are estimated to be from the tenth century (Dronke 1997: 271).

All the account which the country people are able to give of it is ‘At this place lived formerly an invisible Smith, and if a traveller’s Horse had lost a Shoe upon the road, he had no more to do than to bring the Horse to this place with a piece of money, and leaving both there for some little time, he might come again and find the money gone, but the Horse new shod.’ (qtd. in Ellis Davidson 1958: 147)¹⁶

H. R. Ellis Davidson further observes that, when “Weland’s Smithy was excavated in 1921, two iron currency bars of Iron Age date were found buried inside the chamber” (1958: 147). The evidence summarized in this paragraph does indeed show a remarkable concentration of representations of the Weland/Völundr figure within the region around modern-day Oxfordshire and Yorkshire.

The vocabulary of the poem may also suggest a Northumbrian connection. Several rare words are used to describe Völundr’s artisanal creations, and it appears that these words were not well understood in thirteenth-century Iceland. We need to understand these words (or at least appreciate why they might have been misunderstood by the scribe) in order to understand the role (and provenance) of smithing motifs in the poem.¹⁷ Focusing on the lexical and metrical evidence within *Völundarkviða*, McKinnell notes strong correspondences to Old English (1990: 2-5). He suggests that

Some of this evidence seems strong, while other parts of it are extremely uncertain, but taken as a whole it amounts to a strong case for English influence of some kind on the vocabulary and (in one instance) the metre^[18] of *Völundarkviða*. In theory, this might be accounted for by any one of four explanations:

¹⁶ This is from a “Letter to Dr. Mead concerning Antiquities in Berkshire, Oxford” (1738: 37).

¹⁷ I discuss these words in detail in Chapter 3. Of particular importance as smithing motifs are the following *hapax legomena* that appear only in *Völundarkviða*: *lindbaugr*, “rings [threaded on a bark-fibre rope]”, *brjóstrkinglar*, “brooches”, and *iarnasteinar*, “jewels, precious stones”. Also, the compound *gimfastan* does not appear elsewhere in the Old Norse corpus and has proven enigmatic to both the scribe/author as well as to scholars. McKinnell suggests emending to *gim fastan* and interpreting as “firmly-held gem” (1990: 2). All these terms show strong Old English influence.

On another note, these terms refer to specific objects and, in turn, crafting techniques that may have become codified in specific compounds that were no longer understood properly at the time when the current forms of the poems were composed:

Details and poetic expressions that have acquired fixed and/or formulaic status may, however, often survive intact. This needs to be borne in mind when considering, for example, references in the eddic poems to archaeological objects that would not necessarily have been known to the scribes, such as the *brímkálkr* (‘frosted crystal goblet’) and the damascened sword mentioned in *Skírnismál* 37 and 23. (Gunnell 2005: 93-4)

I discuss the role of these terms in *Völundarkviða* in Chapter 3 below (page 214 and following).

¹⁸ McKinnell discusses potential connections between *Völundarkviða* and Old English metre in his article (2001a: 333).

1. Translation from an English source.
 2. The use of English vocabulary by a Scandinavian poet to give an impression of the exotic.
 3. Composition in a dialect area influenced by Old English.
 4. Composition in Scandinavia by an Englishman.
- (McKinnell 1990: 4-5)

McKinnell convincingly rules out all possibilities except for the third. He concludes that “the poem probably originates from a Norse-influenced area of England” (1990: 11). The conclusion that *Völundarkviða* was composed in Northumbria by an Old Norse poet who was influenced by Old English is speculative but reasonably sound.

McKinnell also points out, however, that the poem shows substantial Old Saxon influence (1990: 7-9). With regards to this Old Saxon influence it is important to mention briefly the late thirteenth-century Norwegian *Piðreks saga af Bern*. This narrative contains a section known as *Velents þáttur* which details the life of Velent the smith. Here, Velent is described as the son of the giant Váði from Sjælland (Eastern Denmark). Velent apprentices as a smith with two dwarves in a mountain named Kallava. After killing these dwarves, Velent seals himself, his treasure and tools in a hollowed-out tree and ends up washing ashore in Jutland (Western Denmark). Once there, Velent works for some time with king Niðungr, who rules over a region called Þjóð (Guðni Jónsson 1961: 89-90). The king and the smith ultimately have a falling-out. As happens in *Völundarkviða*, so too in *Piðreks saga af Bern* Velent is hamstrung and enslaved by the king, but the smith enacts his revenge by turning the king’s sons’ skulls into dinnerware and impregnating the king’s daughter. Velent escapes by air with a pair of wings he created, and he returns to Sjælland.

Old Saxon was spoken in northwest Germany and southern Denmark from the eighth century through to the twelfth century. This Old Saxon influence that McKinnell identifies could correspond to the topographic situation of Niðungr’s kingdom on the (perhaps southern, i.e. Saxon) Jutland peninsula in *Piðreks saga af Bern*. This topography corresponds with the information from the prologue of *Piðreks saga af Bern*. Here it is said that *þessi saga er ein af þeim stærstum sögum er gervar hafa verit í þýðverskri tungu* (Guðni 1961: 3), “this saga is one of the longest stories that has been made in [the] German language.” The prologue claims that there are many variants of the story told in southern Italy, Lombardy, Venice, Swabia, Hungary, Poland, Russia, Vinland (North America), Denmark, Sweden, *um allt Saxoniam*, “in all of Saxony”, and in the land of the Franks and in western France and in

Spain (Guðni 1961: 3; cf. Haymes 1988: 3). The prologue also claims, however, that Norsemen have collated many parts of the story. But the proper credit goes to the people of Saxony:

Þessi saga er saman sett eftir sögn þýzkra manna, en sumt af þeirra kvæðum, er skemmta skal ríkum mönnum ok fornort váru þegar eftir tíðendum, sem segir í þessari sögu, ok þó at þú takir einn mann ór hverri borg um allt Saxland, þá munu þessa sögu allir á eina leið segja, en því valda þeira in fornu kvæði. (Guðni 1961: 4)

This saga is assembled from the stories of German men and some of it comes from their verses, which were composed to entertain great men, and which were composed long ago, soon after the events that are told here. Even if you were to take one man from each town in all of Saxony, they would all tell the story the same way, and this is because of their old songs. (Haymes 1988: 3)

The credibility of this information needs to be scrutinized, particularly in light of the conventional methods for creating an illusion of authenticity in later sagas. Even though Vésteinn Ólasson's monograph focuses primarily on the study of the sagas of the Icelanders, his arguments still pertain quite helpfully to analyzing this prologue as well as the *ethos* (particularly of the verses) and reliability of a Norwegian saga like *Piðreks saga af Bern* (Vésteinn 1998: 9, 21, 49, 124-5).¹⁹ While the information of this prologue may be unreliable in some details, it nonetheless presents yet another suggestive piece of evidence that the narrative of *Völundarkviða* may have also been influenced by sources from southern Jutland and by the Old Saxon language. McKinnell clearly identifies that

there is no reason why [the Old Saxon influence] should not have been exerted on a poet in England by an Old Saxon source. Indeed, this is one of the few explanations which can satisfactorily explain the fact that the poem shows both Old English and Old Saxon linguistic features. (1990: 9)²⁰

The composition of *Völundarkviða* likely dates from c. 900 at the earliest, and McKinnell suggests tenth-century or eleventh-century Yorkshire as a tentative place of origin for the

¹⁹ The prominent role of Saxony and Old Saxon in relation to the source material for *Piðreks saga af Bern* and *Völundarkviða* should be kept in mind, particularly in relation to potential connections to the examination of *Járnviðr* in my second chapter.

²⁰ It should also be noted that Old Saxon manuscripts of *Heliand* and *Genesis* were circulating in Anglo-Saxon England (Doane 1991: 9, 11-2). Some of these texts may have actually been intended to have been read in Old Saxon, and there is evidence of at least one Old Saxon poet (as well as a Saxon sword) in King Ælfred's court during the mid-ninth century (Howlett 1997: 493-7). (My thanks to Richard Shaw for sharing his research on John the Old Saxon.)

poem (1990: 12-3).²¹ According to McKinnell, this strong influence from Old English vocabulary “had led to some misunderstanding of the text by thirteenth-century Icelanders” (McKinnell 2001a: 332). I will discuss the specific interpretations of this vocabulary in my final chapter.

In summary, we know for certain that *Vǫluspá* and *Vǫlundarkviða* appear in the *Codex Regius* c. 1270 and that *Vǫluspá* was a key source for Snorri when he composed *Gylfaginning* c. 1225. We also have reasonable grounds for speculating that a relatively similar oral form of *Vǫluspá* was in circulation in the eleventh century and, possibly, during the late tenth century. We also have reasonable grounds for speculating that *Vǫlundarkviða* was composed in tenth-century Northumbria by an Old Norse poet who was influenced by both Old English and Old Saxon. It is clear that several key smithing motifs (in the form of compound words that appear nowhere else in Old Norse) in *Vǫlundarkviða* were of earlier origin and were not understood by the poet/scribe. In light of this information about the provenance of these poems, it is clear that the smithing motifs in *Vǫluspá* and *Vǫlundarkviða* date, at the latest, to the thirteenth-century. It is reasonable (if not also necessary) to conjecture that these motifs were used in the composition of the poems as early as c. 1000.

Survey of metallurgical processes associated with forges and furnaces

This project focuses on the forges and furnaces²² (and associated techniques) used for ferrous and non-ferrous metalworking before the introduction of the blast furnace to northern Europe in c. 1200. These techniques were used during Roman times and continued to be used in eighteenth-century and nineteenth-century Scandinavia (Espelund 1997: 47-8, 52). Metalworking practices did evolve, but drastic changes in these practices in Northern Europe did not occur until the thirteenth or fourteenth centuries, with the introduction of blast furnace technology and cast iron (Rostoker and Bronson 1990: 101). This continuity in metallurgical methods is helpful in that it gives a fairly clear (albeit general) picture of the techniques and designs that were employed in medieval Scandinavia. It also establishes that later processes associated with the blast furnace do not pertain to the smithing motifs of *Vǫluspá* and *Vǫlundarkviða*.

²¹ Several close correspondences in vocabulary and content between the tenth-century Old English poem *Deor* and *Vǫlundarkviða* have also been noted (cf. McKinnell 2001a: 333-4; Dronke 1997: 276-8).

²² In brief, a forge is a charcoal fire in a small open pit with or without bellows. A furnace is typically a shaft of clay and stone rising from a pit in the ground or a shaft constructed into a section of earth, essentially buried but with access to the base provided by a change in the elevation of the surrounding earth.

I will now provide an overview of the smithing techniques that are appropriate to Scandinavia and, more broadly, the areas that had Norse colonies in the early medieval period. I will summarize the archaeometallurgical evidence for the types of processes, forges and furnaces used immediately before, during and immediately after the Viking Age in Scandinavia.²³ I will start with a very brief overview of the categories of technical smithing processes used during the Viking Age in Scandinavia. The reader may find it helpful to refer back to this brief overview throughout the body of this dissertation. Following this overview, I will provide a more detailed survey of these same categories, including information on the main types of furnaces and forges as well as the associated techniques that were used during this period.

Overview of archaeometallurgical evidence and categories

Metalworking can be categorized generally as a two-fold process:

A) **Refining**: it was necessary to refine²⁴ naturally occurring ores (and sometimes recycled artefacts) into an appropriate alloy in order for them to be cast in moulds or worked into currency bars.

B) **Working**: malleable or refined alloys of various metals required appropriate methods of heating and/or shaping in order to produce finished artefacts.

During the Viking Age in Scandinavia, three chief categories of techniques were used to achieve the above goals:

1. **Casting and non-ferrous working**: these techniques were only used for alloys of metals with a melting point lower than about 1100°C, i.e. copper (1084°C), gold (1064°C) and silver (962°C). For casting, a crucible or small cup (sometimes with a lid) held the metal as it liquefied. The crucible was likely heated in a small open forge or perhaps a furnace, powered by bellows and charcoal. The crucible provided an environment in which the liquated metal could be refined into a desirable alloy. The molten metal was then poured into a mould either for a finished artefact or for an ingot used in

²³ There is some discrepancy in how the Viking Age is defined by scholars of literature, linguistics, history, archaeology and anthropology (Brink 2008: 5; Byock 1990: 2; Roesdahl and Wilson 2003: 20). Because this project includes research from all these fields, I use the Viking Age in its most inclusive sense, referring to the period c. 700-1100.

²⁴ This refining process is sometimes called smelting (when it applies to iron usually) or cupellation (when it applies to the separation of noble metals from base metals).

trading. Various other techniques (such as granulation) also used these metals in their molten states (cf. Tylecote 1987: 85-6).

2. **Smelting:** this technique used an enclosed furnace to create an environment in which pieces of metallic ore could be reduced and refined into a workable alloy. Because iron has a melting point of about 1538°C, it was generally impossible to melt in Viking-age furnaces. There was, therefore, no cast iron made in Viking-age Scandinavia. Instead, a two-stage process was used to produce wrought iron. First, a smelting furnace was used to smelt many small pieces of iron ore into a single lump, called an iron bloom. At high temperatures the waste inclusions within this iron bloom liquated, leaving a porous mass of iron, called sponge iron. The sponge iron was then removed from the furnace and immediately hammered at high temperature. This forced out most of the remaining slag inclusions and welded together the open pores, creating a malleable and solid piece of wrought iron.
3. **Blacksmithing:** wrought iron was repeatedly heated and worked using hammer, tongs and an anvil-stone. Finished artefacts were produced in this manner by using an open forge powered by charcoal and bellows. These forges could reliably produce temperatures above 1100°C, reaching the temperatures necessary to weld pieces of iron together (Darrell Markewitz, pers. comm.).

1) Casting and non-ferrous working

Gold, silver, copper and lead were the only metals that were cast in early medieval Scandinavia. These metals are relatively rare, non-reactive, ductile and malleable, especially in the case of gold. Crucible fragments show evidence that alloys of all these metals were refined and cast using crucibles. It is unlikely that any of these metals were extracted from ores in Scandinavia.²⁵ They were all imported (either as currency bars or as artefacts) and then recycled, reworked and modified into finished artefacts (Callmer 2008: 446-7; Ljungkvist 2008: 189; Valk 2008: 485-8).

²⁵ For a discussion of the earliest evidence of native silver ore mining in Scandinavia see Moseng (1992: 45-72; cf. Prescott 2000: 214). Moseng concludes that the single sentence of evidence from the *Historia Norwegiae* (c. 1200) is not sound and that the earliest reliable evidence dates to the sixteenth century.

Apart from evidence of burning associated with crucible shards, there is little evidence to show what kind of forge the crucibles were placed in during the Viking Age in Scandinavia. We do know that “burning charcoal maintains a temperature of 800°C without an artificial air supply. The temperature increases to 1300°C when air is supplied through a single pair of bellows or a blow-pipe” (Duczko 1985: 26). Thus open forges would have been suitable for non-ferrous work. Archaeological evidence shows that shallow pits were used as open forges, e.g. Ribe in Denmark (Jensen 1991: 31) and Hurdal Prestegård in Norway (Bergstøl 2002: 77-8).

During the Migration Period and Viking Age in Scandinavia ceramic crucibles were made from clay deposits and then used in open forges to smelt precious and other non-ferrous metals. The crucibles served as essential tools for three reasons. First, they kept the molten metal in a relatively portable device, enabling the smith to directly pour the metal into a mould while it was still liquid. Second, some crucibles, particularly the more enclosed designs, controlled the environment of the metal quite precisely, allowing for more precise reduction reactions to be achieved in the production of specific alloys. There is evidence that substantial experimentation went into the creation of alloys (cf. Hjärthner-Holdar *et al.* 2002: 174-5). Third, a more controlled environment was also, in many ways, a more conservative environment: crucible smelting tends to involve much less waste than is the case with, for instance, iron smelting. Particularly with less reactive noble metals like silver and gold, which are also more difficult to acquire than copper and iron, the crucible provided a method of avoiding unwanted loss of the metal within the reactions of a furnace or forge.

Like furnaces, crucibles are almost never recovered intact and it is difficult to reconstruct them from partial fragments (Callmer 2002: 136-8; Hjärthner-Holdar *et al.* 2002: 161; Stilborg 2003: 148; Tylecote 1986: 97-100).²⁶ Crucible shards or fragments are found at many sites, ranging in quantity from only a few kilograms to as much as several hundred kilograms as is the case at major workshop sites like Helgö and Gudme (Hjärthner-Holdar *et al.* 2002: 164-7; Stilborg 2003: 139, 146-51). Based upon the selection of clay used in a crucible and vitrified accretions and colouration on the interior surface of crucible shards, archaeologists are sometimes able to determine the type of metals and temperatures associated with individual crucible shards (Stilborg 2003: 142, 147-8). Where more complete

²⁶ For maps of recently excavated central places and workshop sites for non-ferrous metalworking in Scandinavia, see Hjärthner-Holdar *et al.* (2002: 163) and Myhre (2000: 42).

crucibles exist it is sometimes possible to discern the general shape. Crucible diametres appear to range from 2-8cm and in some cases up to about 15cm (Bayley 1991: 124; Stilborg 2003: 147). Some appear to be closed and pear-shaped, others are open and shaped like thimbles, and some have triangular-shaped rims (Bayley 1991: 123-4). Yet other crucibles have been described by archaeologists as closed egg-shaped or open bell-shaped (Hjärthner-Holdar *et al.* 2002: 179-80). Moulds and tuyeres²⁷ are also found, frequently in association with crucible fragments (Hjärthner-Holdar *et al.* 2002: 179-80; Stilborg 2003: 141). Just as furnaces were repaired and re-used over time, it was clearly an established practice to re-use a crucible several times. Many crucibles appear to have been repaired by the addition of clay to weakening areas. This indicates that some crucibles were used for multiple firings (Stilborg 2003: 148).

The process of transferring the molten contents of a crucible into a mould had to happen within a matter of seconds or the metal would solidify, preventing pouring and a successful casting. Temperatures generally only had to reach about 1000°C to melt the contents (higher temperatures were necessary for some alloys), but it seems most likely that the smith would have heated the contents beyond the melting point so that the metal would not solidify before it could be poured into a mould (Tylecote 1986: 99-100). By the seventh century in Scandinavia and the British Isles many crucibles were used with lids to make it easier to handle them quickly with specifically designed metal tongs (Tylecote 1986: 97-100). In some Scandinavian contexts crucibles appear to have knobs or handles that were probably also used for handling with tongs (Hjärthner-Holdar *et al.* 2002: 165; Stilborg 2003: 148). Some crucibles were apparently even left-handed, clearly made by a specific craftsperson for his/her own use (Hjärthner-Holdar *et al.* 2002: 167).

I will now briefly summarize some of the general information we have on how gold, silver and copper were used in early medieval Scandinavia. Gold was cast in some cases, but it was distinct from copper and silver in that it could be extensively re-shaped and worked without heating. Gold was, however, also very rare. It was often used in gilding, in combination with mercury (Ljungkvist 2008: 189). Objects of solid gold are extremely rare, but where “they do occur, the craftsmanship is often of very high quality. Gold was especially used for filigree and granulation-decorated jewellery” (Ljungkvist 2008: 189).

²⁷ Tuyeres are basically ceramic pipes used to apply the blast of the bellows to the inside of the furnace or forge.

Silver could also be worked and shaped without heat, although not as easily as gold. Evidence shows that Arabic silver in particular began to arrive in Scandinavia in the eighth century. This silver came by trade routes through Russia (Ljungkvist 2008: 189; Yrwing 234). This silver was often in the form of coins and was melted down to form pendants, silver wire, silver-plating and other small items of jewellery. Silver was only rarely used to make larger brooches and bracelets (Ljungkvist 2008: 189).

Bronze (i.e. copper in alloy, usually with tin) “was the most common material for the Viking Age jeweller. It was the material that the ordinary Scandinavians could afford” (Ljungkvist 2008: 189). Many bronze brooches have been recovered from early medieval Scandinavia. Bronze working was a remarkably complex process that demanded several different skill-sets and may have regularly involved collaboration between multiple craftspeople. In his discussion of non-ferrous metalworking (particularly in bronze) in early medieval Scandinavia, Johan Callmer points out that “the production of high quality metal work requires a wide range of different expert knowledge. From Migration Period onward the quality of the products with only a few exceptions is excellent” (Callmer 2003: 348). The production of a prestige bronze brooch, for instance, would have required several different types of knowledge:

- Knowledge of several very special clays and tempering materials (to prepare crucibles and moulds).
- Access to and knowledge of metal alloys.
- Knowledge of how to purify the metal if necessary.
- Knowledge of different sources of heat and how to control them.
- Knowledge of how to calculate the necessary amount of metal for each casting.
- Ability to create an idea for an ornamental brooch and the functional form of the brooch.
- Knowledge of how to make a wax copy and prepare a mould.
- Knowledge of fine smithing work in order to produce a pin and apply it to the back of the brooch.
- Knowledge of post-casting work, removal of seams, polishing, etc.
- Knowledge of gilding and how to handle and use mercury.²⁸

²⁸ This information has been summarized from Callmer’s article (2003: 348).

2) Iron smelting

During the Viking Age in Scandinavia, iron was the only ore extracted from the earth, reduced, refined and worked into artefacts, tools and weapons (cf. Ljungkvist 2008: 189).

Iron is the metal most frequently associated with attestations of the Old Norse word *afl*, “forge, furnace” (cf. *ONP* 2010: s.v. *afl*). In Viking-age Scandinavia iron-working activity is found across a much broader social and geographic range than non-ferrous work (Hjärthner-Holdar *et al.* 2002: 160). “Though it lacked the prestige of gold and silver, iron was the most important metal used in Viking-age Scandinavia, essential for farming, construction, shipbuilding and warfare” (Haywood 2000: 104-5).

During the Viking-age iron ore was found in several forms and locations.²⁹ Terrestrial iron ore was found in the sides of mountains. Meteoric iron may also have been a potential source of iron (Tylecote 1987: 99-100).³⁰ During the Viking Age, however, the “main source of iron was bog iron – nodules of iron oxides and decaying vegetable matter that form in bogs and marshes” (Haywood 2000: 105; cf. Smith 2005: 186-7). Thus, iron was the most readily available and commonly used metal in medieval Scandinavia.

With this relative abundance of sources of iron, all that was needed was “the knowledge of how to use them” (Tylecote 1987: 47). The melting point of iron is too high for anything but a blast furnace to melt iron completely and enable the production of cast iron.³¹ Because blast furnace technology was not yet available during the Viking Age, iron had to be smelted in its solid state, which was accomplished using a combination of the shaft furnace and the open forge.³²

²⁹ As R. F. Tylecote points out, “[u]nlike non-ferrous minerals, iron ores are extremely widespread, iron being the commonest non-gaseous element in the earth’s crust after silicon and aluminium” (Tylecote 1987: 47).

³⁰ Tylecote points out that meteoric iron is malleable and therefore appropriate for being forged into tools and artifacts.

³¹ Tylecote (1971: 53-8) shows in an experiment that it is possible for a two-metre high shaft or slag-pit furnace to produce cast iron, so it is technically possible that iron was accidentally melted prior to the introduction of the blast furnace. Likewise, Markewitz’s experiments show that it may have been possible for Viking-age furnaces to produce some cast iron (Markewitz 2009: Iron Smelt Data – Experimental Iron Smelts 2001 to November 2008). Whether or not this might have been done intentionally or as part of a regular practice is unclear. It is clear that as the carbon content of iron increases, the melting point decreases: thus, a carbon content of 1.7 to 4.5% could cause iron to melt at temperatures of around 1150-1200°C. It was, however, generally undesirable to produce cast iron in this period. Because of its high carbon content, cast iron would have required additional decarburization in order to be workable, whereas wrought iron (because of its lower carbon content) could be immediately worked after the smelting process (cf. Tylecote 1976: 66-7; Tylecote 1986: 192-4; Hjärthner-Holdar *et al.* 2002: 175-7).

³² Tylecote points out that the first textual documentation of a blast furnace in the west comes from near Genoa, Italy, around 1464 (1987: 328). This technology first came into use in about the fifth century B.C. in China. However, recent archaeological research shows that blast furnaces were operational as early as the thirteenth century in Sweden (Lapphyttan), Switzerland (Dürstel) and Germany (Märkische Sauerland) (Abdinghoff *et al.*

The shaft furnace:

The shaft furnace is a shaft about 25cm to 50cm in diameter rising about 30 to 60cm from the ground, usually above a small bowl or pit (Martens 1978: 30; Tylecote 1976: 64-5; Tylecote 1987: 151-3).³³ Alternatively, some shaft furnaces appear to have been constructed down into the ground, with access to the base of the furnace provided by a change in elevation (Espelund 1997: 52-3; Wallace 2006: 59-62). Shaft furnaces had one or more tuyere holes at their base, allowing for active air intake from bellows or, alternatively, only passive air intake.³⁴ At its base a shaft furnace may also have an opening or tapping hole (also called a tapping arch) from which liquated waste could be removed into an external slag pit (Martens 1978: 33; Tylecote 1987: 153).³⁵ This method of tapping out slag from the base of the furnace was an innovative modification to earlier, Roman-era slag-pit furnaces (Dieterle 1987: 7; Myhre 2000: 40).³⁶

The process of using a shaft furnace typically involved placing layers of fuel (usually charcoal) and small pieces of ore³⁷ into the shaft and allowing those layers to burn deeper into the furnace over time while also “charging” the top of the furnace with new layers of fuel. As

2009: n.p.). This last site in Germany contains the oldest known blast furnaces in Central Europe, dated to c. 1205-1300. As I discuss in my first chapter, the manuscript dates for the attestations of *afl* start c. 1200 and proceed to c. 1700, so it is perhaps possible that information on blast furnaces could pertain to some of the later attestations. However, all of these attestations clearly have earlier origins than the extant manuscripts, in some cases by several centuries. Several other techniques and furnaces were widely used during the Viking Age and consistently into the nineteenth century (Espelund 1997: 47-51). The focus of this project is, therefore, on technologies pre-dating the introduction of the blast furnace and cast iron to Scandinavia.

³³ The height here is taken from Darrell Markewitz’s reconstructive experiments, in which archaeological evidence of shaft furnaces seems to suggest an average around 60cm in height and some 30cm in diameter (Markewitz 2007: Overview of experimental variables). These dimensions correspond to the finds at L’Anse-aux-Meadows (Wallace 2006: 60-2).

³⁴ Passive air intake would likely have prohibited reaching the temperatures attainable with the help of bellows. There is, nonetheless, some consideration amongst archaeologists for passive-air designs. Several experiments have been done using passive-air designs in association with the Heltborg Museum in Denmark (Markewitz 2008: Iron Smelting Seminar at Thy).

³⁵ The slag-pit furnace preceded the shaft furnace and was conceptually similar but with a few substantial differences: the shaft of the slag-pit furnace was much taller (prohibiting the removal of the bloom from above) and there was no tapping hole (the slag accumulated in a pit at the base of the furnace instead of outside the furnace). This meant that once the slag-pit became full, the entire shaft had to be removed, relocated and re-attached to a newly dug pit before another sequence of ore could be refined (Tylecote 1987: 154). This process seems cumbersome and involved extensive repairs. The slag-pit furnace did migrate into Scandinavia but it seems to have become obsolete (in favour of the more permanent shaft furnace) in the Roman and Migration Periods (Tylecote 1987: 155-6).

³⁶ See Stenvik (2003: 124) for a photo of a slag pit belonging to an early and large shaft furnace from the Roman Iron Age in Norway. This seems to be a transitional furnace between the slag-pit design and the shaft furnace: it was permanent, allowed for emptying from the base, and used wood more than charcoal. Later shaft furnaces in these areas were smaller and show evidence of lower production (Stenvik 2003: 123-4).

³⁷ The pieces must be small enough to allow relatively homogeneous reactions with the atmosphere in the furnace throughout each piece.

the ore travels down the temperature increases, providing a sequential process in which removals and exchanges may occur. First, water is removed by a process sometimes called roasting the ore.³⁸ Then iron carbonates are decomposed. At about 750°C chemical reduction reactions begin, first converting higher iron oxides (Fe_3O_4 and Fe_2O_3) to lower (FeO) (Espelund 1997: 53-4; Tylecote 1987: 152; cf. Rostoker and Bronson 1990: 89-99). At about 900°C carbon begins to go into solution with the iron. Full equalization of the carbon content of the iron is desirable but rare: usually the result is a “heterogeneous mixture of high-carbon and low-carbon areas with an average carbon level which is low” (Tylecote 1987: 152).³⁹ With an average low carbon level the iron itself is solid at 1200°C but the slag (i.e. waste inclusions) “becomes molten and runs away leaving a solid iron bloom with some porosity” (Tylecote 1987: 152; cf. Espelund 1997: 53-4; cf. Rostoker and Bronson 1990: 102-3). The process is complete when the bottom of the furnace is full of slag, bloom and charcoal. Because this furnace design can allow for slag to be removed from the base, appropriately constructed shaft furnaces could have been re-used.⁴⁰

When the reaction is completed, the bloom of porous iron is removed from the bottom or the top of the furnace. At this point the process of iron smelting begins to overlap with the process of blacksmithing (i.e. smelting and working coincide briefly). Ideally, the bloom is immediately hammered so as to fuse the pores that were occupied by slag, creating a solid piece of metal called wrought iron. Upon removal the bloom would ideally be at a temperature suitable for welding the pores rather than just compressing them (Espelund 1997: 55). The blacksmith may have discerned by colour whether this was the case: modern

³⁸ This roasting process was probably also done in advance of preparing a smelt.

³⁹ Examination of furnace remains shows that reactions sometimes went further than this and into higher temperatures, yielding iron carbide (or high-carbon iron, i.e. steely iron) as is the case in the use of blast furnaces.

⁴⁰ My research into modern experiments reconstructing medieval techniques shows that more often than not a furnace would be substantially damaged after a single burn. This may, however, be more of a function of the modern reconstructive techniques and aims than of the medieval situation. See, for instance, Darrell Markewitz’s recent (November 2009 and June 2010) experiments for detailed photos and comparisons of furnace remains after one firing to archaeological sites (Markewitz 2009: Vinland 3 – November 7, 2009; Markewitz 2010: Vinland 4 – June 12, 2010). After the June 2010 experiment Markewitz, in discussion with archaeologist Kevin Smith, seems to have concluded that archaeological evidence may not preserve the full original thickness of furnace walls: if the walls of these furnaces were built thicker they might have proven more durable for multiple firings, as the archaeological evidence seems to suggest (Markewitz 2010: Vinland 4 – June 12, 2010). Regardless, Markewitz repeatedly points out in his experiments that the base or bowl of the furnace that remains after the experiments may be used as a forge for re-heating the bloom or billet and working it (e.g. Markewitz 2009: Vinland 3). The 2008 experiments at the Heltborg Museum involved re-using furnaces for multiple firings (Markewitz 2008: Iron Smelting Seminar at Thy). Kevin Smith and Darrell Markewitz have also discussed at length experiments involving re-using the same furnace for up to five firings (Markewitz 2007: Smelters and Archaeology – Some Questions).

blacksmiths usually look for an intense yellow or even white glow with some sparking to indicate that a piece is at a suitable welding temperature.⁴¹ The bloom was then hammered, causing the pores to seal and weld together. The bloom was often shaped into currency bars or billets: in Scandinavia blooms were shaped into axe or hoe-shaped bars with sockets for ease of shipping (Tylecote 1987: 253-5). Long flat bars have also been discovered across Scandinavia and England. In Gotland, some of these bars were discovered in connection with the Mästermyr tool chest, and similar bars have been found in major Viking-age trade and production centres like Hedeby and Winchester (Arwidsson and Berg 1983: 17, Pl. 14; Tylecote 1987: 255).⁴²

3) Blacksmithing

Once a bloom of sponge iron had been produced and worked into a solid billet there was still the need to hammer, bend, fold and possibly weld or temper the metal into a consolidated, standardized and workable form. The working of these ingots into currency bars once again involved heating. However, the enclosed spaces of furnaces would be cumbersome to the process of repeatedly inserting and removing sometimes quite large pieces of iron, especially when the smith would only have had a few seconds to work the piece before it cooled and lost its plasticity. The controlled environment of a furnace was no longer necessary during the working process because the iron had already been smelted. Any further need for chemical changes in the alloy at this point could be achieved in the environment provided by the burning of charcoal in an open forge.⁴³ Iron is fairly plastic at temperatures of 700-1250°C (Tylecote 1987: 262). The average open campfire is not capable

⁴¹ Markewitz reproduces a colour chart on his website:

<http://www.warehamforge.ca/ironsmelting/images/heats.jpg>. Hans Schlosser also reproduces this chart and discusses some of the characteristics of working iron at various temperatures (Schlosser 2001: Using the Fire).

⁴² There are several potential generic distinctions between the types of furnaces that were used in medieval Scandinavia (cf. Martens 1978: 27-36). There have been some attempts to clarify a relation between specific types of furnaces and to trace certain types to various geographical and/or historical points of origin. Catalan furnaces, for instance, appear to have developed in close association with a metalworking centre in Spain c. 700-800 AD (Tylecote 1987: 152-4; Tomàs 1999: 225-6). These furnaces tend to produce a rather distinct ball-shaped bloom. It has been suggested that the Catalan design spread both north and south from Spain or the Mediterranean, thereby entering central and northern Europe and Africa (Tylecote 1987: 152-4; Tomàs 1999: 225-6). There is also, however, “sound evidence” of bowl furnaces and iron production in Sweden before c. 1000 BC (Stenvik 2003: 126). This evidence is, as Stenvik says, “astonishing” and several theories have been developed to explain this, including arguments for local and foreign origins for metallurgical techniques (Stenvik 2003: 126-7). Later versions of so-called Catalan-style furnaces were still in use in the eighteenth century in Sweden (Tylecote 1987: 152-4).

⁴³ The chemical composition of the iron could be adjusted slightly by repeatedly heating and cooling to temperatures at which carbon may be exchanged with the iron. The iron could also be physically changed by cold-working the metal with a hammer (Tylecote 1987: 247).

of reaching temperatures higher than about 700°C (Tylecote 1986: 16). However, open forges fueled by charcoal and powered by bellows are capable of reaching temperatures in excess of 1100°C, ideal for working and welding iron as well as melting common non-ferrous metals.

There are other reasons why an open forge was desirable at this stage of working iron. A blacksmith would only be able to promptly work a maximum surface area of 30-60cm² (or roughly 10cm in length on a 3-6cm wide bar) before the metal became too cold to be shaped or welded (Darrell Markewitz, pers. comm.).⁴⁴ Open forges are capable of heating this area sufficiently for shaping and welding: heating a greater surface area would not be worthwhile, since a blacksmith could only work so much at once. Open forges also provide a space in which larger objects (like swords or cauldrons) may be worked without the constraints of furnace walls and chambers (Arwidsson and Berg 1983: 29). Iron alloys also respond relatively well to this type of working, whereas copper alloys, for instance, must generally be cast because they do not respond as well to substantial shaping by hammer and cannot be welded as easily (Tylecote 1987: 247).

Forge-stones with holes for tuyeres were used to shelter the bellows from the heat of the forge, and several of these stones have been found (Bergstøl 2001: 79; Kjærøum and Olsen 1990: 180). Johan Callmer suggests that finds of larger, block-shaped tuyeres seem unnecessarily large for the smaller forges associated with non-ferrous metalworking: “This type of tuyere much better matches a forging milieu” where swords and cauldrons were made alongside smaller items like knives, tools, wire and nails (Callmer 2002: 141; cf. Arwidsson and Berg 1983: 16; cf. Stilborg 2003: 141; cf. Tylecote 1987: 270).

Evidence for the cultural significance of forges, furnaces, crucibles, etc.

Direct archaeological evidence

It is important to note here that we do not have direct evidence of any ornamentation or other features that may or may not have adorned furnaces, forges or crucibles in this period with particular cultural and communal significance. It seems possible that such ornamentation might have existed, given that clay and stone were (in other contexts) regularly adorned and engraved. It also seems possible that no such ornamentation was present on furnaces and crucibles used in Viking-age Scandinavia. We do not have any direct evidence one way or the other. Furnaces, ceramic moulds and crucibles are not well

⁴⁴ The measurements here correspond to the figures given by Markewitz on his reconstruction of Viking Age currency bars (2010: Currency Bar from DARC Iron).

preserved in the archaeological record (Hjärthner-Holdar *et al.* 2002: 161; Martens 1978: 28). An additional problem may be that “excavation techniques frequently left much to be desired”, hampering the identification and preservation of information related to the already scant remains of furnaces (Martens 1978: 27). From analyses of fragments of furnace walls and crucibles it is clear that these structures were often repaired and re-used to the point of collapse. Waste metals and vitrified accretions or burn marks on ceramic fragments are frequently the only evidence which may be analyzed to determine what kind of metals were worked and with what methods and skills (Callmer 2002: 136-8, 141-4).

Forge-stones

The chief exception to this general lack of evidence for ornamentation is that a few forge-stones (the most prominent structures associated with open forges) with ornamentation have been discovered (Bergstøl 2001: 79). Forge-stones were used to protect bellows from the heat of an open forge. These forge-stones can be helpful indicators to the location and significance of forging activities. As Jostein Bergstøl points out, two

decorated forge stones have [...] been found in an Early Iron Age context on a farm called Hov in northern Norway. The name of the farm, as well as the name of the place of the find, Lundhaugen, are cultic names. Together with the forge stones were glass beads, gaming pieces and slag [...]. From this case study, it is apparent that forges were placed on established cultic sites[.] (Bergstøl 2002: 79)

Another decorated forge-stone was recovered on a beach near Snaptun, Denmark, about fifty kilometres south of Århus on the western coast of Jutland. No other medieval remains have been found in association with this stone. The Snaptun forge stone dates to c. 1000 and is by far the most striking of these decorated stones (Kjærum and Olsen 1990: 180). The engraving on the Snaptun stone portrays a male face with a moustache. The upper and lower lips are marked with three to five roughly corresponding pairs of scars, as though they were sewn shut. Scholars agree that this stone likely portrays Loki after his lips have been sewn shut by the dwarf Brokkr in chapter 35 of *Skáldskaparmál* (Faulkes 1998a: 43).⁴⁵ This altercation results from the wagers made between Loki and the dwarfs Brokkr and Eitri who forge the gods' second set of three magical gifts. Thus, although the carving on the Snaptun stone itself

⁴⁵ According to this myth, Eitri and his brother Brokkr make Freyr's golden boar, the gold ring Draupnir, and Þórr's famous hammer Mjöllnir. See Chapter 1 (*afl* 14-21. on page 57 and following) for further details and a discussion of this myth.

does not portray any smithing tools or activities, it does present a functional connection between smithing practice in both a historical location and in the mythical realm: this forge-stone testifies to individuals who used a forge with bellows to work metals and who were consciously aware of some early form of the myth of forging of the gods' gifts three centuries before the extant manuscripts of *Snorra Edda* were made. In Jostein Bergstøl's words, by "picturing Loki on the forge stone, the smith created a link to the mythic universe" (2002: 79). "The smiths created a link to the cosmology by integrating the myths in the production process. In this way, magic and religion were important elements in labour and technology" (Bergstøl 2002: 77). There is no such evidence of any ornamentation that may elucidate the cultural significance of furnaces or crucibles.

Visual depictions of smithing

Period-specific depictions of furnaces can clarify what specific types of furnaces and techniques were being used and with what cultural significance. This is certainly the case with a depiction of crucible smelting on an Egyptian tomb from c. 1500 BC (Tylecote 1976: 19), and a depiction of a shaft furnace in the process of iron smelting on a vase from c. 500 BC Greece (Tylecote 1976: 45). Several pictorial depictions of smithing tools and activities exist from Viking-age Scandinavia and the British Isles. I will now briefly examine these representations.

The eighth-century Northumbrian Franks Casket is a carved piece of whalebone (Dronke 1997: 283). One half of a panel portrays a part of the narrative of Vǫlundr/Velent/Weland the smith. The smith appears to have tongs in his left hand, with which he holds an item (which may be a head or skull⁴⁶) above what appears to be an anvil. A body appears beneath the anvil. The smith is exchanging a cup or a ring with a female figure (likely Bǫðvildr).⁴⁷ One hammer appears at about a thirty-degree angle, the head above the anvil, and another hammer appears suspended vertically above the anvil, head upwards. To the immediate right of this scene, a third human figure (perhaps a female) appears holding something that looks like a basket or flask, or a flask in a basket.⁴⁸ To the right of this figure a fourth human figure (a male) appears with four long-necked birds: this male figure appears to have his hands around the necks of two of the birds. There do not appear to be any details of

⁴⁶ See Ellis Davidson (1958: 146).

⁴⁷ See Ellis Davidson (1958: 146) and Dronke (1997: 270).

⁴⁸ See Dronke (1997: 270).

a forge, furnace, fire or bellows in this scene, although the domed structure with a carved interior in front of Vǫlundr's face remains unexplained and could be suggestive of a furnace, forge or forge-stone.

The Ardre VIII stone in Gotland dates to the ninth century (Magnus 1976: 96; Nordanskog 2007: 309). This stone depicts a bird figure and a female figure (presumably Vǫlundr and Bǫðvildr) in association with an enclosed space which appears to contain two pairs of tongs⁴⁹ in a horizontal position and two hammers that appear to be suspended from the ceiling, heads down. It seems most likely that this space would have been identified as a smithy (Dronke 1997: 271) but a curious suggestion has been made that it is parallel to similar structures in other picture stones that are burial mounds (Stephany 2010: 16). Although the structure does not appear to be a mound, it does seem to have some sort of symbolic significance: the top appears as an animal of some sort, with ears and snout at the left (over the opening to the space) and projections running the length of the spine.⁵⁰ A similar enclosed space appears on the Hunninge stone, but there does not appear to be any symbolic animal shape in this case. The enclosure on the Hunninge stone contains two men who appear to have bows and arrows, one cow, and other unidentified shapes. The enclosed space seems to represent some sort of building or residence, and this may indicate that the enclosure on the Ardre VIII stone is meant to indicate a workshop edifice. In the Ardre VIII stone, two headless bodies lie to the right of this enclosed space. Arguments linking this scene to other portrayals and narratives of Vǫlundr suggest that these figures are the two decapitated sons of king Níðuðr (Dronke 1997: 271). There does not seem to be any depiction of a forge or furnace on the Ardre VIII stone.

The Ramsund carving (Sö 101) dates to c. 1000 Sweden. It depicts Reginn, decapitated, with the smithing tools which he presumably used to forge swords for Sigurðr (Sawyer 2000: 126). Each of the depictions of tools is readily recognizable: there is an anvil, tongs, a hammer and bellows.⁵¹ There is also a depiction of what appears to be a fire, with which Sigurðr roasts the dragon heart. Although the tongs are in close proximity to the fire,

⁴⁹ Dr. Christopher Andreae has suggested to me that these "tongs" could be billets of iron in the process of being folded (pers. comm.). The appearance of tong-like images on several stones, however, suggests that these are most likely tongs. The alternative interpretation of billets is nonetheless worth mentioning, particularly since it is appropriate to a blacksmithing context.

⁵⁰ This shape could share some affinities with the tenth-century carved hogback stones, which frequently depict beast forms. These hogback stones are not well understood but may have associations with churchyards (Haywood 2000: 97-8).

⁵¹ Darrell Markewitz has based a practical reconstruction of bellows and forge upon the Ramsund carving and the Hylestad portal (2008: Bellows Reconstruction 2).

the bellows are not closely associated with the fire. The fire appears to be used to roast the dragon Fafnir's heart and is not associated with the working of metal.

The Gök stone (Sö 327) dates from about the same period as the Ramsund carving and uses much of the same imagery but lacks the organization of the Ramsund carving (Lönnroth and Delblanc 1993: 49). The Gök stone portrays two hammers and a bellows. There is no depiction of a forge or furnace.

The stave church portal from Hylestad in Aust-Agder, Norway (c. 1200), depicts (in the bottom right corner) Regin forging a sword for Sigurðr (Hoftun *et al.* 2002: 194; Nordanskog 2003: 393-4). The figure on the left appears to be the smith Regin and he is clearly depicted holding a piece of metal in a pair of tongs over an anvil. In this smith's other hand is a hammer, lifted to a vertical position. Another hammer appears to be laid horizontally beside the anvil. The man on the right is working a pair of bellows (one with each arm) and each bellows has a discernible tuyere inserted into what appears to be a forge-stone. On the Hylestad portal, the forge behind this stone appears to be open, as opposed to an enclosed furnace. The Hylestad portal does not give any more details on the type of forge behind this stone: there is perhaps the hint of a flame, but nothing more. It appears that the forge and the anvil are in close proximity to one another.

The Vegusdal portal (c. 1200) portrays an almost identical scene as the Hylestad portal. Regin appears to be making a sword with a second figure working a bellows in each hand (Hoftun *et al.* 2002: 195). The two figures are in the opposite positions as the Hylestad portal. Regin is on the right, with tongs in one hand (holding a piece of iron upon the anvil) and a hammer in the other hand (raised in a vertical position right above the anvil). There is another hammer at the base of the anvil. Detail on the tuyeres has been lost due to damage, but there does appear to be a forge-stone and there may have been more details on flames on the opposite side of the forge-stone than are present in the Hylestad portal. Unlike the Hylestad portal, on the Vegusdal carving the forge and flames appear to be in the foreground, with the anvil in the background. Nonetheless, the carving does not preserve detail on the forge itself.

Two additional stave church portals portray this scene but with far less detail. On the Mæl portal (c. 1300) Regin appears seated by himself holding a hammer (Hauglid 1969: 195). There is also an anvil, two pairs of tongs, a bellows, a second hammer and a circular object (Hauglid 1969: 195). The Lardal portal (c. 1200) also portrays Regin seated alone. He

has a pair of tongs held vertically in one hand, with the end of the handles resting on the anvil. A hammer appears in his other hand, held above his shoulder and behind his head (Hoftun *et al.* 2002: 193). No details of a forge-stone or forge appear in the Mæl or Lardal portals.

In summary, while there are several medieval pictorial representations of smithing processes, these do not present specific information on the significance of forges, furnaces or crucibles. There is no evidence of ornamentation on furnaces or crucibles. The only evidence of the cultural significance of smithing practices from the Viking Age is the Snaptun forge-stone, which clearly suggests that smithing was understood in relation to mythological narratives of smithing.

The critical tradition: scholarship on smithing motifs and smith-figures

I will now provide a brief review of pertinent scholarship on smithing motifs and smith-figures. This body of scholarship can generally be viewed as exhibiting three different approaches.⁵² First, there are several studies that categorically interpret the smith as an otherworldly figure according to a fairly uniform set of characteristics, usually in association with folkloric motifs, societal taboos and practices of magic or shamanism. These studies tend to be remarkably broad in chronology (e.g. their focus runs from the Neolithic period to the nineteenth and even twentieth centuries), and they are often also broadly comparative (e.g. comparing cultures in northern Europe to cultures in Tanzania, Asia and elsewhere around the world). Second, several specific studies of the Old Norse corpus of myths offer interpretations of general crafting motifs and the role of craftsmanship in early medieval Scandinavia. These studies frequently adopt a structuralist⁵³ approach to the myths, situating

⁵² This categorization of different approaches is not necessarily meant in a mutually exclusive way. As is apparent in this short review, these different approaches share many features and methodologies (gendered or sexualized interpretations of smithing motifs, for instance) and also demonstrate certain fundamental distinctions.

⁵³ The mid-twentieth-century intellectual school of thought known as Structuralism has influenced many recent studies of Old Norse and Old English texts as cultural artefacts that preserve information about the general ideologies and social beliefs, i.e. the “codes of behaviour”, of early Germanic cultures. Structuralism has its basis in the work of Ferdinand de Saussure and his theory that language structures create meaning through basic units of oppositional meaning, i.e. “emes” (Richter 1998: 809-10). Literary and anthropological forms of structuralism, in general terms, seek to identify the most basic units of oppositional meaning within a narrative, mythology or culture and then study how those “emes” (e.g. “mythemes” or “ideologemes”) function in the patterns of behaviour and thought of a particular culture (cf. Richter 1998: 812-14). Both literary and anthropological varieties of structuralist methodologies have been applied to Old Norse and Old English texts, with varying degrees of rigour and success. More recent scholars like Margaret Clunies Ross, John Lindow and Jos Bazelmans are indebted to the work of Marcel Mauss, Max Weiner, Claude Lévi-Strauss and Louis Dumont (Bazelmans 1999: 1-53; Clunies Ross 1994: 14-7; Orton 2005: 314-7).

the oppositional patterns of the myths within the social context of settlement-period Iceland and Viking-age Scandinavia. Third, John Hines and David Hinton have published articles that compare the role of skilled smiths in pre-Christian and Christian contexts in Scandinavia and the British Isles. Hines and Hinton attempt to integrate archaeological and textual material into their studies of smithing motifs and smith figures in the Old Norse myths. Rather than strictly categorizing these smith figures according to uniform rubrics, Hines and Hinton tend to present an awareness of the diversity of roles in which smith figures appear.

Comparative and categorical approaches to the otherworldly smith

There is an ongoing debate about how to interpret the magical, supernatural or otherworldly associations of some smith-figures. Several folkloric, mythological and comparative studies present a relatively consistent categorical interpretation of smith-figures according to most (if not all) of these five general characteristics:

- 1) Excluded from society, even to the point of solitude
- 2) Male in gender
- 3) Subject to a taboo or restriction on sexual activity and interactions with women
- 4) Associated with production (often magical) of essential tools and (sometimes sacral) treasures
- 5) Associated with demonic or treacherous magical powers, the ability to travel through spiritual and/or physical transformation, the ability to mediate between worlds and between life and death; sometimes considered a specialist in distance⁵⁴ who mediates between the settled heartland and the dangerous outside world.⁵⁵

Some of these characteristics may seem to be related to what can be deduced about the historical realities of certain smith figures, e.g. the highly skilled itinerant smith who traveled

⁵⁴ Lotte Hedeager, for instance, suggests that smiths regularly had to take part in trading activities and were therefore considered “specialists in distance”: “Together with poets, troubadours, carvers, and musicians, smiths constitute a group of specialists whose frequent long-distance travel associates them with spatial distance and foreign places” (Hedeager 2001: 487; Hedeager 2002: 8). For a more recent and alternative interpretation of potential parallels between smiths and court poets or skalds, see Margaret Clunies Ross (2005: 2, 90-1). Clunies Ross suggests that there was a general ambivalence in medieval Scandinavia towards “those groups who were among the most skilled in the community, whether in intellectual or in practical abilities” (2005: 90). She speculates that this may have to do with “the anxieties of the upper classes” in relation to controlling skalds and smiths (2005: 91). See the following discussion of the work of John Hines and David Hinton (page 37 and following) for more details on this ambivalence.

⁵⁵ This summary was made by drawing upon the following sources: Barndon (2006: 99-102), Dronke (1997: 256-7, 266-7), Eliade (1978: 79-81), Gansum (2004: 53), Grimstad (1983: 204), Haaland (2006: 83-4), Hedeager (2002: 6-10; 2001: 483-7, 490-2), Hinton (2003: 270-1, 276-7), Motz (1977: 47-9, 57-8; 1993: 84), Nedoma (1990: 138) and Prescott (2000: 221-3).

widely and regularly (Callmer 2003: 337, 343-4). In other cases, however, the above characteristics are incompatible with certain smith figures or smithing motifs.⁵⁶ These characteristics have a long history in studies of folkloric and mythological smith figures.

Shamanic interpretations of Old Norse smith figures are, in general, either directly or indirectly influenced by Mircea Eliade's extensive works on shamanism. Eliade is perhaps best known, amongst many things, for developing a definition of shamanism and for hypothesizing the distinction between the sacred and the profane (Orton 2005: 312-3). In particular, two of Eliade's monographs (*The Forge and the Crucible* and *Shamanism: Archaic Techniques of Ecstasy*)⁵⁷ include some commentary on the cultural and archetypal significance of smithing motifs and smith figures. Eliade suggests that the smith, like the shaman, has magico-religious power over fire and transformation (Eliade 1978: 79-81). These studies have influenced several more recent scholars in their interpretations of smiths as shamanic figures in Old Norse sources and contexts (Dronke 1997: 256-7, 266-7; Hedeager 2001: 486, 490; Hinton 2003: 270). Some of these studies have suggested, for example, that *Völundr* should be understood as a remarkably skilled smith and also as shamanic (Dronke 1997: 256-7). Other studies have suggested that *Völundarkviða* has degenerated from a narrative about a sacred initiation rite into a misunderstood poem about the profane revenge of a dark demonic smith (Nedoma 1990: 138; Grimstad 1983: 204).

The precise nature of the evidence for such close comparisons between shamanism and smithing deserves more attention,⁵⁸ as does Eliade's methodological approach to studies

⁵⁶ In one of her early publications Lotte Motz clearly distinguishes between the folkloric dwarf smiths and the human smiths of, for instance, the Icelandic sagas: the "human smiths, however, [...] are in contrast to the dwarfs, settled in the midst of their community, and one could not derive from the social function of the village smith a full image of the elusive dweller of the mountain" (1977: 50; cf. Dillman 2006: 352-60). See my discussion of *Skalla-Grímr*, *Rauða-Björn* and *Hrolfr hoggvandi* in Chapter 2 (page 180) for more details on these smith figures as politically central.

⁵⁷ *The Forge and the Crucible* was originally published in French as *Forgerons et alchimistes* (1956). *Shamanism: Archaic Techniques of Ecstasy* was originally published in French as *Le Chamanisme et les techniques archaïques de l'extase* (1951). Both of these studies survey a wide range of shamanic practices, particularly from Siberian tribes like the Evenki/Tungus and Yakut.

⁵⁸ It is possible that similar tendencies towards associating shamanism with smithing have also influenced the reception of *Gísla saga*. The influence of the supernatural and the activities of skilled craftspeople are thematically important in this saga. An inaccurate assumption has been circulating, however, that the skills of the smith and the sorcerer are attributed to one and the same man in this saga. The longer version of this saga makes it clear, however, that *Porgímr goði* (an aristocratic leader) is the skilled smith, *not* the sorcerer *Porgímr nef* (Konrad 1849: 101; cf. Dillman 2006: 355-8; cf. Hermann 2000: 104; cf. Lethbridge 2006: 7-8). The Íslenzk fornrit edition of this saga, however, ceases its subordinated smaller-font printing of the longer version of the saga shortly before the chapter in which this confusion happens (ÍF 6 1988: 38, fn 4). Thus, because both men have the name *Porgímr*, it seems that several scholars have assumed that the sorcerer is also a skilled smith in this instance: see Anne Holtmark (1951: 42), George Johnston (1963: 14), and Theodore M. Andersson (1968:

of shamanism and archetypes of spiritual transformation and control over fire (Kehoe 2000: 2-6, 15, 37-9, 53-5; Tolley 2009: 552-6). While Völundr's escape flight is certainly suggestive of some sort of magical transformation, it is inaccurate to suggest that he is shamanic in his other actions (cf. Einarson 2009: 221-4). In his 2009 two-volume study of *Shamanism in Norse Myth and Magic*, Clive Tolley cites Eliade, pointing out that the symbolic and mythological significance of birds in "magical flight motifs" is not restricted to shamanism (Tolley 2009: 554). Thus, Tolley suggests it "is not necessary to seek a shamanic background [...] for the (soul)flight ideas which appear to inhere in the Völundr myth" (2009: 555). In fact, several other figures in Old Norse mythology (Þjazi, Loki, Freyr, Skírnir and Óðinn) demonstrate transformational flights that are not necessarily shamanic. Thus, Völundr's transformation and flight have parallel motifs within the Old Norse corpus that demand closer attention before such shamanic comparisons are made.

Similarly, the interpretations of Völundr as elvish and Sámi and therefore shamanic and "demonic" need to be precisely contextualized (Dronke 1997: 256-7; Nedoma 1990: 138).⁵⁹ These terms may be associated with one another, but only in specific contexts. Tolley's work on the twelfth-century *Historia Norvegiae*, for example, emphasizes how Sámi shamanism was understood by Christian Norwegian merchants as a demonic and devilish superstition (Tolley 2006: 1-5). While such interpretations were clearly circulating in the centuries immediately preceding the composition of the *Codex Regius*, it is important to appreciate that the only connection between *Völundarviðá* and the Sámi is in the thirteenth-century prose prelude to the poem. In the older verses of the poem Völundr is characterized as a leader or kinsman of the elves (10.3, 13.4, 32.2; cf. McKinnell 1997: 331-2). It is difficult to precisely determine the meaning of this elvish association. While this elvish association is not likely as late or as Christian in provenance as the prose prelude, the Old Norse literary evidence on distinctions between dwarfs, giants and the light and dark elves is scant and ambiguous at best (Grimstad 1983:193-95; Lindow 2002: 109-10). Gro Steinsland suggests, however, that vertical dichotomies (like Heaven and Hell, God and Devil, light and dark) may have more to do with later Christianized interpretations of a Norse mythological realm that is actually portrayed as horizontal in nature (Steinsland 2005: 141). Thus,

19). To my knowledge the only instance in the sagas where smithing skills are clearly attributed to an individual who also has some skills in sorcery is Bósi in *Bósa saga ok Herrauðs*.

⁵⁹ Nedoma suggests that his elvishness establishes that "Völund is of a demoniac nature" (1990: 138). Dronke suggests that the "poet epitomizes as 'elvish' the demonic nature of the human smith – born in the same nest as the shaman" (1997: 256-7; cf. Einarson 2009: 223).

interpretations of Völundr as a demonic elf or devilish shaman may have more to do with the later, Christian reception of the poem rather than with the actual content and context of the verses themselves. It is also unclear what exactly (if anything) these particular otherworldly associations have to do with the many detailed descriptions of Völundr's activities and contexts as a skilled smith within the poem. These issues are difficult to resolve without speculation, but several scholars have done research in these areas, frequently citing Eliade's work on shamanism and smithing motifs.

Lotte Motz has published several studies of the significance, magical and otherwise, of otherworldly smith figures. In particular, Motz has extensively studied the role of dwarfs and the crafting motifs associated with them in the Old Norse sources. The parameters of Motz's studies are, however, important to keep in mind. She is particularly focused on the motif of the subterranean smith in association with stone (not metal), sometimes in a way that is exclusive of evidence, motifs and traditions that do not exhibit this particular set of associations (1983: 16). Motz's studies also have a broad chronological range. On the one hand she studies the motif of the "mountain smith" as it is, arguably, recorded in the form of Old Norse dwarfs, and on the other hand she also examines much more recent, frequently very localized, nineteenth-century and twentieth-century written copies of Germanic and broadly European folktales (1983: 9, 13-5, 22-9). Motz observes that these stories of the subterranean smith are "encountered, paradoxically, in their greatest density, in locations which do not possess metallic ore and where metal craft has not held a place of high importance", pointing in particular to areas of northern Westphalia, lower Saxony and Jutland (1983: 15). While Motz acknowledges that pre-historic metalworking did, in fact, take place in many of these areas, she is particularly interested in areas where local names or stories of the subterranean smith appear in conjunction with generally "pre-metal" artisanal activities and with the earliest evidence of "an indigenous style and the presence of professional artisans" (1983: 6-7, 16).⁶⁰ She uses evidence of Neolithic pottery and stone work in these areas as the basis of her argument that original, "native" forms of the

⁶⁰ The focus of Motz's studies also does not coincide with evidence of bog iron processing in the Schleswig-Holstein area (1983: 18; cf. Motz 1977: 51-2). She focuses instead on the hypothesis that the Holstein area was the local origin of a "native" Neolithic type of pottery that appears in conjunction with early stone "battle axe" burial rituals (1983: 69-71, cf. 77-9). The Schleswig-Holstein area, the smelting of bog iron, and associations to battle axes and axes in general will be a main focus of my examination of Járnsviðr in chapter two. The material I examine is, however, focused on the Migration Period and Viking Age.

subterranean smith operated in close association with stone and megalithic monuments (1983: 6, 78-82).

In her more specific studies of the Old Norse dwarfs, Motz suggests that this all-male race of creatures is likewise intimately associated with stone (1983: 89-92). Motz states that dwarfs are never described engaging in sexual intercourse with women, nor are they seen in terms of travelling.⁶¹ “We must view [dwarfs]”, Motz states,

as the mythical representatives of a profession, paralleling the craftsmen-smiths of early society, who were, indeed, endowed with ritual importance. Their status is best exemplified by the priests in the service of the god Ptah of Egypt: these bore the title ‘supreme master of handicraft’ (*wr-hrp-hmwt*) and supervised the building of the pyramids. (1993: 84)

Motz consistently bases her work in the linguistic study of dwarf-names in Old Norse sources. Her comparative, interdisciplinary methodologies produce conclusions that speak generally to the significance of folkloric and mythical tropes from the Neolithic Period through to the High Middle Ages. Motz argues that the “folktale artisan” is closely associated with the spirit and craft of stone and with areas that have ancient stone monuments (1993: 84).

Several other interdisciplinary studies of smith-figures and smithing motifs have developed partly in response to Motz’s work. For instance, in “The Metallurgical Code of the *Völundarkviða* and Its Theoretical Import”, Richard Dieterle takes issue with Motz’s notion of the smith, arguing that “we cannot escape the feeling that the post-Neolithic smith is the spirit of metal rather than of rock” (Dieterle 1987: 4). Dieterle suggests that *Völundarkviða* portrays a basic logic in which we encounter two sets of pairs in mutually exclusive patterns of denial and affirmation: either youth is denied (the swan maidens leave, *Völundr* kills the sons of King *Níðuðr*) and metal is affirmed (*Völundr* produces the 700 rings, or the jewels, gems, and silver bowls), or sexuality is affirmed (swan maidens arrive, princess *Bǫðvildr* arrives) and metal production is denied (nothing happens, or the one golden ring is broken) (Dieterle 1987: 8-12). Dieterle argues that the smith identifies on a spiritual level with his material in the smelting and manufacturing processes: “The similarity [between the smith and

⁶¹ This categorical interpretation of the dwarf-smith, while perhaps valid within the constraints of Motz’s stated aims, must be considered as incompatible with the archaeological, anthropological and literary evidence of highly skilled smiths from the Migration Period and Viking Age. Johan Callmer, for instance, makes a compelling case for these professional artisans *necessarily* being itinerant in order to make their living (Callmer 2003: 337, 343-4).

his material processes] is not to be found on the surface [...] but in a spiritual identity” (1987: 29). The smith, Dieterle suggests, becomes (at least when smelting) a curiously asexual being because smelting “is first and foremost a process of separation, the parting of metal from its matrix, which drains off as molten slag. Since the pristine ore is an intimate bond of metal and stone capable of being separated, their union is viewed as a kind of copulation” (1987: 12). Thus, according to Dieterle’s symbolic interpretation, because separating the ore from its matrix is a denial or rupture of sexual union, so too the smith must abstain from sexual activity while attempting to purify the ore. Dieterle argues that the movement of the swan maidens, the pattern of flights and entrapments throughout the poem, and several of the more enigmatic features of the poem (e.g. *Vǫlundr*’s webbed feet at the end), operate as abstract representations of the process by which impurities are separated from the precious metal. This is Dieterle’s argument for the spiritual immersion of the smith in his molten medium.

This type of highly abstract analysis can seem to explain features that are otherwise enigmatic and without explanation. It is, however, fundamentally problematic for at least three reasons. First, it assumes that the poem and its tradition can be explained through one mode of highly abstract and symbolic interpretation. Second, it either assumes that audiences of the poem (or the poem’s supposed metallurgical architect) would have understood the patterns of the poem in this sexualized, symbolic way or it disregards the significance of the socio-historical context of the original audiences and the significance of smiths within that context. At the same time, however, it assumes a close correlation between the interpretation of the poem and a particular metallurgical practice, i.e. smelting. There is, in fact, no explicit mention of any smelting or furnace or crucible in *Vǫlundarkviða* and it is arguable whether or not such associations are implied or understood in the way that Dieterle suggests. Third, it disregards the fact that the poem describes a nuanced relationship between the smith and his socio-cultural environment.

Similarly sexualized approaches to smithing motifs in Old Norse sources also appear in more recent articles. As I discuss above, there is a remarkable lack of evidence for any ornamentation or even representations of furnaces and forges in early medieval Scandinavia. It appears that the inspiration for this sexualized mode of interpretation comes from studies of sexualized smithing rituals in Africa and elsewhere. Anthropological studies of the Fipa and Pangwa tribes in Tanzania, for instance, have documented highly sexualized furnace structures (for example, furnaces with pronounced breasts) and highly sexualized rituals as

part of the purification of ore into workable metal. While the anthropological studies of the Fipa and Pangwa are remarkable contributions to scholarship, the analogies that have been drawn to explain various enigmatic figures and features of Old Norse mythology are very speculative. For example, Motz's conclusions about the sexual repression of the race of dwarfs, and their close association with the interior spaces of mountains and stones, have been used to explain how concepts of containment and sexual intercourse might be involved in ritual smelting practices in pre-historic Scandinavia (Barndon 2006: 101; cf. Barndon 1996, 2001, 2004a, 2004b; Haaland 2004, 2006). In similar speculative comparisons, *in aldna*, "the old one", in Járnsviðr, "Iron-woods" (*Vsp* 40), has been explained as an ancient giantess metaphorically representing an old smelting furnace that is, despite her age, unnaturally giving birth to refined iron (Gansum 2004: 46). These comparative explanations offer some insightful contributions but they are highly speculative and operate without any comparable evidence from the Norse tradition.

Structuralist approaches to craftsmanship in the Old Norse myths

More balanced and extensive studies have applied a structuralist approach to the Old Norse myths in a way that takes into account the hypothetical original audiences of these myths as well as the more general socio-cultural and literary significance of crafting and smithing motifs. Although the work of Margaret Clunies Ross and John Lindow focuses upon crafting and trading motifs in general, their approaches and conclusions are nonetheless important to interpretations of specific smithing motifs and smith figures.

In her two-volume study *Prolonged Echoes*, Margaret Clunies Ross offers one of the most extensive analyses of the entire corpus of Old Norse myths. In the first of these volumes, Clunies Ross draws on her studies in anthropology to examine the kinship structures in the myths in relation to parallel structures in settlement-period Iceland. She closely studies the self-creation of the Æsir and the rest of the mythic cosmos. Clunies Ross argues that in this and other mythological narratives "[k]inship relations of individuals may [...] be used paradigmatically to express relationships between groups and metaphorically to express what those groups stand for in terms of abstract oppositions" (1994: 47).⁶² Clunies

⁶² Clunies Ross suggests that, although "it would be much too facile to suggest that the system of Old Norse myth as a whole was exclusively pro-god and anti-giant", "we must also build the observable bias of audience point of view into our analysis. I refer to the fact that the Old Norse myths we have on the whole take the side of the [...] Æsir" (1994: 49).

Ross examines the genealogical origins of the Æsir, positing that the formulation that identifies Óðinn and his brothers as the first of the Æsir,

immediately places a social construction upon natural relationships of kinship by giving lesser value to the genetic contribution of the matrikin. Further, it distinguishes the difference between giants and Æsir as originating in the male line. [...] If the matrikin had been equally valued, it would not have been possible to construct a system of social inequality in which the Æsir were justified in withholding their women from the giants as marriage partners on the implicit grounds of their lower status. (Clunies Ross 1994: 57)

To emphasize the powerfully divisive ideology set in motion by the first Æsir, Clunies Ross points out that “[i]f we group classes of mythic beings according to their biological kinship with one another, then the gods and the giants form a single class whose kinship over at least three generations is more closely related than the oppositional ideology many Old Norse myths suggest” (1994: 59).

Clunies Ross goes on to point out that the chief method of maintaining these distinctions between the gods and the giants is through Þórr and his hammer, Mjöllnir. This hammer is therefore used as a vital cultural tool to reinforce the oppositional structures that, as Clunies Ross argues, are the basis for the creation of the cosmos by the Æsir. In her analysis of these abstract oppositions, Clunies Ross argues that the myths seem to portray the giants as aligned with disordered “natural” resources and the destructively chaotic powers of the chthonic female; conversely, the Æsir themselves represent ordered, patrilineal, “cultural” crafting. This is not to say that the natural resources of the giants are devalued. Indeed, it is quite the contrary in many cases. The resources of the giants are sometimes (but not always) thought of as less refined than the skills and possessions of the gods, and quite often the giants do not even seem aware of how to use a cultural tool or craft properly even when they have these things in their possession: the mead of poetry is a good example, as is Hrungrnir’s errant use of a whetstone, or rather *the* original whetstone, as a weapon rather than as a tool with which one sharpens weapons.⁶³ Thus Clunies Ross identifies several oppositional and hierarchical pairings: gods above giants, male above female, cultural crafts above raw

⁶³ Lindow points out that, “[l]ike the supernatural beings of most mythologies, Hrungrnir is culturally clueless. For one reason or another, he cannot properly use the culture’s tools, any more than he can adhere to its other norms” (1996: 7). More specifically, this narrative portrays Hrungrnir as using as a weapon a tool that is meant to sharpen weapons: the irony here is specifically pointing at Hrungrnir’s lack of skill *and* knowledge in crafting. For further discussion of the significance of both skill and knowledge, see my analysis of *Völundarkviða* stanza 18 in Chapter 3 (page 230 below).

resources, order above chaos, and creation above destruction. As Clunies Ross acknowledges and discusses in great detail, things do not always line up neatly upon each side of these binaries. For example, Clunies Ross analyzes the significance of the powerful giant Þjazi and his daughter Skaði, who behave very exceptionally indeed (Clunies Ross 1994: 115-9). To this analysis, I would also add a brief note about the giant Þrymr. According to the eddic poem *Þrymskviða*, Þrymr steals Þórr's hammer and the first description of this powerful giant in the poem is as a skilled craftsman who sits on a mound (likely a sacral place) in his settlement complex and makes twisted gold collars for his dogs: *Þrymr sat á haugi, þursa dróttinn, / greyiom sínom gullbǫnd snøri* (6.1-4), "Þrymr sat on a burial mound, lord of giants, for his dogs [he] twisted gold bands." *Þrymskviða* is a parodic and burlesque poem in many ways,⁶⁴ but this is nonetheless a significant description of a leader of his people (Þrymr) working gold into ornate collars while sitting on a sacral mound. This description could prove a fruitful subject for further focused research.⁶⁵

While Clunies Ross focuses on the abstract oppositional framework between Jötunheimar and Ásgarðr, John Lindow presents several similarly structuralist analyses of Þórr's role in maintaining distinctions between Jötunheimar and Ásgarðr. Lindow argues that Þórr and his hammer embody the power of craftsmanship in establishing and maintaining sacral and social order. In his analysis of "Thor's Visit to Útgardaloki," Lindow argues that Þórr and his hammer embody a creative power that is parallel to that of the original Æsir and their creation of the cosmos. In this narrative, Þórr shapes the physical landscape with his hammer, and he creates chronological order through his production of the ebb tide. Thus, as Lindow argues, "Thor has a valid claim to participation in both aspects of creation, the ordering of the cosmos and of the principle of time-reckoning" (2000: 182). Lindow also suggests that Mjöllnir resounds with the original creation of the cosmos from the raw parts of Ymir's corpse: "The creation of the cosmos through the slaying of a giant sets an archetype for mythic activity in which every slaying of a giant recapitulates the proto-slaying and thus is a creative activity, and Thor serves nobly in this arena through his frequent giant slaying" (2000: 181-2).⁶⁶ Thus, Lindow's appreciation of the creative aspects of Þórr and his hammer

⁶⁴ As Clunies Ross points out, the "comedy of *Þrymskviða* turns on an inversion of the pattern of expected social relationships between gods and giants" (1994: 109).

⁶⁵ Cf. <http://www.historiska.se/data/?foremal=110010>, <http://www.historiska.se/data/?foremal=120583>

⁶⁶ In a discussion of "Thor's *hamarr*", Lindow likewise argues that the killing of Ymir by the sons of Bur "was the first slaying of a giant, and it allowed the *æsir* to fashion the cosmos, with its central portion, Midgard, marked off as safe for men and protected, as we have seen, by Thor and his hammer. Whenever, then, a giant is

presents this member of the Æsir as a force of sacred creation, order, and protection, something that is reflected in the sagas through Þórr's associations with the boundaries of sacred spaces and with high-seat pillars in land-taking practices.⁶⁷ As Lindow also notes, the archaeological record shows that small amulets in the shape of Þórr's hammer were thought to offer protection from destructive natural forces.⁶⁸ Thus, Lindow, like Clunies Ross, concludes that "[c]raftsmanship is powerful, and it separates the bearers of culture from all those outside culture who threaten it. Thor's *hamarr*, whether wielded by the god or worn about the neck, invoked this distinction and gathered under it those who sought its shelter" (Lindow 1994b: 503).

While Lindow and Clunies Ross use these structuralist methodologies to study general oppositional patterns in the prose narratives of *Snorra Edda* and the corpus of Old Norse myths in general, similar approaches have been used to explain the sometimes enigmatic narrative of *Völuspá*. In her 2002 article on "Giantesses and female power in *Völuspá*", Else Mundal argues for a structural, gendered, oppositional pattern across the narrative of *Völuspá*.⁶⁹ She suggests that each encounter between the male gods and the female giants in *Völuspá* is part of a repeating cycle in which the Æsir divest some of their creative power in response to the disruptive introduction of potent female powers of creation (Mundal 2002: 185-95). The approach of Ragnarøk is therefore explained, according to Mundal, by the sequential weakening of the creative powers of the masculine Æsir and the comparative strengthening of the forces of feminine creation (or destruction). The first such event, according to Mundal's interpretation, is the creation of the *aflar*, "forges/furnaces", in stanza seven, which somehow causes the disruptive insurgence of the three female giants in stanza eight.⁷⁰ Similarly, Mundal suggests that Gullveig in stanza 21, and the enigmatic

slain, the universe is mythologically recreated, and the portion marked off as safe from the powers of chaos is reaffirmed" (1994b: 502).

⁶⁷ See, for example, chapters 3-10 of *Eyrbyggja saga*: Þórólfr Mostrarskegg is introduced as an *ástvinr*, "close personal friend", of Þórr's (ÍF 4 1985: 7).

⁶⁸ See also H. R. Ellis Davidson's earlier discussion of "Thor's Hammer" (1965: 1-15).

⁶⁹ Mundal draws upon Clunies Ross's approach in *Prolonged Echoes* (Clunies Ross 1994: 198-211; cf. Mundal 2002: 191-2). Mundal also draws upon Gro Steinsland's doctoral thesis on the role of Hierogamy in the Old Norse poems *Skírnismál*, *Ynglingatal*, *Háleygatal* and *Hyndluljóð* (Steinsland 1991). In particular, Mundal cites (without any page reference) Steinsland's suggestion that in the Old Norse myths the creation of new species happens through diametrical opposites (Mundal 2002: 189).

⁷⁰ See also Hines, who makes the following statements immediately following his discussion of the establishment of the Æsir's settlement and *aflar*: "In *Völuspá*, the disruptive effect of sexuality in the gods' lives is first implied by the sexual element in the arrival of the three *pursa meýiar*, 'maidens of the giants' (st. 8.5-6), and then echoed in the antagonistic roles acted out between the gods and the next characters appearing to

female figure *in aldna*, “the old one”, in stanza 40 are also part of this pattern of gendered encounters that somehow force the male gods to divest themselves of their creative powers (2002: 185-7, 191-3). While Mundal’s interpretation is insightful in some ways, it depends upon several very close causal relationships between events and stanzas in the poem. As I have already noted, it is problematic to assume that the stanza ordering and the general composition of *Völuspá* can support such causal interpretations (McKinnell 1993: 714; Sigurður 1978: 25-6). Mundal’s argument also depends upon a more abstract, symbolic and gendered understanding of creation motifs that are, in both *Völuspá* and the entire Norse corpus, not necessarily so consistently gendered or abstractly understood.

Archaeological and textual approaches to smith-figures

Structural approaches to the entire corpus of Old Norse myths, like those of Clunies Ross and Lindow, highlight the general cultural significance of craftsmanship and how literary and mythological smith figures might be interpreted within this general scope. By drawing upon a variety of Old Norse and Old English texts, several archaeological scholars have attempted to formulate more specific conclusions about the historical role of smiths in medieval Scandinavia and Anglo-Saxon England.⁷¹ These scholars, however, tend to present evidence in a much more equivocal way than some of the categorical and comparative approaches outlined above. The smith seems to be a figure caught between extremes: he is a marginal, liminal, threatening, solitary figure, yet also a central, communicative, integral figure (e.g. Hinton 2003: 271). Although this can seem confusing, it is important to keep in mind that the smith is not just one homogeneous singular person. Rather, the figure of the smith may contain many valid but heterogeneous aspects, and smiths likely functioned in disparate ways during the Viking Age. It is perhaps more accurate to talk of different smith figures, rather than the figure of the smith.

Both John Hines and David Hinton have, for example, attempted to discern contrasts between the multiple roles of smiths in pre-Christian and post-conversion society in

be referred to using the feminine pronouns *hón* and *hana*, Gullveig and Heiðr” (2003: 33). Similarly, Hedeager also suggests that the golden age of the *Æsir* in *Vsp* 7 is “the happy first age of the world, before the arrival of women from the dangerous outside world of Utgard, which meant that the gods lost their skills as artisans, and their control over the precious metals. [...] As a remedy, the myths explain, the gods created the dwarfs, who were now to become the skilled artisans in charge of iron and precious metals” (2001: 500).

⁷¹ Also worth consideration here is the work of Johan Callmer on late Migration-period and early Viking-age craftspeople and their communities and Callmer’s brief comments on literary smithing motifs (2003: 357-8). However, because his work is more exclusively archaeological, I do not include it in this review of scholarship on literary smith figures. Instead, I discuss Callmer’s work in more detail in the following chapters.

Scandinavia and Anglo-Saxon England. In his 2003 article Hines uses several summary explorations of archaeological finds and textual sources to suggest that the smith and his craft seem to have been sources of far less anxiety within Christian Scandinavia than was the case in pre-Christian Scandinavia. The first of these explorations is of the roughly eleventh-century Hørning runic-stone inscription from Jutland by Toki the smith. In this inscription a Christian cross is prominently situated at the end of the following runic statement: “Toki smith raised [the] stone after Þorgils Guðmundarson, who gave him gold and freedom” (Hines 2003: 22). Hines notes that two similar inscriptions seem to have been made by this smith named Toki (2003: 24). Hines suggests that in these stones the smith memorializes four things:

1. The power and status of Toki’s former master, who has just freed him.
2. Toki’s identity and occupation as a smith.
3. An assertion of status associated with the occupation of the smith, of which the bearer can be proud.
4. Toki’s Christian capacity to pray for the conferment of the freedom of salvation for people’s souls despite whatever social subordination he himself might have been subject to. (Summarized from Hines 2003: 22-3)

Through an exploration of tool deposits in so-called “smiths’ graves”,⁷² Hines also suggests that these served a substantial cultural function, and that “the hierarchical ordering amongst the smiths’ graves implies both that smiths could aspire to a relatively high social status and that men of high social rank did not regard it as beneath them to display such skills” (2003: 30). A case in point here, Hines suggests, is Skalla-Grímr being buried with his smithing tools in *Egils saga* (Hines 2003: 29).

⁷² In regards to the so-called “smiths’ graves” phenomenon, it is worth considering that the deposition of tools in a grave does not necessarily mean that the individual was a skilled craftsperson (Hinton 2003: 280-1). For example, Heinrich Härke’s examination of the symbolic practice of weapon depositions in Anglo-Saxon graves effectively problematizes the assumption that such burials are “warrior graves” (Härke 1990: 22-43). By using a variety of data sets from grave finds, Härke demonstrates that weapon burial practices are, in fact, not consistently correlated with warrior activity, but rather with wealth, physical stature and descent (1990: 42-4). All data consistently shows “the Anglo-Saxon weapon burial rite to have been a symbolic act: weapon burial was not the reflection of a real warrior function, but the ritual expression of an ethnically, socially and perhaps ideologically based ‘warrior status’” (1990: 43). Such studies bring into question the assumption that tools in a particular burial define the individual as a skilled craftsperson. See also re-investigations of the cover-all term “hoard” by Julie Lund (2005: 109-36) and John Hines (1989: 193-206).

In a final section to his article, Hines investigates the pre-Christian, pagan social situation of the smith in a conceptual realm in which divinity is interpreted in humanist rather than transcendental terms (2003: 34). Hines depends mostly on textual means here, via the poems *Völundarkviða*, *Völuspá* and *Rígsþula*.⁷³ He observes that these poems are “fundamentally directed less by concerns with religious dogma (be that pagan or Christian) than by human social issues to which the introduction of Christianity was only indirectly relevant” (2003: 32). Hines suggests that in these poems the smith seems to be relatively free of pejorative commentary (except perhaps by being assigned to the middle-class in the aristocratic framework of *Rígsþula*)⁷⁴ and his skills and products rarely receive qualitative epithets, positive or negative (2003: 31-4). Hines observes that the smith does, however, seem to have a key role in society, one that often is coupled with ambiguous sources of power and the rather disturbing or threatening potential for aristocratic insurgence (2003: 33-4). Hines concludes that although the Christian guilds seem to have had little problem adapting the smith and his tradition to controlled purposes, earlier socio-religious perspectives seem to have demonstrated much more anxiety about the ambiguous role of the smith as producer and social agent (2003: 35-7).

Unlike Hines’s more pan-Scandinavian approach, which is also inclusive of finds in the British Isles, David Hinton’s 2003 article on “Anglo-Saxon Smiths and Myths” focuses rather predominantly on the evidence within the Anglo-Saxon tradition. Like Hines, however, Hinton also suggests that Christianity had an integral part in changing the portrayal and role of the smith in society as this type of craftsperson was brought into the service of the church. Hinton’s observations and conclusions are, in some cases, much more speculative than Hines’s, and his approach is certainly more broad in its chronological aspect. Hinton observes textual and material evidence of smithing from the fifth century through to the eleventh century, pursuing a few tangents into the early fifteenth and sixteenth centuries. Drawing upon the law codes of King Ine, King Æþelberht of Kent, King Alfred, as well as Ælfric’s *Colloquy on the Occupations* (2003: 263-8, 276), Hinton observes that different

⁷³ Hines notes the “uncertainty and even controversy over the dating of eddic poems”, but suggests that “one of the particular advantages of archaeology is that it writes a history of the *long durée* much more readily than a punctuated chronicle of events; and a historical perspective concerned principally with long-term processes of development renders a specific point of composition (if any such thing can really be conceived of in the case of most eddic poems) far less significant an issue” (2003: 36).

⁷⁴ With respect to Hines’s observations here, see my examination of the queen’s speeches in *Völundarkviða* (page 238 below), which show a distinctly pejorative interpretation of the smith.

types of smiths were clearly understood as specialists in a variety of metals and crafts; some smiths were also highly valued as controlled sources of elite crafts by royalty and aristocrats in church and manorial compounds (Hinton 2003: 266-76). The slave smith was valued in *wergild* as equal to a freeman, and the smith could also be a free agent in society. Citing Robert Fossier's study of *Peasant Life in the Medieval West*, Hinton also suggests that the smith may have had a unique versatility as a communicator between the elite land-owners and the slaves of tenth-century Anglo-Saxon society:

King Ine's law states that a Wessex *gesith* could take his reeve, children's nurse, and his smith with him if he moved – "the smith seems to have been in no position to refuse to go, but the bond was clearly likely to be a close personal one – smiths may have been uniquely able to 'communicate' with their lords, acting as intermediaries between aristocrat and peasant. (Hinton 2003: 267)⁷⁵

Hinton also suggests that material evidence demonstrates that the smith's tools and methods not only enabled others to display their status and identity, but also served to create the smith's own identity. From the eighth century onwards, for example, moneyers tended to inscribe their names on coins. Hinton suggests that this practice may have been connected to smiths engraving their names on blades or hilts: "They had personal reputations – or wanted them" (2003: 275). The first example of this, and the first Anglo-Saxon smith to whom we can give a name, is "Ludda" who inscribed his name on a seventh-century coin that he repaired (Hinton 2003: 280). Some smiths clearly had the capacity, and desire, to establish their own reputations.

Hinton demonstrates that from the early Germanic Iron Age through to the tenth and eleventh centuries, there is continuity in how the smith was associated with a variety of stigma and social criticisms: amongst the panoply of the church compound in Ælfric's *Colloquy*, "unsurprisingly, it is only the blacksmith who is derided" (2003: 276). Hinton also points out that at least two "smiths' graves" seem to give the impression of the spatial marginalization of the smith from the central community or urban centre: the graves are solitary, outside of church graveyards and indeed outside community centres entirely. Hinton also notes, however, that another roughly contemporary grave places the "smith" figure decidedly inside the community arrangement of the church graveyard (2003: 271). Again, it is important to keep in mind that the smith is not a homogeneously characterized figure, and

⁷⁵ Hinton quotes here from Robert Fossier (1988: 55).

we should not expect such to be the case. Hinton does, nonetheless, speculate as to the implications of the liminal geographical space allotted for the smith in those two graves and in *Völundarkviða* (2003: 271).⁷⁶ Hinton also suggests that permanent smithy facilities may have been almost entirely enclosed edifices (because the smith needed to work in low light conditions to discern the temperature of the metal by its colour) on the margins of communities for the pragmatic reasons of being closer to fuel (forests) and keeping a fire hazard away from other buildings (2003: 271, 279).⁷⁷ Hinton's re-constructive speculation about the smith is undecided, but his article investigates more of the rather pejorative or marginalizing aspects of the smith in the material and textual records.

Summary

Craftsmanship is indeed powerful, as Lindow points out (1994b: 503), and the smithing motifs and smith-figures of Old Norse mythology present a complicated and integrated picture of the communities and cultures of Viking-age Scandinavia. Smithing is captivating as a science, an art and a literary motif. There is a compelling drive to explain enigmatic smith figures and riddling allusions to smithing in literature and archaeology. Many of these smithing motifs were not understood even by the scribes and poets who composed, transmitted and recorded these poems. The drive to explain these motifs can, however, lead to distracting overgeneralizations and inaccurate categorizations. To return again to John Hines and his perspective on balanced and integrated interdisciplinary studies, it is important to keep in mind that "[e]xplaining, or at least seeking some way of comprehending diversity, is quite different from reducing diverse phenomena to a single explanation" (1989: 195). It is with this distinction in mind that I contribute to the

⁷⁶ cf. discussions of the archaeological evidence for crafting communities located on shores throughout southern Scandinavia (Callmer 2002: 125-157; Callmer 2003: 356; Hjärthner-Holdar *et al.* 2002: 161; Zachrisson 2004: 165-167).

⁷⁷ In relation to Hinton's speculations here and the broad chronological range of his evidence, I would add a brief note about the possibility of smiths working well into the night (to take advantage of the darkness) and making a great amount of noise. Consider, for instance, the c. 1425 Middle English poem that has editorially been titled "The Blacksmiths" (Sisam 1955: 169-70). As the first three lines illustrate (and the exuberant onomatopoeia in lines 15 and 19-20), this poem is a complaint about the noisy, late-night activities of blacksmiths: *Swarte smekyd smeþes smateryd wyth smoke / Dryue me to deth wyth den of here dyntes. / Swech noys on nyghtes ne herd men neuer* (Sisam 1955: 169-70), "Blackened with smoke smiths made sooty with smoke drive me to death with noise of their strokes. Such noise during nights no man has ever heard." Similarly, in Chaucer's "The Miller's Tale" Gervys the smith (who evidently lives near John the carpenter) is hard at work and has an *iren hoot*, "hot iron", when Absolon shows up in the darkness of early morning: *Derk was the nyght as pich, or as the cole*, "The night was dark as pitch, or as charcoal" (Benson 1987: 75-6; ll. 3731, 3761, 3809). Consider also the night-time activities of Apellen the smith (see *afl* 25 in Chapter 1, page 64; cf. page 209).

understanding of smithing motifs and smith figures in Old Norse myths. I do this through the following three examinations of mythological smithing motifs and one short note.

Chapter One - overview

The objective of this chapter is to determine the meaning of the *aflar* that the *Æsir* establish as part of their first settlement in stanza seven of *Völuspá*. This chapter includes an extensive examination of the literary and archaeological attestations for forges, furnaces and workshop spaces in Old Norse contexts. I examine the extant attestations of the Old Norse word *afl*. I also study the archaeological information on the role of forges, furnaces, as well as workshop spaces more generally in relation to settlement patterns. This first chapter contains substantial surveys of both literary and archaeological material. I summarize and discuss this material towards the end of the chapter, but the reader may find it helpful to return periodically to certain attestations or summaries of particular settlement sites. To facilitate this, both the attestations and the settlement sites are clearly titled and page numbers for each attestation of *afl* are identified in the table of contents and in cross-references throughout this dissertation.

A short note on Gullveig - overview

Between the first and second chapter I include a brief note about a particularly enigmatic figure named Gullveig. Gullveig appears only in stanza 21 of *Völuspá*: she is mentioned nowhere else in the entire Norse corpus, nor in related Germanic myths and legends. Several speculative interpretations of Gullveig have been made. One persistent trait in many of these interpretations is the suggestion, often no more than a hint, that Gullveig might somehow be representative of the metallurgical processing of gold. I briefly outline scholarly interpretations of the name Gullveig⁷⁸ and trace the critical history of this metallurgical interpretation and present my own evaluation of Gullveig.

⁷⁸ As I briefly note at several points in this dissertation, Germanic dithematic personal names operate on a different logic than two-element toponyms. In the case of the former, the two elements are simply collocated, each carrying its own meaning but neither one qualifying the other. In toponyms, however, the two elements are meaningfully connected. Hence, a woman named Þórdís is not understood as “lady/goddess of Þórr”. Rather, she is understood in independent association with *dís*, “lady, goddess”, and Þórr (i.e. she is associated with both lady-like qualities and, independently, Þórr-like qualities) (cf. Motz 1981: 498). There are some exceptions to this rule, such as toponyms and the names for mythological beings, like giantesses or troll-women for instance, which can operate as true compounds (cf. Motz 1981: 498).

Chapter two - overview

In the second chapter I continue my examination of smithing motifs in *Völuspá* by evaluating the role of the mythological toponym Járnvíðr, “Iron-wood”, as it appears in stanza 40. I analyze this toponym in relation to evidence for the role of smithing resources like bog iron and charcoal throughout early medieval Scandinavia. I examine the attestations and derivative forms of Járnvíðr, both in mythological texts and in historical contexts. In a brief excursus I also discuss the close association between the mythological Járnvíðr and a certain group of female giants.

Chapter three - overview

In the third and final chapter I examine the role of smithing motifs over the narrative of *Völundarkviða*. I analyze the vocabulary and context of smithing and crafting throughout the poem. I study the master-smith Völundr as an independent artisan with great skill and as a commissioned or enslaved artisan producing custom-made artefacts exclusively for one aristocratic and royal family. I examine the social significance of Völundr’s productions in relation to early Germanic customs and possible analogues for the poem. I also analyze the information presented in *Völundarkviða* about settlement complexes and spatial relations.

Chapter 1: Smithing motifs in *Völuspá* stanza 7

This chapter examines the literary, linguistic and archaeological role of the *aflar*, “forges, furnaces”, that are established as part of the Æsir’s first settlement. This chapter has four sections. First, I discuss the textual and literary details of *Völuspá* 7 and examine the extant attestations of the word *afl*. Second, I analyze the attestations for *afl* and provide a definition of *afl*. Third, I examine information on metalworking sites in relation to communal structures and patterns of trade from archaeological sites in medieval Scandinavia. Finally, I conclude the chapter with an overview of this evidence and what it says about the role of the *aflar* in *Völuspá* 7.

1.1 Textual and literary details of *Völuspá* and stanza 7

Völuspá stanza 7 appears as follows in the *Codex Regius*:⁷⁹

*Hittuz æsir á Iðavelli,
þeir er hǫrg oc hof há timbroðo;
afla lǫgðo, auð smíðoðo,
tangir scópo oc tól gorðo. (7.1-8)*

The Æsir assembled at Iðavöll, those who built tall with wood an altar and a temple; they established forges, smithed precious things, formed tongs and made tools. (Lindow 2002: 197-8 with modifications)⁸⁰

Stanza 7 in *Hauksbók* reads as follows:

*Hittuz æsir á Iðavelli;
afls kostoðo, allz freistoðo,
tangir scópo oc tól gorðo. (7.1-6)*

The Æsir assembled at Iðavöll; they exerted [their] strength, made a trial of everything, formed tongs and made tools.

As can be seen above, stanza 7 has substantial variants between the *Codex Regius* (R) MS and the *Hauksbók* (H) MS. As Dronke points out, “this is the only instance in stanzas common to both texts, where H has wording totally different from R” (1997: 87). The half-lines 3 and 4 from R are omitted in H. The stanza appears much shorter in H, and this is inconsistent with the other stanzas of the poem. Also, where R reads *afla lǫgðo auð smíðoðo*, H has *afls kostoðo, allz freistoðo*.

⁷⁹ Unless otherwise noted, all quotations from *Völuspá* and other poems from the *Poetic Edda* come from the edition prepared by Gustav Neckel and Hans Kuhn (1962). All translations are my own unless otherwise noted.

⁸⁰ Hermann Pálsson points out that *timbra* translates most literally as “to build a tall structure with wood” (1996: 63).

A key issue in evaluating these variants is understanding that *afl*, if masculine, can refer to a “forge, furnace”⁸¹ or, if neuter, to “strength, vigour.”⁸² The form *afls* in H is definitely genitive singular, and could (in isolation) be either masculine or neuter. *Afla* in R could (in isolation) be interpreted as either the plural, neuter genitive of “strength, vigour” or the masculine, genitive plural or masculine, accusative plural of “forge, furnace.” The verbs in either manuscript (*kosta* “exert, try, tempt, strive” in H and *leggja* “lay, place, found, build” in R)⁸³ determine that *afla* in R is accusative plural, “forges, furnaces”, and in H *afls* is genitive (*kosta* is construed with the gen.) singular neuter, “strength, vigour.”⁸⁴ It is difficult to determine what caused this variant. It is likely that at some point in the transmission leading to H some feature of these lines became corrupt or confused and *afla* was interpreted as meaning “strength.” The text of R, the earlier manuscript, clearly presents *afla* as “forges, furnaces.”

The primary, and only, point in favour of the H text is that the substituted line about the gods testing their strengths and making trial of everything seems to operate effectively as a prelude to their encounter with the powerful and adversarial three female giants in 8.5-8. Dronke suggests that this substitution implies that “the Æsir were finding themselves in difficulties” already (1997: 88). In other words, it may be that the Æsir are already demonstrating their propensity towards testing their strengths by getting themselves into compromising positions with the giants: they are, or so this reading of the H text would suggest, already asking for trouble in stanza 7. This reading has the advantage of explaining what may otherwise seem to be an unexplained insurrection by the female giants in stanza 8. This reading also builds upon the characterization of the Æsir as powerful but trouble-making gods. As there are no explicit explanations for the sudden appearance of the three female giants in 8.5-8, this interpretation could share some connections with other sections of the narrative despite the fact that it is incongruous with the building motifs of H 7.5-6 and R 7.3-8.⁸⁵ Another issue worth considering is that the text of *Völuspá* includes several distinct

⁸¹ The definition of *afl* m. will be discussed in detail in this chapter. Translations of *afl* that are used here and elsewhere are based upon the evidence that is documented and analyzed in this chapter.

⁸² *Afl* m. and *afl* n. appear in close proximity to one another in the attestation cited below (cf. *afl* 23 and 34). Although at least one translator has confused these nouns, the original manuscripts preserve a clear distinction between the meaning of each noun.

⁸³ cf. Fritzner (1954: s.v. *kosta*, *leggja*), Cleasby-Vigfusson (1957: s.v. *kosta*, *leggja*).

⁸⁴ La Farge and Tucker point out that the similar phrase *kosta magns* or *kosta megins*, “to exert one’s strength”, appears in *Rígsþula* 9.2 and *Grottasöngur* 23.2 (1992: s.v. *kosta*).

⁸⁵ On the difficulties of interpreting narrative sequences of *Völuspá* see footnote 5 on page 3 above.

narratives that are often contradictory: this confusing rendering of stanza 7 in H could be an instance in which distinct narratives are integrated side-by-side.

The problems with the variants in *Vsp* 7, however, have to do primarily with the H text and they clearly point to 7.3-4 as a flawed substitution in H; as Dronke puts it, this is an “inept” substitution (1997: 87). In H the omission of the lines about the Æsir building altars and temples (R 7.3-4), for instance, severs a clear connection in both content and theme with the establishment of forges and the building of tools and precious items in the last half of the stanza. With these lines omitted, the final statements (*tangir scópo oc tól gorðo*) are without context and incongruous with the preceding statements according to H (*afls kostoðo, allz freistoðo*). This substituted line in H 7.3-4 about the gods testing their strength and making trials of everything is out of place between the references to building motifs that dominate the final half lines of the stanza in H. It is therefore likely that the rendering in R is more valid. Furthermore, it appears that the scribe of R corrected for an error by scratching out “*au*” in favour of “*af*” to spell *afla*. Neckel and Kuhn suggest that this is an instance of eye-skip, linked to *auð* in 7.6 (1962: 2). This might suggest that there was a tendency towards mis-transcribing or mis-interpreting this stanza, and/or that there were several manuscripts responsible for transmitting errors before R and/or between R and H. Such errors could have been behind the substitutions made in lines from stanza 7 of H.

Whether we accept the R text, which on the whole is more reliable, or the H text, the narrative sequences of *Völuspá* are enigmatic and conflicting. It is most likely that the R text, being from an earlier MS. and portraying a more consistent building motif and stanza length, is the more reliable reading. As will be discussed in more detail shortly (see *afl* 13 below on page 56), *Gylfaginning* chapter 14 also clearly paraphrases R, not H.

1.2 Extant attestations of the word *afl*.

According to Stanza 7 in R, the Æsir make *aflar* (masculine, plural, “forges, furnaces”) as part of the initial establishment of their civilization. There are two key questions to consider in relation to the role of *aflar* in stanza 7 of *Völuspá*. First, what does *afl* mean exactly? Second, what is the role of these *aflar* in the settlement that the Æsir establish in this stanza?⁸⁶

⁸⁶ A third question also applies to the usage of *afl* here: what is the role of these *aflar* and, more generally, metalworking motifs across the entire narrative of *Völuspá*? Some aspects of this third question will be briefly

The *Dictionary of Old Norse Prose (ONP)* cites thirty usages of *afl* sb. m. ranging in manuscript date from 1200 to 1725. I note here an additional nine attestations. These additions are mostly from poetic texts, but several appear in close association with attestations that *ONP* has already noted. Counting all these attestations individually, and including *Vsp* 7, makes for a total of thirty-nine attestations for *afl*. Following is this list organized according to chronology, based upon manuscript date. Bold font is used to highlight the attestations of the word *afl* in both the original language and the translation. The second attestation of *afl* (*afl* 2.) appears in the context introduced and cited above, from *Vqluspá* 7 in the *Codex Regius* manuscript. Because the objective of this chapter is to determine the meaning of this attestation, I will not examine this attestation until the end of this chapter. Therefore the following examination of attestations jumps from *afl* 1. to *afl* 3. *Afl* 2. is discussed at the conclusion of this chapter.

***afl* 1.**

The first attestation comes from the *Icelandic Homily Book* (c. 1200). This story relates the exile of John the Apostle by Emperor Domitianus. According to this story, Domitianus was later killed by having molten gold poured into his mouth:

*Peir stéypþo golli léicanda nytecono ór **afl**i. i munn honom oc déypdo hann sva. Kvaðust ætla at þa skyldi hann ærið hafa gollit.* (de Leeuw van Weenen 1993: 138 with modifications)

For jest they poured gold, freshly removed from the **forge**, into his mouth and killed him so. They said that they believe he should have enough gold.

This attestation of *afl* specifically relates to the melting or smelting of solid gold into a liquid state. It also describes the *afl* as something from which molten gold is removed and promptly poured. This suggests that the *afl* is either an enclosed space (a furnace with a walled interior space into which crucibles would be placed) or a defined but relatively open space (like the hot coals of a forge into which a crucible would be placed) with sufficient heat to melt gold. The verb *steypa* takes the dative here and refers specifically to gold. This makes it clear that the secondary meaning for the verb *steypa* (“to cast”, “to found”, specifically of metals) is being used (Fritzner 1954: s.v. *steypa*). This verb can also appear as a noun, *steypari*,

discussed in the note on Gullveig, in the excursus at the end of Chapter 2, and in the over all conclusion to this project. The focus of the current chapter is, however, primarily upon the role of these *aflar* in stanza 7 of *Vqluspá*.

referring to someone who casts metal, a brass-founder for instance (Cleasby-Vigfusson 1974: s.v. *steypa*). In more general usages, the verb *steypa* can mean “to cast down”, “overthrow” (Cleasby-Vigfusson 1957: s.v. *steypa*). This more general sense may have contributed overtones of meaning also, particularly given the political implications in this context.

***afl* 3.**

In *Konungs skuggsjá* (c. 1275) the northern lights of Greenland are compared to a piece of hot iron freshly removed from an *afl*: *ok sem þat kvóf tekr at þynna, þá tekr þat ljós annat sinni at birtask, ok þat kann at verða stundum at monnum sýnisk svá, sem þar skjóti af stórum gneistum, svá sem af sindranda jární því er nýtekit verðr or aflí* (Keyser et al. 1848: 47), “And when that smoke begins to grow thinner, then that light begins to brighten again, and that can at times happen that it seems to people that they see large sparks shooting out of it, just as from glowing iron when it is freshly removed from a **furnace**.” Here *afl* clearly refers to a forge or furnace used to heat iron to glowing-hot temperatures. Because the focus of the passage is a comparison between the northern lights and glowing iron, both of which appear to have sparks coming off them, there is little further detail to be gleaned from the use of *afl*. It can be said, however, that this usage of *afl* is not to be confused with a domestic fireplace used for cooking. The temperatures of this sort of fire would likely be insufficient to produce sparks from glowing iron, a phenomenon which indicates temperatures sufficient for metalworking and welding (Tylecote 1986: 16). The sparks coming off of the glowing iron suggest a forge or furnace powered by bellows and used primarily for metalworking purposes. It is also worth noting that the iron is *nýtekit*, “freshly removed”, from the forge or furnace, which may indicate an awareness that the metal remains at malleable temperatures only for a short while before cooling and losing its malleable properties: hence the idiomatic saying “strike while the iron is hot” and the importance of working iron when it is freshly removed from the forge.

***afl* 4.**

The fourth attestation is from the account of the famous smith Velent repetitively recreating a series of superior swords by filing down and re-working previous attempts. In the case of this attestation, Velent is producing the final and most superior blade. The metal filings of the extant sword are refined by passing through the digestive tracts of geese. This

account appears in a late thirteenth-century manuscript of *Piðreks saga af Bern* (Hom perg 4 fol, c. 1275-1300):

*Velent ferr nv til smiðio oc tecz eina þel oc þelar þetta sverð alt
isvndr i svarf eitt. Nv tekr hann svarfit oc blandar við miol. oc
þa tecz hann alifvgla oc sveltir þria daga oc þa tecz hann
miolet oc gefr fvglonvm at eta. þa tecz hann savr fvgлана oc
lætr coma i afl oc fellir oc vellr nv or iarnino alt þat er deigt
var i. Oc þar af gerir hann eitt sverð oc er þetta minna en hit
fyr. (Bertelsen 1905-11: 98-9)*

Velent goes in to the smithy and takes a file and files that sword entirely to pieces into one [pile of] file dust. Now he takes the file dust and mixes it with meal. And then he takes domesticated birds and starves them for three days and then he takes the meal and gives it to the birds to eat. Then he takes the excrement of the birds and has it placed into the **furnace** and works out and makes molten now out from within the iron all that which was soft inside. And from that he makes a sword and that is smaller than the one before it.⁸⁷

When the adjective *deigr* modifies metals it means “soft” (*ONP* 2010: s.v. *deigr*). In other contexts, *deigr* means “blunt, dull” (of a weapon) and “sluggish, faint-hearted, cowardly” (of a person) (*ONP* 2010: s.v. *deigr*). It is possible that similarly negative overtones pertain to the use of *deigr* to describe metals, i.e. “soft” may be an undesirable quality of a metal, just as a blunt weapon and a cowardly person are not as desirable as a sharp weapon and a brave person. Unfortunately, the above excerpt from *Piðreks saga af Bern* is the only attestation of *deigr* modifying metal, so there are no parallel examples to compare.

The description is, however, precise enough to make a clear assessment of what is happening metallurgically. *Deigt* is clearly the singular, neuter, accusative form and must agree with the singular *þat*, “that”. This pronoun refers to a substance that is being extracted (*fella* = “bring something into or out of a certain connection with something else”) and made molten (*vella* = “to make molten”) from within the iron (Fritzner 1954: s.v. *fella*, *vella*).⁸⁸ These two verbs, *fella* and *vella*, clearly reinforce that the *afl* in this description is an environment inside which (*lætr coma i afl*, “has it placed into a furnace”) something that is

⁸⁷ Citing Tylecote’s discussion of this passage, Mark Hall points out that, “[a]rchaeometallurgists have been trying for years to figure out what is going on in the forging of [this sword] Mímungr. It has been suggested that nitrogen or phosphorus, coming from the animal dung, could have been alloyed with the iron during smelting. Experimental evidence shows that this does not happen” (Hall 1995: 200; cf. Tylecote 1986: 192-3). While the use of goose dung remains enigmatic, the general process of working the iron here appears fairly clear.

⁸⁸ In particular, Fritzner suggests that the verb *fella* means *bringe noget ind i eller ud af en vis Forbindelse med noget andet* (1954: s.v. *fella* 6), “to bring something into or out of a certain connection with something else”.

within the iron is made soft and brought out from within the iron (which remains hard) and made molten. This description, with this particular pairing of verbs, precisely corresponds to the processes associated with a smelting furnace that is used to make bloomery iron and sponge iron. Because the unwanted impurities (which can make iron difficult to work, or cause a blade to be easily blunted or chipped) melt at a lower temperature than the iron, these impurities (also called slag) are separated from the iron within the furnace. At the conclusion of this process, a hot lump of porous sponge iron (the pores being spaces that were occupied by slag) is removed from within the furnace and immediately pounded with a hammer. This hammering forces out any remaining impurities that are still inside the iron. The distinction between that which is *deigr*, “soft”, within the iron, and that which is not soft (i.e. the iron itself) clearly corresponds to the distinction between the undesirable slag (which is extracted) and the desirable refined iron (which is made into the sword). This also explains Velent’s process for producing a sequence of swords, each one with a better cutting edge than the one before it. None of these swords are blunt, but each successive attempt produces a sword that is even sharper (i.e. less soft, *deigr*) than the last. This is presumably because more of the impurities that cause a sword to be blunt have been removed.⁸⁹

Therefore, in this case *afl* explicitly refers to an iron-smelting furnace. However, some extensive blacksmithing is also implied in this attestation, so an open forge must also be involved. While the verb *vella* refers only to the action of making something molten (which in this case is most likely accomplished in a furnace), *fella* in this context implies a combination of smelting (i.e. using a furnace) and blacksmithing (i.e. using an open forge). It is possible that Velent uses the furnace to smelt the iron filings and then uses the demolished base of this furnace to heat and hammer repeatedly the porous sponge iron until the pores are completely welded shut and all of the slag impurities have been excised. This process is necessary in order to produce a wrought-iron ingot, from which Velent then makes the sword. Darrell Markewitz suggests that the base of smelting furnaces, after the upper shaft has been destroyed, could make ideal forges for such blacksmithing activities.⁹⁰ It is also

⁸⁹ Metallurgically, another factor to consider is the amount of carbon that goes into solution with the iron during these smelting processes. This carbon has a direct effect on the ability of the iron to hold a sharp cutting edge: the more carbon, the more sharp and brittle the blade. The carbon transfer, however, is not as readily observable as the liquating of the slag out of the sponge iron as it is smelted and then hammered.

⁹⁰ Markewitz comments upon the “remains of the still hot furnace” after an experimental iron smelting procedure: “It would be possible to charge fresh charcoal to use the furnace base like a giant forge. In truth the working team decided they were too tired to proceed with this” (2009: “Smelt Report – Vinland 3 / November 7, 2009”).

possible that Velent has a separate open forge, powered by charcoal and bellows, which he uses to heat and hammer repeatedly the porous sponge iron until it has been made into wrought iron. He would certainly need an open forge for the many hours of work necessary to shape and temper a wrought-iron ingot into a finished sword of the quality this saga describes.⁹¹

In summary, *afl* explicitly refers to a smelting furnace in this attestation. Ongoing blacksmithing activities (e.g. hammering, shaping, tempering) are also implied that would make use of an open forge. Although a workshop (with a file and several other tools) is clearly implied, *afl* refers more specifically to the furnace associated with this space. It is possibly significant that Velent has access to domesticated birds and meal: these features may suggest that his workshop is associated with an agrarian complex.

afl 5-6

In the same late thirteenth-century manuscript of *Þiðreks saga af Bern*, the master-smith Mimir tries to teach young Sigurðr a lesson in the smithy:

*Nv sæzt Mimir firir **aflenn** oc tecz æitt mikit iarn. oc lætr i ælld oc æina þyngstv slægiv. oc selldi Sigurði. en er iarnit var heitt orðit bregðr han því or **alfinum** oc a steðian oc biðr Sigurð nu til leosta. Sigurðr lystr et fyrsta hog sua fast at steðia steinen klofnaði en steðin gengr niðr allt til hausens en iarnit rytr ibrott en tongin brestr i sundr við slegiv skaptit oc kemr feari niðr.* (Bertelsen 1905-11: 307-8)

Now Mimir placed himself before the **forge** and took out one large piece of iron and placed it in the fire and took the heaviest hammer and gave it to Sigurðr. And when the iron had become hot he drew it out of the **forge** and on to the anvil and told Sigurðr now to strike it. Sigurðr struck the first stroke so hard that the anvil stone was split and the anvil went down [into the ground] to its head and the iron flew away and the tongs broke apart against the hammer shaft and went far down [into the ground].

In these two attestations *afl* refers to a forge used to work hot iron. The *afl* here is associated with tongs, an anvil stone and a large bar of iron that apparently needs to be hammered. There is no mention, however, of the need to refine small pieces of impure iron into ingots, as Velent does in *afl* 4. Instead, it seems that large, prepared ingots are stored on site. This

⁹¹ Jim Hrisoulas, for instance, suggests that the Norse “were some of the greatest swordsmiths and metal craftsmen the world has ever seen” and that their methods were very effective (Hrisoulas 1987: 143-4, 146). Hrisoulas suggests that these smiths would spend upwards of 100-125 hours forging a single sword blade.

appears to be a blacksmithing operation, and the forge is clearly close to the anvil-stone so as to enable the smith to quickly work the metal before it cools.

afl 7.

The seventh attestation is from king Ráðbarðr's dream-vision, in *Knýtlinga Saga* (c. 1300):

*Þat var eina nótt, er konungr svaf á dreka sínum í lyptingu, at honum sýndisk sem dreki mikill flygi útan af hafinu ok þótti litr hans sem gull eitt ok sindra af honum upp á himininn, sem síur flygi ór **afl**i, ok lýsir á ǫll lǫnd in næstu af honum. (ÍF 35 1982: 53-4)*

That was one night, when the king was sleeping on the raised deck of his ship, that to him it seemed as though a great dragon flew in from the harbour, and he thought the colour was like sheer gold and sparks from it flew up into the sky like molten metal from a **forge**, and [it] lit up all the lands near him.

This attestation suggests an explosive display of sparks, light and heat associated with an *afl*. *Síá* refers to “any glowing substance” and especially molten metals in a furnace (Fritzner 1954: s.v. *síá*; Cleasby-Vigfusson 1957: s.v. *síá*). The comparison of the effects of this dragon to sparks and molten metal exuding from an *afl* demonstrates that the *afl* is understood as a forge or furnace that is used specifically for heating metals to temperatures at which they melt. The reference to *gull eitt*, “sheer gold”,⁹² suggests that some association with purifying gold may also be understood, in which case an open forge (with crucible) would be the primary sense of *afl*.

afl 8.

Saga Sverris Konungs was probably written during the late twelfth century and finished before Snorri Sturluson began composing *Heimskringla* in the 1220s. The earliest manuscript that survives, however, is from c. 1300. The context for this attestation is a dream that Gunnhildr has before she gives birth to Sverri. In this dream, Gunnhildr sees her newly-born child as a white-hot stone: *henni syndist sem þat væri einn steinn vel mikill oc sniohvitr at lit. En hann gloaðe sva miok, at alla vega gneistaði af honom sem af gloanda iarni því er akafliga er blasit i **afl**i* (Indrebø 1920: 2 with modifications), “it seemed to her that it was a

⁹² Cleasby-Vigfusson notes that when *einn* appears following a noun it operates with senses like “only” and “sheer” (Cleasby-Vigfusson 1957: s.v. *einn*). In this attestation, therefore, *gull eitt* refers to “sheer gold” or “pure gold.”

stone, very large and snow-white in colour: and it glowed so greatly, so that in all directions sparks shot off of it, just as from glowing iron which is blown vigorously in the **forge**.”⁹³ In this instance *afl* denotes a forge or furnace used to heat iron to white-hot temperatures. The association with bellows (*akafliga ... blasit*) is clear and makes sense in relation to the necessity for such airflow to produce high temperatures (indicated by white colouration of the metal) at which pieces of iron might be welded together. A sense of the interiority of a walled furnace might be implied, particularly in the context of the birthing scene: the child is produced from the womb in this dream just as a piece of hot iron might be produced from a furnace. There is, however, no explicit sense of an interior space here and it remains unclear whether an enclosed furnace or an open forge is being referred to. The comparison suggests that an appeal is being made to the experience of witnessing a glowing piece of iron inside an *afl*. Thus, it is logical that a line of sight should be possible to the iron inside the *afl*. This indicates an open forge with bellows as the most likely option, since a clear line of sight to the iron ingot in a furnace is less plausible.

afl 9.

Haraldr Sigurðson’s last words before his death read as follows according to *Hemings þátrr Áslákssonar* (c. 1302-1310): *Tosti geck at konvngi ok spvrdi hvart hann var sar. Konvngs svarar litið jarn var mer sent en þers venti ek at þat hafi eigi til enkis erindis ór aflri verið borið* (Fellows-Jensen 1962: 52), “Tosti went to the king and asked whether he was wounded. The king answers “a little [piece of] iron was sent to me but there where”⁹⁴ I expected that [it] has not been brought out of the **forge** without any purpose.” Here *afl* is understood as a forge that is used to create iron arrowheads, the *litið jarn* that Haraldr fatally receives. This attestation is unique: no other *afl* attestations refer explicitly to the production of arrowheads. The *afl* here is a space out of which the finished arrowhead is brought: this could refer to a forge directly, but it is also possible that this attestation refers more generally to a workshop space or edifice in which metals are worked using forges and furnaces as well as other tools.

⁹³ Cleasby-Vigfusson suggests only “red-hot” as a meaning for the adjectival form of *glóa* (1957: s.v. *glóa*). In this context, where the subject of the description is obviously white and hot it is clear that “red-hot” is inappropriate. The colour of metals varies according to the temperature they are at. In this case it seems that the temperature being referred to in the comparison is far hotter than “red-hot.”

⁹⁴ i.e. the arrowhead is a relatively small delivery from the forge, but it is fatal because of where exactly it has been delivered.

afl 10-11.

The tenth and eleventh attestations are from the following passage in the Old Norse translation of *Elucidarius* (c. 1290-1334). Here, the Master explains to the Disciple why God made the devil a smith in the fallen world as a punishment:

*Þvi at hann firir leit at vera ængla hofðingi ahimni þa gerðe
gvð hann starfsaman smið i heimi at hann þio[-]nadi navðigr
menn illv erviði þa er hann villdi eigi ærviðis lavst þio[-]na
gvði i himnum vppi sem ritit er Gera man ek hann þer eilifan
þrel Þessar smiðs **aflar** ero qvalar heims Smið bælgir hans
ablastar fræstni hamrar hans ok tænggr ero ofriðar menn ok
qveliaðrar þælar⁹⁵ hans ok sag[-]ðer ero bolvenðr ok
bakmalogar tvngvr Þpesso **afle** ok með þessom to[-]lvm
hræinsazc gvlker himna konongss þat ero hælgr menn en
vandær pinaz i dyflizv hans þeir er moti gera himna kononge
apessa lund pionkar diavvll gvði. (Firchow 1992: 56 with
modifications)*

Because the devil abandoned his leadership of the angels in heaven, God made him an industrious smith in the world so that he unwillingly served people with evil work, since he did not want to serve God in heaven without work, as is written: I shall make him your servant forever (Job 40:23/41:4). This smith's **forges** are the torments of the world. His bellows are the inspirations of temptation. His hammers and tongs are his enemies and his tormentors. His files and his saws are swearing and back-talking tongues. In this **forge** and with these tools the golden vessel of the King of Heaven is cleansed – that is the saints. The wicked – that is those who work against the King of Heaven – are tormented in his dungeon. In this way the devil serves God. (Firchow 1992: 57, 59 with modifications)

In the first attestation here (*afl* 10), the Old Norse translator selects *smiðs aflar* as a translation of the Latin *Cujus fabri caminus* (Firchow and Grimstad 1989: 93). The *afl* is associated with specific metal-smithing tools, such as bellows, hammers and tongs. It is somewhat unclear whether *aflar* refers to specific forges and/or furnaces, or whether this refers to a workshop space in general. This description operates as a list of smithing equipment and it is therefore plausible that *aflar* refers to additional equipment (e.g. specific furnaces or forges) within the workshop area that contains these structures and the associated tools. The description is not, however, clear enough to rule out the possibility that *aflar* may

⁹⁵ The Old Norse text here actually reads *þrælar*, “slaves”, not *þælar*, “files” (Firchow 1992: 56). Firchow notes, however, that the “Latin text reads *limae et serrae* (files and saws) which is also the reading provided by AM 685b, 4to, fol. 1r, 7-8” (1992: 109). I emend the Old Norse in keeping with this.

refer to the workshop area itself. It is clear that there are multiple *aflar* referred to here, and this is a rare plural reference to *aflar* in the Norse corpus, the only other such examples being in *Gylf* 14 and *Vsp* 7 (cf. *afl* 2 and *afl* 13 below). The second attestation (*afl* 11) is consistent with the context of the first (*afl* 10): it is clear that the same smithing scene is referred to. But *afl* 11 is in the singular and therefore may suggest that *afl* in this case refers to the workshop area that encompasses the multiple *aflar*, “furnaces/forges”, referred to earlier in this passage. Once again, it remains unclear whether *afl* 11 is meant to refer to an individual forge or furnace or to the entire workshop area. The metaphorical nature of these attestations may also bring such specific distinctions between the singular and plural into question: the description, with its dominant interest in spiritual symbolism, may not be consistent in such detailed distinctions. In this eleventh attestation the translator uses *afl* as a translation of the Latin *caminus* (Firchow and Grimstad 1989: 93).

***afl* 12.**

ONP cites as a separate attestation a slightly later manuscript variant⁹⁶ of *Sverris saga*: *alla uega gneistaði af honum (∴ steininum) sem af iarni þui er renr firi afli* (Finnur 1916: 256), “in all directions sparks shot off of it, just as from iron which melts before a **forge**.” As in the earlier manuscript (cf. *afl* 8 above), this attestation also associates *afl* with heating iron to the white-hot temperatures at which sparks shoot off of it readily. By comparison with *afl* 8, this attestation presents little further information about the *afl*, with one important exception. The description of the iron in association with the verb *renna* is significant. In usages with water or bodies of water, *renna* tends to mean “flow” (Cleasby-Vigfusson 1957: s.v. *renna*; Fritzner 1954: s.v. *renna*). In usages with metals, however, the verb tends to mean “run, melt, dissolve”. Clearly this is a description of molten metal “running” in front of an *afl*, and this suggests that the *afl* is meant to refer to a furnace capable of reaching higher temperatures than an open forge. This also suggests that the molten metal is slag, not the iron itself because the furnaces of this period were not generally capable of melting iron.

⁹⁶ *Eirspennill*, AM 47 fol, c. 1300-1325.

afl 13.

At least ten attestations of *afl* appear in *Snorra Edda*, which was arguably first composed by Snorri Sturluson in the early thirteenth century. The oldest extant manuscript is from c. 1300-1350. The first attestations in *SnE* appear in a paraphrase of *Vsp* 7 in chapter 14 of *Gylfaginning*:

*Þat var þar sem heitir Iðavöllr í miðri borginni. Var þat hit fyrsta þeira verk at gera hof þat er sæti þeira standa í, tólf qnnur en hásætir þat er Alföðr á. Þat hús er bezt gert á jörðu ok mest. Allt er þat útan ok innan svá sem gull eitt. Í þeim stað kalla menn Glaðsheim. Annan sal gerðu þeir, þat var hqgr er gyðjurnar áttu, ok var hann allfagr. Þat hús kalla men Vingólf. Þar næst gerðu þeir þat at þeir lqgðu **afla** ok þar til gerðu þeir hamar ok tng ok steðja ok þaðan af ql tól qnnur.* (Faulkes 2000: 15)

‘This was in the place called Iðavöll in the centre of the city. It was their first work to build the temple that their thrones stand in, twelve in addition to the throne that belongs to All-father. This building is the best that is built on earth and the biggest. Outside and inside seems like nothing but gold. The place is called Glaðsheimr. They built another hall, this was the sanctuary that belonged to the goddesses, and it was very beautiful. This building is called Vingólf. The next thing they did was establish **forges** and for them they made hammer and tongs and anvil, and with these they made all other tools.’ (Faulkes 2001a: 16 with modifications)

This paraphrase is similar in its usage of *aflar* to *Vsp* 7 (cf. *afl* 2 below) and follows R rather than H.⁹⁷ There are, however, several differences between this prose paraphrase and the text of *Vsp* 7 as it appears in R. Whereas *Vsp* 7 mentions the ambiguous *auð*, “precious things” as products associated with the *aflar*, *Gylf* 14 does not mention *auð*. *Gylf* 14 instead refers to *aflar* in relation to the production and use of hammers, tongs and anvils, as well as the capacity to make all other tools. This latter remark about making all other tools emphasizes the foundational role of these *aflar* in establishing the civilization of the Æsir. *Gylf* 14 makes it clear that the *aflar* refer to forges (and perhaps furnaces) that are distinct from but essential to workshops. From the forges come the hammers, tongs and anvils that are used in a metalworking workshop, and with these tools (and the forges) all other tools can be made, likely from metals and from other materials using metal tools.

⁹⁷ See the discussion at the beginning of this chapter (starting on page 44) of the variants in *Vsp* 7 in R and H.

afl 14-21.

ONP identifies four separate attestations of *afl* from one short prose section of *SnE*, in this case from *Skáldskaparmál* chapter 35. There are, in fact, twice as many attestations in this passage. The context may be paraphrased as follows. Loki cuts off Sif's (Þórr's wife) hair. To save himself from Þórr's anger, Loki agrees to enlist the dwarfs known as the sons of Ívaldi to make a new head of hair for Sif entirely out of gold. The dwarfs do this, and in addition they make the magic ship *Skíðblaðnir* and Óðinn's spear, *Gungnir*. Loki then wagers his head with a dwarf named *Brokkr*, challenging *Brokkr* that his brother *Eitri* could not make three things as good as the things the sons of Ívaldi had made. The narration then proceeds to detail the process by which *Eitri* and his brother *Brokkr* forge the gods' second set of three magical gifts.

During this passage the word *afl* is used eight times in just nine sentences or two hundred and one words:

*En er þeir kómu til smiðju, þá lagði Eitri svínskinn í **aflinn** ok bað blása Brokk ok létta eigi fyrr en at tæki þat ór **aflinum** er hann lagði í. En þegar er hann gekk ór smiðjunni en hinn blés, þá settisk fluga ein á hönd honum ok kroppaði, en hann blés sem áðr þar til smiðrinn tók ór **aflinum**, ok var þat góltr ok var burstin ór gulli. Því næst lagði hann í **aflinn** gull ok bað hann blása ok hætta eigi fyrr blæstrinum en hann kvæmi aptr. Gekk á braut. En þá kom flugan ok settisk á háls honum ok kroppaði nú hálfu fastara, en hann blés þar til er smiðrinn tók ór **aflinum** gullhring þann er Draupnir heitir. Þá lagði hann járn í **aflinn** ok bað hann blása ok sagði at ónýtt mundi verða ef blástrinn felli. Þá settisk flugann milli augna honum ok kroppaði hvarmana, en er blóðit fell í augun svá at hann sá ekki, þá greip hann til hendinni sem skjótast meðan belgrinn lagðisk niðr ok sveipti af sér flugunni. Ok þá kom þar smiðrinn at, sagði at nú lagði nær at alt mundi ónýtask er í **aflinum** var. Þá tók hann ór **aflinum** hamar. (Faulkes 1998a: 42)*

And when they came to the workshop, *Eitri* put a pig's hide in the **forge** and told *Brokkr* to blow and not to stop until he took out of the **forge** what he had put in. And as soon as he [*Eitri*] left the workshop and he [*Brokkr*] blew, then a fly settled itself on his [*Brokkr*'s] arm and nibbled, but he blew as before until the smith took his work out of the **forge**, and it was a boar and its bristles were made of gold. Then next he [*Eitri*] put gold into the **forge** and told him [*Brokkr*] to blow and not stop the blowing before he came back; he [*Eitri*] went out. And then the fly came and settled itself on his [*Brokkr*'s] neck and nibbled

twice as hard, but he blew until the smith took from the **forge** a gold ring called Draupnir. Then he [Eitri] put iron in the **forge** and told him [Brokkr] to blow and said it would turn out not good if the blowing ceased. Then the fly settled itself between his [Brokkr's] eyes and nibbled his eyelids, and when the blood dripped into the eyes so that he could not see, then he struck at it quickly with his hand while the bellows was on its way down and swept the fly away. And then the smith came back, saying it now lay on the brink of everything in the **forge** being ruined. Then he took out of the **forge** a hammer. (Faulkes 2001a: 96 with modifications)

This passage is rather literary or folkloric in nature, and it refers generally to multiple, distinct smithing processes (i.e. both ferrous and non-ferrous) as part of one and the same sort of incubation concept.⁹⁸ Nonetheless, in this case *afl* repetitively and consistently refers to the interior space of a forge or furnace, heated by bellows, in which these metallic gifts are made. This is clearly a furnace or forge for metalworking, and since finished artefacts are made (i.e. as opposed to refined but unfinished metal ingots) it seems most likely that a forge is being used. Furnaces in this period are predominantly associated with iron smelting, while forges are associated with blacksmithing and non-ferrous metalwork that yields finished artefacts. During this repeated process the smith Eitri inserts a pig's hide to create the golden boar Gullinborsti, a piece of gold to create the golden ring Draupnir, and a piece of iron to create Pórr's hammer, Mjöllnir. In all three instances it is clear that the *afl* is being used to transform materials (usually metals) in order to produce a precious item (either made of metal or closely associated with metal).

It is also clear that this *afl* has a distinct and likely hidden interior space into which materials are placed and from which products are removed. The passage gives the impression that it is not known what transformation has taken place until Eitri returns and removes the product from the *afl*. Thus it is possible, though not necessarily the case, that some sort of structure impedes a line of site to the metal inside the *afl*. This *afl* could be understood as an enclosed furnace rather than an open forge, or as an open forge with some sort of implied structure or perhaps charcoal partly obscuring the metal. This passage also clearly demonstrates a distinction between the *afl* as a defined structure with its own interior space and the workshop space or edifice in itself: the repeated entrances and exits clearly establish

⁹⁸ As noted in the "Survey of metallurgical processes associated with forges and furnaces" in the "Introduction" to this dissertation, the tools and mechanisms involved in refining and producing gold (non-ferrous) and iron (ferrous) artefacts are distinct in many ways.

a distinction between Eitri entering and exiting the workshop area (while Brokkr remains inside) and Eitri inserting and removing items from the *afl* itself. There is an inside space to this *afl* just as there is an inside space to the workshop area or edifice. This distinction is important: in this context it is clear that the term *afl* is meant to refer specifically to the furnace or forge and its interior space rather than referring either directly or metonymically to the workshop space that contains the forge and/or furnace.⁹⁹ Although the bellows are identified as a crucial aspect of successful smithing here, there is no mention of tongs, anvils or other tools. In this instance from *SnE* *afl* refers to a forge with a distinct interior space and there is a clear relation between the maintenance of the airflow to the fire and the success of the transformation that is achieved inside the furnace.¹⁰⁰

It is important in relation to other evidence, particularly the Snaptun forge stone (see page 22 above), to note how this narrative concludes according to *Skáldskaparmál*. This second set of three gifts are judged as better than the first set that were made by the sons of Ívaldi. Therefore Brokkr seeks to claim Loki's head as per the terms of the original wager. Once caught and under the knife, Loki saves his head by stating that the dwarf has every right to his head but none whatsoever to his neck: *Loki sagði at hann átti hofuð en eigi hálsinn* (Faulkes 1998a: 43), "Loki said that he had the head but not the neck." In his rage, Brokkr summons an *alr* "awl", which pierces Loki's lips and sews them shut: *þá var þar alrinn ok beit hann varrarnar. Rifaði hann saman varrarnar ok reif ór æsunum. Sá þvengr er muðrinn Loka var saman rifaðr heitir Vartari* (Faulkes 1998a: 43), "then the awl was there, and it pierced the lips. He stitched the lips together, and it tore the edges off. The thong that Loki's mouth was stitched up with is called Vartari" (Faulkes 2001a: 97 with modifications).

***afl* 22.**

In addition to *Vsp* 7, there are two more poetic attestations¹⁰¹ of *afl*. The first of these appears in *Snorra Edda*, in stanza fifteen of Eilífr Goðrúnarson's *Pórsdrápa*:

⁹⁹ A modern analogy would be to distinguish clearly between the kitchen versus the oven itself within that kitchen.

¹⁰⁰ There is also a clear distinction between the actions attributed to Eitri and Brokkr: Brokkr seems subordinate to Eitri in that the former takes orders from the latter. Eitri seems to be responsible for the selection of material and the timing of the incubation within the furnace. Brokkr is responsible for the working of the bellows. For further information on distinctions between skilled smiths and the workforces they manage in the smithy, see the discussion of Skalla-Grímr and similar figures in Chapter 2 (page 180 and following).

¹⁰¹ Other poetic attestations have been suggested but are mistaken. *LP* suggests that *afl* "furnace, forge" appears in a *lausavísa* attributed to Þjóðólfr Arnorson (1931: s.v *afl* m.). The usage in Þjóðólfr's stanza is actually the

*Fátíða nam fræði,
 (fjarðeplis) kon Jarðar
 (Mærar legs ne mýgðu
 menn qlteiti) kenna.
 Álmtaugar laust ægir
 angrþjóf sega tangar
 Óðins **afl**i soðnum
 áttuðr í gin Suðra.* (Faulkes 1998a: 29)

Jorð's son began to display unusual knowledge [skill], and the men [giants] of the fjord-apple-[rock-]moor-lair [mountain cave] did not suppress their ale-joy. The bow-string-troubler [warrior, Geirrøðr], relative of Suðri, struck with **forge**-cooked tongs-morsel [glowing lump of metal] at the mouth of Óðin's sorrow-stealer [helper, Þórr]. (Faulkes 2001a: 85 with modifications)

Within this stanza of Eilífr's *Þórsdrápa*, *afl* is a device closely associated with tongs, heat and glowing metal. It is not, however, exclusively associated with metalworking in this context. The verb *sóðna*, "to become sodden, cooked, boiled" (Cleasby-Vigfusson 1957: s.v. *sóðna*), introduces a (perhaps ironic) metaphor of preparing food by use of a cooking fire. Eilífr develops the smithing imagery alongside this cooking and feasting metaphor in both stanzas fifteen and sixteen. As though Þórr were giving a toast with a cup raised in his hand, Þórr, "the speedy-hastener of battle, swallowed in the quick bite of his hands the raised drink of molten metal in the air" (Faulkes 2001a: 85 with modifications), *Svá at hraðskyndir handa / hrapmunnum svalg gunnar / lyptisylg á lopti / langvinr síu* (Faulkes 1998a: 29). In stanza eighteen another key piece of vocabulary enters the picture. Here, Þórr is referred to with the kenning *salvanið-Synjar arinbauti*. Faulkes interprets this as a "double tmesis, or perhaps

adverbial form of *afl* n., meaning "strongly, powerfully". The context here is consciously playing off of Eilífr's *Þórsdrápa*, and it contains several smithing motifs:

*Varp ór þrætu þorpi
 Þórr smiðbelgja stórra
 hvápts eldingum hólðnum
 hafra kjöts at jötni.
 Hljóðgreipum tók húða
 hrøkkviskafls af afli
 glaðr við galdra smiðju
 Geirrøðr síu þeiri.
 [...]*

The Þórr <god> of huge forge-bellows [SMITH] flung jaw-lightnings [INSULTS] from his quarrel hamlet [MOUTH] at the proud giant of goats' flesh [TANNER]. The cheerful Geirrøðr <giant> of the curving scraper of hides [TANNER] took in with his sound-grabbers [EARS] that molten substance of the smithy of spells [MOUTH > INSULTS], powerfully. (SPSMA 2 2009: 169-70)

rather as interchange of the elements of the kenning”, which should be interpreted as *salvaniðbauti arin-Synjar*, “The beater [Þórr] of the frequenter [giant] of hearth-Syn’s [giantess’s] dwelling” (Faulkes 1998a: 29 176; Faulkes 2001a: 85 with modifications). The *arinn* in this kenning clearly refers to a domestic hearth or fireplace, and it can in some cases refer metonymically to a place of residence or home (*ONP* 2010: s.v. *arinn*). *Arinn* appears in close association with *salvaniðr*, an adjective for a person who is “hall-accustomed, hall-frequenting, hall-visiting” (Faulkes 1998a: 381). There is clearly a distinction between the usage of *arinn* in relation to the domestic denotations of the adjective *salvaniðr* and the usage of *afl* in relation to the smithing motifs and allusions of these stanzas.

It is worth asking how it is that Geirrðr acquires a glowing-hot piece of iron inside his own hall. It is possible that a forge is located inside the hall (Wallace 2006: 38-40), or that this is a reference to a domestic tool, a hot iron poker or fire-iron (*ON arinsjár*) associated with the domestic hearth or cooking fire (*ONP* 2010: s.v. *arins-járn*; Fritzner 1954: s.v. *arinsjár*; Cleasby-Vigfusson 1957: s.v. *arinsjár*). At any rate, the coupling of the smithing and cooking allusions may create the impression that this antagonistic tossing back and forth of a hot iron ingot is like the passing of cooked food or drinking cups at a feast (or perhaps the exchange of projectiles in battle).¹⁰² More generally, the effect may be a parody of gift exchange motifs, with Þórr being a guest in Geirrðr’s hall. It remains clear, however, that what is in fact being exchanged is a glowing piece of iron. Although the cooking metaphor is present here, smithing motifs are certainly also operative elsewhere in Eilífr’s poem. While crossing a river, Þórr is described as using a *hlýmpél*, “banging-file”, and the rocks of the riverbed are described as *steðjar*, “anvils” (Faulkes 1998a: 27). The kenning *hallland*, “land of the (whet)stone”, is also used to refer to a sword (Faulkes 1998a: 27). Although in some stanzas of this poem the cooking of food and the heating/working of metal appear in close parallel, the skills and tools of cooking and smithing are clearly understood as distinct. *Afl* here has a primary meaning of a furnace or forge that heats iron pieces to glowing-hot temperatures, but the choice of the verb *sjóða* situates this attestation

¹⁰² Roberta Frank interprets this as a “digestive metaphor” operating in the base words of these kennings, while the determinants situate Geirrðr in a setting similar to a workshop with “his blacksmith tongs [...] fire, sparks, and furnace” (Frank 1986: 98). See also Margaret Clunies Ross’s “An interpretation of the myth of Þórr’s encounter with Geirrðr and his daughters” (1981: 370-91), and Clunies Ross and Martin, “Narrative structures and intertextuality in *Snorra Edda*: the example of Þórr’s encounter with Geirrðr” (1986: 56-72).

within a context that closely parallels (in abstract poetic terms) cooking and smithing while maintaining that each is distinct from the other.¹⁰³

afl 23.

There is a single attestation in the *Íslandske Annaler* (c. 1362-1380), which also appears in a corresponding account in a later manuscript of *Laurentius saga biskups* (c. 1530).¹⁰⁴ The account for the year 1300 relates that there were several momentous earthquakes and that an eruption split open the peak of Hekla on the thirteenth of July:

*Elldz vpp kuama j Heklufelle med sua miklu afle at fiallit
rifnade sua at siaz mun megha medal (!) Island er bygdt. J
þeim ellde leku laus biorgh stor sem kol aa afle sua at af þeira
samkuomu vrdu brestir sua storir at heyrde norðr vm land ok
vida annars stadar.* (Storm 1888: 262)

An upsurge of fire within Mount Hekla with such great force that the mountain split open so that it will be seen as long as Iceland is inhabited. Within that fire great, loose boulders banged like embers in a **furnace** such that at their impact such great crashes occurred that they were heard north about the land and widely in other places.

This attestation situates *afl* m. “furnace, forge” in close proximity to *afl* n. “strength, power.” In the second sentence it is grammatically possible that *afle* could refer to either the neuter or masculine nouns, but the semantics do not permit the second instance of *afl* to be understood as “strength, power, force.” Oliver Elton elects to translate this second sentence as follows: “In this fire great stones whirled wildly about like coal in hardness” (Elton 1890: 23-4). “Hardness” would properly be *harka* or *harðindi*, not the neuter noun *afl*. Therefore, as the *ONP* establishes, in this context *afl* refers to “furnace, forge.”

The above passage compares the activity of an *afl* to the volcanic activity of Hekla. This comparison is not very precise in regards to an understanding of *afl*. The giant boulders within the cloven peak of Hekla are compared to the hot embers within an *afl*: thus, the *afl* is understood as containing hot embers and therefore *afl*, in these circumstances, likely refers to a furnace or forge (the spaces that contain hot embers) rather than to a workshop space which

¹⁰³ See also Clunies Ross’s discussion of *Þórsdrápa* in relation to crafting motifs and the possibility that a “historical event” (i.e. a quarrel between a blacksmith and a tanner) may have inspired King Haraldr harðráði to ask his skald Þjóðólfr Arnórsson to make a poem about a similar fight between mythological craftsmen (Clunies Ross 2005: 115-7). Clunies Ross points out that the myth Þjóðólfr used “as the basis for this comparison” is the encounter between Þórr and Geirrþóðr (see footnote 54 on page 27 above).

¹⁰⁴ See below, *afl* 34 (page 71).

more generally contains or is associated with forges and furnaces. In this case it is not immediately clear whether or not *afl* can refer to a more domestic type of fire: the essential quality in this instance seems to be that glowing coals are involved, not necessarily metals or tools. It may be, however, that this passage also implies a comparison between the volcanic activity and the violence, energy, heat and perhaps even the noise of an *afl*: if this is the case, then this usage of *afl* would be more closely or exclusively associated with smithing workshops and activities. But the description of this violence and noise is primarily in relation to the volcanic event; no direct comparison is made between these terms and the *afl*. It may be that the interiority and elevated structure of Hekla are also understood as analogous to the interiority and elevated structure of the *afl* in this usage. If this is the case, it would suggest a raised shaft-furnace rather than an open forge. But this too is at best an implied and indirect comparison. In this passage, the concept of the *afl* is secondary to the aim of describing the volcanic event. The primary analogy is between the hot boulders of the volcano and the glowing embers of the *afl*.

***afl* 24.**

The late fourteenth-century *Díalógar Gregors páfa* (c. 1350-1400) uses *afl* to emphasize the qualities of newly forged gold coins: *ok sa þar liggja .xii. gullpenninga sva biarta, sem nyteknir veri ur afli* (Unger 1877: 194), “and so there lay twelve golden coins so bright it seemed they were freshly taken out of a **forge**.” This attestation demonstrates that *aflar* were understood as a source of gold coins. The level of precision in this attestation is questionable: the phrase is perhaps more colloquial than literal. Coins were made using dies or stamps, and they were best stamped when hot but not molten. This sentence is not to be interpreted as “like coins freshly taken out of a die (*afl*).” *Afl* is clearly not to be confused with the Old Icelandic word *mót*, “stamp, mark” (Fritzner 1954: s.v. *mót*; Cleasby-Vigfusson 1957: s.v. *mót*). This attestation refers to coins that have been freshly made. Thus, it is possibly but not necessarily the case that this attestation more generally refers to the workshop area (as opposed to the forge specifically) out of which newly made coins come. It is also possible that this attestation demonstrates an inaccurate understanding of how coins are made or that the phrase should only be taken idiomatically.

afl 25.

In the c. 1400 *Vitæ Patrum* there is a story about holy Apellen, *virðuligan prest* [...] *ráðvandan ok rettlatan* (Unger 1877: 437), “a venerable priest [...] honest and just.” Apellen is also a skilled smith and he uses these skills to defend himself against the seductive arts of the devil:

*hann var iarnsmidr ok smidadi þa lute, er þurft brædra beiddi. Nockurn tima nær midnætti sneri fiandinn a sik furduligri fegrd einnar ungrar konu, sotti sidan a fund guds mannz Apellen, þar er hann vakti at smidiuverke sinu, sva sem bidiande smidar. Heilagr Apellen greip þegar gloanda iarnit or **aflinum** berri hende ok rak framan a kvefit¹⁰⁵ þesse nykomnu konu. En hon flyde þegar i brott ylande ok emiande, sva at allir brædr er umhverfiss bioggu heyrðu hennar aumliga op ok emian. Þadan af hafði heilagr Apellen alldri tǫng, helldr hellt i veniu med berri hende at hallda á gloanda iarne, ok sakade hann ecki.*
(Unger 1877: 437)

He [Apellen] was an iron-smith and worked with metal then bent over, as [the] need of [the] brothers demanded. A certain time close to midnight the devil turned himself into a marvelous beauty of one young woman, [the devil] sought afterwards to meet Apellen man of god, there where he awoke to his smithy-work, just as a wooer of [the] smith. Holy Apellen seized at once the glowing iron out of the **forge** with a bare hand and thrust [the glowing iron] on the front part of the nose of this recently arrived woman. And she fled away from there yelling and howling, such that all [the] brothers who dwelt all around heard her wretched crying and howling. From that time onwards holy Apellen never had [a pair of] tongs, rather [he] grasped in habit with a bare hand to hold onto glowing iron, and he was not harmed by it.

In this case, *afl* is a translation of the Latin *fornax* (cf. Unger 1877: 437). Here *afl* is understood as a space from which glowing-hot iron is removed, usually using tongs. In the case of holy Apellen, however, his miraculous qualities enable him to use his bare hands to handle the glowing iron. The *afl* in this context is also understood as distinct from the smith's workshop: the devil/woman enters the workshop and holy Apellen removes the glowing iron from the *afl* which is within that workshop space. This causes the devil/woman to once again exit the workshop space that contains the *afl*. This workshop also appears to be part of the

¹⁰⁵ Fritzner points out that *kvef* appears to be a *hapax legomenon* but is also clearly a translation of the Latin *faciem*, “face” (1954: s.v. *kvef*). Russell Poole suggests the Old Icelandic text should read *nefit*, “the nose”, rather than *kvefit* (pers. comm.).

communal structure within the monastery, and Apellen appears to be responsible for fabricating metal tools to satisfy the needs of the other priests.

afl 26.

The final poetic attestation for *afl* is in the anonymous *Gátur* 2 (c. 1400). In this riddle each line (or in some cases more than one line) is meant to refer to the name of a bird:

*Enn sák fljúga
qðru sinni:
skorinn línskauda
ok skip Þráins,
járn ór **afl**i,
útleidda sál,
konu kjotnefnda
fyr kvið neðan.* (SPSMA 2001-2010: Anon *Gát* 2)

And I saw fly a second time: the cut of a linen-sheet [= a kerchief]¹⁰⁶ and Þráin's ship [named Gammr = vulture],¹⁰⁷ iron out of a **forge**,¹⁰⁸ soul of [the] outward course [= a departed soul],¹⁰⁹ a woman meat-named after [the anatomical feature, i.e. vulva] below [the] belly.¹¹⁰

In this instance, *afl* is closely associated with iron and appears to be understood as either a forge or furnace from within which iron is taken (*járn ór afl*i). It seems possible but unlikely that *afl* refers to the workshop space in general, but there is little definitive information to be gleaned from the context.

afl 27.

Nikolaus saga Erkibyskups (c. 1425-1445) opens with the description of a devastated volcanic landscape:

¹⁰⁶ A bird, a sail (of a ship), a napkin and a lap all appear to be potential interpretations of *skorinn línskauda*. *LP* and *Skj.* suggest a type of bird, *Limosa melanura* (Black-tailed Godwit) (*LP* 1931: s.v. *línskaudi*, *jaðrakárn*; *Skj.* 1973: BII 248; Jardine 1866: 192-3). The bird interpretation seems most likely, given the theme of birds in this riddle.

¹⁰⁷ cf. *Skj.* (1973: BII 248)

¹⁰⁸ The only suggested solution I am aware of for the bird-name riddle *járn ór afl*i is *þeistikofa*, a “sea-pigeon”, “black guillemot” or possibly other birds from the auk family (*Uria grylle* or *Colymbus grylle*) (Cleasby-Vigfusson 1957: s.v. *þeist*; *Skj.* 1973: BII 248). Some of these species have brilliant red feet, which might be a potential connection to glowing-red iron from a forge. This is, however, purely speculative.

¹⁰⁹ cf. *LP* (1931: s.v. *útleiða*). Also, as Kristján Kristjánson has pointed out to me (pers. comm.), ON *önd* f. can mean both “duck” and “breath, life”, and is a potential solution for this line of the riddle (Finnur 1954: s.v. *önd*). “Soul of the outward course” suggests a departing soul, i.e. death. *Önd*, “life”, is in this line also departing. And *önd*, “duck”, is an aquatic bird, which is appropriate given the nautical overtones of the phrase *útleidda sál* and the preceding lines.

¹¹⁰ Both *Skj.* and *LP* suggest that *kjotnefndr kona* is a collocation for a “woman’s goose” (*LP* 1931: s.v. *kjotnefndr*; *Skj.* 1973: BII 248). *LP* interprets this as the vulva of a woman.

*Nicholas var ens göfgazta kyns or borg þeiri er Patera heitir, su er i þann tíma var fjölmenn ok agæt, en nu er miög sva eydd. En þar skamt fra borginni er völlr, sa er slitnar sem klædi fornt, ok leggr or þeim rifum svartan reyk um daga en elld um nætr sem ur **afl**i.* (Unger 1877: 21)

Nicholas was of the most noble kindred of their city that is called Patera, which was in that time well populated and excellent, but now it is as greatly emptied. And a short distance from the city there is a field, which is torn like old clothing, and out of those fissures black smoke discharges during days and fire during nights like out of a **forge**.

This attestation clearly associates an *afl* with discharges of fire and smoke. It is also clear that the processes associated with the *afl* are likened to volcanic phenomena. It is unclear in this instance whether *afl* is understood primarily as a furnace, a forge or as a workshop producing smoke and firelight at all times of day and night. It is more likely that it is the furnace or forge that is referred to specifically as the source of the fire and smoke, but it is possible the workshop is referred to instead or as well.

***afl* 28.**

Adóníass saga (c. 1450-1500) describes a battle between Constantinus and Adonias using *afl* as part of a comparative description:

*Þar næst brvgdv þeir sínvm sverdum. hoggr þá huorr til annars bædi <stort> og tídv m so varla mátti augv æ festa enn elldurenn geisladi og glæddi um þa sem vr **afl**i stæde af samkomu stalanna og eing<i> madur þottizt hafa siéd ógurligra vig tveggia manna.* (Loth 1964: 204)

There next they drew their swords. Each strikes at the other both greatly and frequently so that scarcely could eyes be fixed upon that and the fire shed rays of light and sparkled around then, as if it arose out of a **forge**, from [the] meeting place of the blades and no man thought to have seen a more awful battle between two men.

This usage associates *afl* with sparks and fire so bright that it is difficult to directly look at them. Rather than referring to the workshop generally, *afl* in this case most likely refers specifically to the furnace or forge that produces bright lights and emits sparks from coals and flames.

afl 29.

In *Króka-Refs saga* (c. 1450-1500), the anti-hero Refr demonstrates many different skills. In chapter four, Refr goes to stay with a man named Gestr. Gestr asks Refr *ef hann væri nockur íþrottamadr. Refr kuad það fjarre fara* (Pálmi 1883: 8), “if he were a skilled man. Refr said far from it.” But Gestr is determined to reveal Refr’s innate skills. After some time observing him, Gestr concludes that Refr is a *þiodsmidr*, “master craftsman.” Refr admits that he can provide no evidence to confirm or deny this: ‘*Vera ma það*’, *seger Refr*, ‘*þuiat eg hefí allðri smidat*’ (Pálmi 1883: 9), “‘It may be’, says Refr, ‘because I have never worked in wood or metals.’” Gestr puts this theory to the test, asking Refr to make for him a *sela-bát*, “seal-hunting boat.” Gestr quickly gathers the materials and tools for Refr:

Gestr lætr nu bua hróf eitt mikid og draga þangad vidu mikla. Knör einn hafði brotid á fjörum Gestz; hafði hann keypt upp skipviduna; þessa alla vidu lætr Gestr færa til hrófs Refs og suo sauminn allann. Gestr átti og iarn ósmidad og læzt Refr það villdu til sin taka; kuezst sialfr villdu saum sla. Smidartól á alla vega lét Gestr þangad bera, suo og afl og kol. (Pálmi 1883: 9)

Gestr now had a large shed prepared and dragged thence a great amount of timber. A ship had wrecked on Gestr’s beach; he had bought all of the ship-timbers; Gestr had all of these timbers moved to Refr’s shed and also all the nails. Gestr also had un-worked iron and Refr himself expressed that he would like to take that for himself; he said he would like to forge nails. Gestr had all sorts of smithing tools carried thence, also a **forge** and charcoal.

Here *afl* is associated with the forging of iron nails from “un-worked” iron by using tools and charcoal. There are at least three general possibilities for what “un-worked” iron could refer to. First, “un-worked” iron could refer to unrefined (but collected) iron ore. In this case Refr would first have to smelt the ore before he would have workable iron. Second, it could refer to a new iron ingot in the sense that it is freshly refined from ore and has not been recycled from old artefacts. Third, it could refer to currency bars of iron, perhaps made locally or perhaps acquired through trade. It may seem unrealistic that someone like Refr, who is entirely without experience in metalworking and smelting, would (without instruction) be able to smelt iron ore. Refr is, however, a trickster figure of sorts who, although not at all associated with the supernatural, demonstrates remarkable aptitudes and skills throughout the

saga without any apparent training or applied experience.¹¹¹ It would not be exceptional in this context if Refr were understood to have smelted iron ore himself and then shaped nails out of it. This is the only instance that I am aware of in which the adjective *ósmíðaðr* is used to describe iron. The adjectives *smíðaðr* and *ósmíðaðr* are used together in the same sentence in several law codes, always of gold and silver together: *ef maðr selar gul eða brent sylfar, huart sem þat er smíðat eða vsmíðat, þat er skirt skal uera* (Flom 1925: 170; c.f. ONP 2010: s.v. *ósmíðaðr*), “if a man sells gold or pure silver, whether it is worked or un-worked, that which is pure must be [pure].” These contexts may preclude the possibility that *ósmíðaðr* refers to raw ore, for in that case the gold or silver would not necessarily be pure. So *ósmíðaðr*, when describing metals, likely refers to the ingot produced immediately after refining the ore or to some form of currency bar or ring that has been refined but has yet to be “worked” into a finished artefact, e.g. an item of jewellery, a tool, or the like. It can therefore be ruled out that Refr processes ore in this instance: he is, rather, working with an ingot of refined iron, or perhaps a currency bar of iron, and he is making nails from this previously “un-worked” iron while also re-using old nails from the wrecked ship.

In summary, the *afl* in this instance is clearly used to make nails from previously refined iron ingots or currency bars. Therefore, in this instance *afl* refers to a forge, not a furnace. This activity of producing nails is clearly associated with ship-building and several other unidentified tools as well as a large *hróf* or “shed” as a covered workshop area that is commonly associated either with storing or building boats (Cleasby-Vigfusson 1957: s.v. *hróf*; ONP 2010: s.v. *hróf*). It is also worth noting that Refr is using recycled ship timbers as well as recycled nails.¹¹²

The parallelism of the final clause, *suo og afl og kol*, may seem to suggest that a “furnace” or “forge” is equally as portable as coal and tools. It is probably more accurate to understand that the furnace or forge is being established, i.e. built, in association with the shed, just as the shed itself is built on site rather than carried there as one unit.

¹¹¹ Kendra Willson effectively contextualizes the role of technology in this saga:

In *Króka-Refs saga*, the supernatural is conspicuous in its absence. In lieu of supernatural intrusions, the text presents a series of episodes featuring technological accomplishments which would probably have struck the original audience as less plausible than many of the legend-like supernatural occurrences found in other Sagas of Icelanders. [...] [T]he exaggerated feats in *Króka-Refs saga* may reflect shades of parody or tall tale. [...] Króka-Refr is a trickster hero and anti-hero with a [...] mastery of technology. (Willson 2006: n.p.)

¹¹² For further information on the role of recycled and un-worked iron, see the discussion of the Mästermyr tool chest (page 109 below).

afl 30-31.

Stjörn is a collection of several Old Testament histories and the oldest extant manuscript dates from the fifteenth century. These two attestations come from the story of Aaron making the Golden Calf out of golden earrings (Exodus 32). Scholarly consensus is that the part of *Stjörn* in which these attestations appear dates to the first half of the thirteenth century:¹¹³

*Aaron let þat gull i elld bera, ok ætladi suo at lemia firir þeim skurgods smidina. Enn er gull tok at brenna i **aflinum**, þa snerizt þat i nautz likneski. Vaxit sem kalfr enn litt sem eir. En er Gydingar sa þetta undr er uordit var. Ok þat uar likneski er ordit var i **aflinum**.* (Unger 1862: 311-2)

Aaron had that gold carried to a fire, and he intended so to beat them [i.e. the earrings] down into a carved image with the smith's work. And when the gold took to burning inside the **forge**, then that changed into the shape of a cow. [It] grew like a calf and looked like brass. And then the Jews saw that wonder which had happened. And that was [the] shape which had been made in the **forge**.

In these cases *afl* appears to refer to a furnace or forge used to smelt gold, but there may be some confusion or conflation with a crucible as well. The process of transformation is, in general, more mysterious (or magical and spontaneous) than precise or technical. This *afl* clearly has an interior space in which the gold melts and transforms. The phrasing seems to suggest that Aaron does the casting himself, although it may also leave open the possibility that he arranges for craftspeople to do it for him. *Stjörn* closely follows the text of Exodus 32:4 according to the Vulgate: *Quas cum ille accepisset, formavit opere fusorio, & fecit ex eis vitulum conflatilein: dixeruntque : Hi sunt dii tui Israel, qui te eduxerunt de terra Ægypti* (Vulgate Bible 1987: 199), “And when he had received them, he fashioned them by founders' work, and made of them a molten calf. And they said: These are thy gods, O Israel, that have brought thee out of the land of Egypt” (Douay-Rheims Bible 1941: 82).

afl 32.

Another attestation appears in the early sixteenth-century manuscript of *Hektors saga*: *fuku gimsteinar ur þeirra hialmum ok skiolldum sem gneistar ur **afl**e* (Loth 1962: 181), “precious stones shone from their helmets and shields like sparks out of a **forge**.” In this

¹¹³ Svanhildur (2005: 344-5)

attestation the *afl* is understood as a space out of which bright sparks fly. *Afl*, in this case, appears to refer specifically to a furnace or forge. There are, however, no specific references to metalworking tools, resources or products. This comparison has to do primarily with sparks emitted from a fire and it is therefore possible (if unlikely) that *afl* in this case refers more generally to a fireplace than specifically to a forge or furnace. It is clear, however, that the comparison seeks to establish the abundance and brilliance of the *gimsteinar* and it is consistent with this context to understand *afl* as a metalworking furnace or forge that produces more intense heat, light and sparks as well as a greater spectrum of colours than a less powerful domestic fire.

***afl* 33.**

Another attestation appears in a later manuscript of the Old Norse translation of the Latin *Elucidarius*¹¹⁴ (c. 1500-1550). In a description of sinners and their torments it is said that *svo sem þeir gloa vtan af elldi. sem iarn j **afl**e. svo gloa þeir og innan af frosti sem svell æ vetrvm* (Firchow 1992: 80), “just as they glow outwardly from fire, like iron in a **forge**, so they glow also inwardly from frost, like ice in winter” (Firchow 1992: 81 with modifications). In this instance, the translator uses *afl* as a translation of the Latin *fornax* (Firchow and Grimstad 1989: 93). The analogy drawn in the passage emphasizes the *afl* as a space within which iron glows (*járn í afl*). It is unclear exactly how *afl* is to be understood as a space or structure in this context: it could be an enclosed furnace without a clear line of sight to the glowing iron inside, or it could be a relatively open forge with a relatively clear line of sight to the glowing iron. The latter seems more likely if it is assumed that the glowing iron is meant to be observable. The comparison is not clearly delineated in terms of what precisely *afl* means: is there a body metaphor or containment metaphor operating here that would suggest that the sins glowing within the body of a person are like the iron glowing within the enclosure of a furnace? Since the ice comparison focuses more on interiority (or possibly transparency?) it is perhaps more accurate to associate the fire metaphor with the more external glow of a hot iron ingot (as opposed to the internal refraction of light in ice) than with the interiority of a furnace. Because the primary focus is on the glowing iron ingot, *afl* in this case is rather secondary in interest and vague in usage. It definitely refers to a

¹¹⁴ See *afl* 10-11 (page 54 above).

furnace or forge used for heating metal, but any more detailed implications remain conjectural and unclear.

***afl* 34.**

There is a single attestation in *Laurentius saga biskups* (c. 1530), the youngest of the original Icelandic *Biskupa sögur* written some time in the fourteenth century but surviving only in sixteenth-century manuscripts. In a manner that is almost identical to the account in the *Íslandske Annaler* (see *afl* 23, on page 62 above), this saga describes several momentous earthquakes and an eruption that split open the peak of Hekla on the thirteenth of July in the year 1300: *elldur kom vpp vr Heklu [...] j þeim elldi lieku laus biorgh stór sem kol aa afli* (Árni Björnsson 1969: 20), “Fire rose up from within Hekla ... Within this fire great, loose boulders banged like embers in a **forge**.” The analogy is not very precise in regards to an understanding of *afl*. The giant boulders within the cloven peak of Hekla are set in parallel to the hot embers within an *afl*: this appears to primarily refer to the glowing of the embers in an *afl*, but may also imply a comparison between the violence and energy of the volcanic activity and the heat and energy in an *afl*. It may be that the interiority and structure of Hekla are also compared to the interiority and structure of the *afl* in this usage, but the concept and structure of the *afl* is secondary to the primary comparison between the hot boulders and the glowing embers.

***afl* 35.**

Reykjahólabók (c. 1530-1540) is an Icelandic collection of several saints’ lives. These saints’ lives have been translated and assembled from fourteenth- and fifteenth-century Low German sources (Sverrir 2006: 173; cf. Pulsiano and Wolf 1993: 527). The life of saint Lazarus appears to have been translated from an “unidentified German prose legend” (Kalinke 1996: 50). Although this narrative draws heavily upon the New Testament (St. John 11; cf. Kalinke 1996: 114), it also includes material not found in the Bible. The following excerpt, for example, comes from a detailed account of Lazarus’ vision of the horrors of purgatory during the four days that he was in the grave:

*en þa vorv þar og adrar saler sier j lage sem vorv bike
svartara. og logvdr bæde vtan sem innan sem annat gloanda
jarn i **able**. og hafde gloanda orma og pavddr kringh vmm
halsen aa sier.* (Loth 1969: 173)

And there were also other souls laid by themselves which were pitch black. And [they] burned both without as well as within like any other glowing iron in a **forge**. And [these souls] had glowing worms and lizards strung around their necks.

This attestation demonstrates that *afl* is associated with glowing iron, and that these ingots are described as glowing both outwardly and inwardly. In this case, *afl* refers to a furnace or forge used for heating and working metal, specifically iron. *Afl* here most likely refers to a furnace or forge rather than to a workshop more generally.

***afl* 36.**

Bósa saga ok Herrauðs was likely composed during the thirteenth century, but the earliest surviving manuscript is from the sixteenth century (c. 1550). In chapter 7 young Bósi speaks figuratively of hardening his penis inside the *afl*, “forge”, of a farmer’s daughter’s vagina:

*En er fólk var sofnat, stóð Bósi upp ok gekk til sængr
bóndadóttur ok lyfti klæðum af henni.*

Hví ferr þú hingat, sagði hún.

*Því mér var eigi hægt þar, sem um mik var búit, ok
kveðzt því vilja undir klæðin hjá henni.*

Hvat viltu hér gjöra, sagði hún.

Ek vil herða jarl minn hjá þér, segir Bogu-Bósi.

Hvat jarli er þat, sagði hún.

*Hann er ungr ok hefir aldri í **aflinn** komit fyrri, en
ungan skal jarlinn herða.* (Jiriczek 1893: 23)¹¹⁵

And when all the people were asleep, Bósi stood up and went to the young woman's bed and lifted the blankets off of her.

“Why have you come here?” she said.

“Because it was not comfortable for me over there, as things were established about me,” and he asked if he could get under the blankets with her.

“What do you want to do here?” she said.

“I want to harden my earl with you,” said Bogu-Bósi.

“What earl is that?” she said.

¹¹⁵ There are several variants in the manuscripts of *Bósa saga ok Herrauðs*, but these do not obscure the interpretation of *afl* in this quotation. Jiriczek notes all the variants (1893: 23). I have emended here following Jiriczek, and I further emend my translation to include quotations for dialogue and question marks.

“He is young and he has never come into the **forge**
before, but the earl should be hardened young.”

This attestation, as the analogy to the vagina and/or womb indicates, may be suggestive of the concept of the *afl* as a structure with a distinct interiority. Beyond this suggestiveness, however, the innuendo of *Bósa saga ok Herrauðs* is a stock motif comparable to that of the dialogue and verses that appear in *Grettis saga* chapter 75.¹¹⁶ Although Bósi’s dialogue does demonstrate an understanding of the process of hardening (i.e. tempering) metal by heating it in a forge, it does not necessarily demonstrate that there was a Norse tradition of gendered or sexualized smithing rituals. Characterized as a smith of some skill himself, Bósi is likely understood as being familiar with techniques of hardening metals despite his supposed lack of experience in other hardening techniques at this early stage in the narrative. Therefore, this attestation of *afl* is suggestive (but not conclusively so) of a structure with an enclosed interior space. This attestation definitely associates the use of a forge with the process of hardening or tempering iron blades.

¹¹⁶ From *Grettis saga*:

*Váskeytt es far flösu;
fár kann svernn í hári
æskiruðr fyr qðrum
qrveðrs séa qorva;
veðjak hins, at hreðjar
hafit þeir en vér meiri,
þótt éldraugar eigi
atgeira sin meiri.
[...]
Sverðlítinn kvað sæta,
saumskorða, mik orðinn;
Hrist hefir hreðja kvista
hælin satt at mæla;
allengi má ungum,
eyleggjar bíð Freyja,
lágr í læra skógi,
lotu, faxi mér vaxa. (ÍF 1936: 240-1)*

A caution is the scatterbrain’s behaviour.
Arrow-wind desiring bushes [warriors]
cannot usually see the sword in another one’s hair properly.
This I bet, they do not have bigger balls than I
even if the spear-storm trunks [warriors] have larger cocks.
[...]
Seam-prop spinster said I had got small in the sword.
The boastful balls-branch Hrist [servant-girl] is telling the truth.
My low manned-horse can grow quite long
in my young man’s thigh forest,
island-bone Freyja [servant-girl]; wait a moment. (Faulkes 2001b: 235 with modifications)

afl 37.

Afl appears in a seventeenth-century variant (AM 178 fol^x c. 1600-1700) of *Piðriks saga af Bern*:

*Ferr Velent heim með konu sína til bua sinna ok við þeim þeirra son Viðga ok dvelz heima um hrið aðr en fleira er fra honum sagt. Ok eigi þurfti konungs dottir nu at leita vapnanna þar er Velent hafði til visat. Þviat hann tok nu sialfr. er hann hafði þau niðr grafit undir sína aflhellu. ok þar sagði hann ut fara vind en inn vatn. Ok þat var þa er hann kældi **afl** sinn.*
(Unger 1853: 95)

Velent goes home with his wife to his dwelling and with them [went] their son Viðga and [he] dwells at home for a while before more about him is said. And it was not necessary for the king's daughter now to search for the weapons there where Velent had indicated. Because he now took [them] himself [out from] where he had buried them under his forge-stone. And there he said "go out wind and in water." And that was when he cooled his **forge**.

In this context the forge is associated with the master-smith Velent. Some sort of slab of stone (*aflhella*) is a foundational aspect of the forge in this instance (Fritzner 1954: s.v. *aflhella*). It is likely that *afl* refers specifically to the forge or furnace itself, rather than the workshop as a whole. The forge-stone suggests the context is focusing specifically on the forge rather than the workshop more generally. Velent also cools the fire of his forge specifically.

afl 38.

Another attestation appears in this late manuscript of *Piðriks saga af Bern*, this one in a description of the blade made by Alfrigg the dwarf: *hann heitir Ekkisax og ekki sverd er betra vr **afli** borid* (Bertelsen 1908-11: 180), "it is called Ekkisax and there is not a better sword carried out of a **forge**." Here, *afl* clearly relates to the creation of quality blades. It is unclear whether this attestation refers to the workshop in general or specifically to a forge or furnace.

afl 39.

The latest attestation for *afl* appears in an early eighteenth-century manuscript (*BjarkExYa*^x c. 1700-1725) of the law codes that are now preserved in *Norges Gamle Love indtil 1387*. This usage appears specifically in the *Bjarköretten* taxation laws: *Svo skal*

bæargialld giallda, ef ij. menn eigu afl einn, gialldi báðir eit bæar gialld (Storm 4 1885: 93), “In this manner must a town-rate be paid, if two men own one **forge/fireplace** [?], together [they] pay one town-rate.” In this context it is difficult to determine the exact meaning of *afl*. The text surrounding this one sentence about the ownership and taxation of an *afl* includes laws relating to the property rights of thieves, unlawful marriages, and the protocols for attendance at mass-days preceding and during Christmas. While Fritzner suggests that the primary meaning of *afl* is a forge or furnace used for metalworking, he lists this attestation as more generally referring to a domestic fireplace, and he includes this as the only such example of a supposed secondary meaning for *afl* (1954: s.v. *afl*). As evidence for this secondary meaning, Fritzner cites two additional law codes. These codes are associated with Schleswig (c. 1200-1250) and Flensburg (c. 1300),¹¹⁷ areas of northern Germany that were historically part of Denmark (Fritzner 1954: s.v. *afl*; cf. Sandvik and Jón Viðar 2005: 229).

Fritzner also inserts a question mark into this suggestion for a secondary sense of *afl*, suggesting some degree of uncertainty in this association between *afl* 39 and these codes. The chief source of Fritzner’s uncertainty here may be the fact that the Flensburg and Schleswig codes themselves do not use the term *afl*, but rather use the term *arnægyald* or *arngiald* (Kroman 1951: 8, 124). The first part of this term corresponds to the Modern Danish *arne*, and the Old Norse masculine noun *arinn* referring to a “fireplace” or “hearth” (Cleasby-Vigfusson 1957: s.v. *arinn*; Falk and Torp 1910: s.v. *arne*; Fritzner 1954: s.v. *arinn*; ONP 2010: s.v. *arinn*; de Vries 1977: s.v. *arinn*). The second component corresponds to the Old Norse neuter noun *gjald*, referring to a “payment” or “tribute” (Cleasby-Vigfusson 1957: s.v. *gjald*; Fritzner 1954: s.v. *gjald*; ONP 2010: s.v. *gjald*). Thus the compound *arinn-gjald* translates literally as “fireplace-payment” or “hearth-tribute.” As I note above (pages 60-61) the noun *arinn* primarily refers to a domestic fireplace, but it is used in several instances to metonymically refer to the entire household (ONP 2010: s.v. *arinn*). Thus the term *arinn-gjald* refers to the domestic fireplace as a metonymic representation of the domestic household, which is understood in these codes as a basic unit for early urban taxation systems. As I have also pointed out above (pages 60-61) the domestic contexts associated with *arinn* and *eldstó* are not readily confused or conflated with the primarily metalworking

¹¹⁷ For the specific excerpts that Fritzner notes, see the 1951 edition of *Danmarks Gamle Købstadlovgivning* (Vol. 1), edited by Erik Kroman. The excerpt from the Schleswig code is number 29 (Text II 37-38) and is found on the bottom of page 8. The excerpt from the Flensburg code is number 66 (Text I 37, III 64, IV 69, Thorsen 63) and is found on the top of page 124.

contexts of *afl* (*ONP* 2010: s.v. *arinn*, *eld(s)-stó*). The term *arinn-gjald* is clearly domestic in its sense and does not appear to share any association with metalworking. Thus, Fritzner's uncertainty is valid in regards to the possibility that *afl* 39 functions as *arinn-gjald* does in the Schleswig and Flensburg law codes. If *afl* is to be understood as referring to a domestic fireplace and residence in this attestation, then it is an unusual usage without any supporting evidence from similar usages.

Aside from this fundamental difficulty, there are several additional differences between the *Bjarköretten* code and the codes from Schleswig and Flensburg. The Schleswig and Flensburg codes outline the penalties involved if an individual citizen (Latin *ciuis*) or a farmer or merchant who owns his own farmstead (*byman* = "burgher")¹¹⁸ does not pay the *arinn-gjald* in a timely manner.¹¹⁹ The *Bjarköretten* law code, on the other hand, outlines the protocol for taxation when two men share ownership of one *afl*. These legal statements are similar only in two ways. First, they use a term (*afl* or *arinn*) to refer to a structure associated with fire. Second, they identify this structure as a basis for taxation. Unlike the equivocal statement in the *Bjarköretten* code, the Schleswig and Flensburg codes are clearly disciplinary in focus, and they apply only to the individual owner of a piece of land.

Cleasby-Vigfusson follows Fritzner, suggesting that this usage of *afl* in *Bjarköretten* likewise applies more generally to a domestic fireplace rather than a metalworking furnace or forge specifically (1957: s.v. *afl*). *ONP* also notes Fritzner's suggestion (*ONP* 2010: s.v. *afl*).¹²⁰ According to these dictionaries, then, this attestation from the *Bjarköretten* law code should be understood as referring the domestic fireplace as a representation of a shared domestic household for the legal purposes of taxation.

The *Bjarköretten*, however, is a specific type of early law code that developed out of the management of merchant towns and significant trading locations. These are amongst the earliest known law codes in Scandinavia (Haywood 2000: 33; cf. Leche *et al.* 1905: 548-9). It is likely that the first such law code was made in AD 832 by king Björn at Hauge for the merchant town Birka in Sweden and that the name *Bjarköretten* comes from this origin (Haywood 2000: 32-3; Leche *et al.* 1905: 548-9). The earliest surviving version appears to have been developed for the merchant town Niðaros, which is today called Trondheim on the

¹¹⁸ cf. Fritzner (1954: s.v. *búmaðr*)

¹¹⁹ Westerbergh (1968: s.v. *ciuis*).

¹²⁰ One must click on the link associated with this attestation to view the *ONP*'s citation of Fritzner.

western coast of Norway (Haywood 2000: 33). This version was included in the revised laws of Magnus IV of Norway (AD 1238-1280) (Leche *et al.* 1905: 548-9). A later version was created for the merchant town of Bergen and ratified at a *Ping* there in AD 1276 (Leche *et al.* 1905: 548-9). Similar codes were created and transmitted throughout Scandinavia, and the term *Bjarköretten* appears to have been used widely and over several centuries.

Given that the *Bjarköretten* originated in regional codes for individual trading centres and merchant towns, further research is needed in order to determine whether or not *afl* in this attestation refers to the role of smithing workshops within these communities. Smithing workshops were recognized as key foundations in trade and production.¹²¹ More research is needed to determine whether or not workshops were collaboratively owned and whether or not ownership of these workshops was a basis for taxation in merchant towns. For the time being, the exact meaning of *afl* 39 is unclear. This may be an unusual attestation referring to a domestic fireplace rather than a metalworking site.

1.3 Analysis and discussion of *afl* attestations

Out of the above of thirty-eight attestations, thirty-two refer to *afl* in explicit association with the working of metals (1-21, 24-26, 29-31, 33, 35-38). Thirty-one attestations directly refer to either a forge or a furnace (as opposed to a workshop space more generally) used for heating and working metals: 1, 3-8, 10, 12, 14-23, 25, 26, 28-37. Seven (9, 11, 13, 24, 28, 38, 39) are ambiguous as to whether the *afl* is understood as directly referring to a furnace or forge, or whether the *afl* is meant to refer more generally to a workshop site which contains furnaces and forges in addition to other tools and, perhaps, other types of crafting (such as carpentry, for instance). Twenty attestations are associated with either one or multiple individuals who seem to be, at the least, competent smiths and, at the most, highly skilled smiths (4, 5-6, 10-11, 14-21, 25, 29, 30-31, 36-38). Seventeen refer either explicitly or implicitly to iron (3-6, 8, 9, 12, 19-21, 25, 26, 29, 33, 35, 36, 38). At least

¹²¹ Consider, for instance, the role of smithing workshops (blacksmithing, coin-making and non-ferrous casting) in Hedeby, a major Viking-age town that was known at the time as a key trading and production centre (Armbruster 2002: 208, 246-75; Capelle 1968: 91-2; Crumlin-Pedersen 1997: 187; Radtke 1999: 376; Wiechmann 2007: 29, 32, 34, 41-3). Sigtuna also shows evidence of a key production site where late tenth-century coins (bearing the insignia of King Olaf Eriksson *skötkunung*, whose nickname may translate as “tributary king” or “treasure king”) were minted in a workshop that was likely owned by the crown. These were the first coins to be stamped with the insignia of a Swedish king. These coins were made by craftsmen who likely “belonged to or were employed by the king” (Ros 2002: 165, 167, 174; cf. Hall 2007: 196). It would make sense that the shared ownership of smithing workshops in Viking-age Scandinavia was a matter of political interest and control.

six refer explicitly to the working or production of *gull*, “gold” (1, 16-18, 24, 30-31), and *afl* 7 also strongly implies that precious metals of some sort are understood as products of an *afl*.

Three attestations (1, 3, 24) describe hot, molten or brilliant metal as *nýtekit*, “freshly removed”, from the *afl*. Another attestation (6) clearly implies that hot iron is hammered on an anvil immediately after being removed from a forge: these usages (1, 3, 6, 24) seem to refer to the behaviour of metal when it is most readily observed at its highest temperatures (i.e. when it is freshly removed from the forge or furnace). These attestations also refer to a common principle of metalworking, that metals (both ferrous and non-ferrous) must be worked immediately upon removal from the furnace or forge: once a particular metal cools to a certain point it loses malleability and may not be welded, poured or shaped as effectively.

The key verbs associated with each attestation generally fall into one of eight categories:

- 1) Phenomena associated with metal or metalworking: *blása* “to blow the bellows” (14-21), *herða* “to harden” (36), *rena* “to run, melt, dissolve” (12), *steypa* “to pour, cast, found” (1), *vella* “to make molten” (4), *pela* “to file” (4).
- 2) Visual phenomena: *fjúka* “to shine” (32), *glóa* “to glow, shine, glitter” (8, 33, 34), *gneista* “to emit sparks” (12), *glæða* “to sparkle” (28), *lýsa* “to lighten, illumine” (7), *sindra* “to glow, sparkle” (3).
- 3) Creation: *gøra* “to make, build, work” (4, 13, 31).
- 4) Metalworking and crafting more generally: *fella* “to bring something into or out of a certain connection with something else” (4), *lemja* “to beat down” (of gold pieces, 30), *ljósta* “to hit, strike” (hot iron, 6), *slá* “to hammer, forge” (of nails, 29).
- 5) Phenomena associated with fire: *brenna* “to burn” (of gold, 30), *geisa* “to rage” (28), *leggja* “to discharge” (27), *loga* “to burn with a flame” (35).
- 6) Transformation: *snerra* “to change” (30).
- 7) Cooking: *sóðna* “to become sodden, cooked, boiled” (22).
- 8) Terms of ownership and taxation: *gjalda* “to pay” (a town-rate, 39), *eiga* “to own” (an *afl*, 39).

***Aflar* used with gold**

At least six attestations (1, 17-18, 24, 30-31) refer to the working of *gull*, “gold”, or precious metals in relation to the *afl*. 1 and 30-31 relate specifically to the smelting or melting of solid gold into a liquid state and pouring it or otherwise removing it from the *afl*. In *afl* 1 it is clear that the molten gold is removed from the *afl* and then poured into Emperor Domitianus’s mouth: it seems in this case that *afl* must refer to the forge or furnace used to heat the crucible containing the gold. This crucible is then used to immediately pour molten gold *nytecno ór afli* (de Leeuw van Weenen 1993: 138), “freshly removed from the forge”, into Domitianus’s mouth (cf. Tylecote 1986: 99-100).

30 and 31 from *Stjörn* also describe the production of a finished artefact, in this case an idol in the form of a calf. In these attestations it is less clear what *afl* means: the transformation of the earrings into a calf takes place inside the *afl* and it appears to be more fantastic or miraculous than realistic or intentional. It is perhaps implied that *afl* here refers to a forge or furnace which is used to heat a crucible full of gold. There is, however, no mention of pouring the gold into a mould to form the calf. The description here refers not so much to a precise metallurgical process as to a spectacular transformation. There is a lack of detail and there may be some confusion of crucible smelting with casting processes.¹²²

Attestations 17 and 18 refer to the insertion of gold into an *afl* and the removal of the gold ring Draupnir. Neither of these attestations mentions the melting of the gold inside the *afl*, although it is perhaps suggestive that Draupnir has the magical ability to replicate itself by “dripping.”¹²³ As with 30 and 31, the description here refers not so much to a metallurgical process as to a spectacular transformation: there is a lack of detail and perhaps a confusion of furnace and forge processes.

Attestation 24 refers to the *afl* as the source for newly made golden coins. Newly made golden coins would have first been seen after removal from a die or stamp, not from a furnace or forge. No mention is made here of pouring, casting or the stamping of dies. In this case it seems likely that *afl* refers only to a very general concept of the forge or furnace as the source of molten metal and newly made metal objects. It is also possible that *afl* here refers generally to the workshop area or edifice as the source of newly made coins.

¹²² There appears to be a general possibility in many attestations that authors, translators and scribes did not understand basic smithing procedures.

¹²³ Eight identical rings *drjúpa* “drip” from Draupnir every ninth night (Faulkes 2000: 47).

5-6 and 14-21 are the only attestations which explicitly mention a skilled smith *and* an assistant. The other attestations may imply the work of one skilled smith or several, but this is not explicitly made clear.

***Aflar* used with iron**

Fifteen attestations (3, 4, 5, 6, 8, 9, 12, 19-21, 25, 26, 29, 33, 35) refer explicitly to *járn* “iron” in association with *aflar*. To this list may be added an additional two implicit references to iron. 38 refers to a sword, which is implicitly understood as being made of iron. 36 refers to a hardening process that is likely understood as applying to sword-making and, hence, iron.

Of these iron-associated attestations, four (4, 5-6, 28) clearly refer to the work involved in refining and working iron into a finished piece using an *afl*. The most detailed description comes from *afl* 4. This attestation appears in the account from *Piðreks saga af Bern* that details Velent reducing a sword to iron filings and feeding them to domestic birds, then using an *afl* to extract the iron from their excrement and re-forge a better but smaller sword from the refined iron. I discuss in detail above the key determinations that can be made about this usage of *afl*. In summary, *afl* 4 does not refer to the workshop space or edifice generally (which contains a file and implicitly other tools also), but rather precisely to the furnace associated with this space. Second, the *afl* in this context is a smelting furnace. The verb *vella* clearly refers to making the slag molten within the solid iron bloom (*vellir nv or iarnino alt þat er deigt var i*). Some time after placing the excrement into the *afl*, Velent works (i.e. hammers) the consolidated piece of sponge iron, bringing out (*fella*) the slag impurities (which are softer, hence *deigr*, than the iron) that were previously held inside the sponge iron. Third, the process which produces the finished sword requires an open forge, not a furnace. *Afl* is not directly associated with this second process, so it remains unclear whether the term is, in this case, meant to exclusively refer to a furnace, or whether it may also refer to a blacksmithing forge.¹²⁴ As is the case with ironworking, the processes of iron smelting and blacksmithing seem to be understood as inter-related and these skills are attributed to one individual and one workshop.

¹²⁴ See also my note above, in *afl* 4 (page 48), about the possibility that the remnants of a smelting furnace might be used as a forge.

The detail and impression of the description in *afl* 4 are of a different order than, for instance, the description of the creation of the gods' gifts from *Snorra Edda* (*afl* 14-21). In both cases it is clear that *afl* refers to a furnace or, perhaps, a forge within a workshop area, and in both cases there is a skilled smith managing the production of metal artefacts. Both instances also refer to a repeated cycle of production. In the instance in *Piðreks saga af Bern*, *afl* is associated with a cycle in several stages (from an artefact made of wrought iron to a pile of iron filings, to iron in a mixture and then back to wrought iron and a finished artefact) and the verbs *vella*, *fella*, and *göra* are precisely associated with distinct stages of this cycle. In contrast, in *Skáldskaparmál* 35 (*afl* 14-21) three separate artefacts are created by repeating the same actions three times. But the process lacks all details and any sense of work on the part of the smith Eitri, except for the constant working of a bellows by Brokkr. Eitri simply repeatedly inserts a raw material (a pig's hide, gold, and iron) into the *afl* and, after some time has passed, he returns and removes a completely finished artefact from the *afl*. The verbs *blása*, "to blow" (the bellows), *leggja* "to put, place" (the raw materials inside the *afl*), and *taka* "to remove" (the finished product from the *afl*) are used repetitively in the production of each of the three artefacts. In these sequences from *afl* 14-21 there is no sense of the detailed distinctions between metallurgical processes and smithing techniques that are made clear in *afl* 4, i.e. the creation of a bloom of iron and slag impurities, the liquation of the impurities from the iron, and the working of a finished billet as well as the creation of a finished sword. Although both usages clearly refer to a furnace or forge, the detail of the description associated with *afl* 4 reinforces that this usage refers precisely to an iron-smelting furnace and that the process being described is iron smelting.

As is often the case, several blacksmithing techniques are associated with iron smelting in *afl* 4. In addition to the explicitly mentioned file, the presence of several unmentioned tools (hammer, tongs, anvil) is likely implied. Files appear in association with *aflar* in attestations 10 and 11. Files have also been found in close association with metalworking tools and materials, particularly in the Mästermyr tool chest (Arwidsson and Berg 1983: Pl. 7). Furthermore, there are consistent associations between representations (pictorial and otherwise) of the narrative of the Nibelungs, narratives of Völundr/Velent and representations of smithing tools and specific iron-smelting and sword-making processes. This body of interconnected representations suggests that this attestation from *Piðreks saga af Bern* may confidently be associated with smithing tools and sword-forging processes as

are depicted, for instance, on twelfth- and thirteenth-century stave church portals from Norway (Hauglid 1969: 195; Hoftun *et al.* 2002: 193-5; Nordanskog 2003: 393-4). *Afl* 4 seems to be meant to refer directly to a furnace used to smelt and refine an impure mixture of iron. It is also closely associated with the workshop of an individual smith skilled and equipped for both iron smelting and blacksmithing. In these circumstances it may be assumed that a blacksmithing forge is also present and in these contexts the term *afl* may be closely associated with both the smelting furnace and the forge.

Afl 5-6, from the same manuscript as *afl* 4, present a parallel situation in that hot iron is being worked in association with an *afl*. In the case of *afl* 5-6, however, there is no clear impression of what final product is sought and it is clear *afl* refers to a forge for blacksmithing rather than a furnace for iron-smelting.

Afl 12 also clearly refers to a furnace capable of reaching temperatures sufficient to liquate slag from iron blooms. Because furnaces of this period were not generally capable of melting iron, the verb *renna* likely indicates that the molten metal flowing in front of the furnace is slag. This attestation therefore not only refers to an iron-smelting furnace, but also to a specific phenomenon associated with smelting iron: the running of liquated slag from the base of the furnace.

Afl 29 attests to the use of “un-worked iron” (*iarn ósmidad*) in the production of nails in association with multiple types of unspecified tools (*smidartól á alla vega*) and charcoal (*kol*). In this case the un-worked nature of the iron likely refers to a refined billet or currency bar that still requires substantial blacksmithing work in order to be made into nails. Thus, *afl* likely refers to an open forge used for blacksmithing.

In *afl* 29 smithing tools (*smidartól*) and un-worked iron (*iarn ósmidad*) are clearly understood as portable. The Mästermyr tool chest clearly demonstrates that this description is accurate: it shows that the iron tools involved in the fabrication of nails (particularly a nail-making iron, several anvils, tongs and hammers) were transported in a wooden chest along with un-worked iron currency bars.¹²⁵

¹²⁵ See Arwidsson and Berg 1983 for plates of these artefacts: Pl. 1 shows the chest, Pl. 6 several hammer heads and tongs, Pl. 7 more tongs, Pl. 8 more hammers, an anvil, Pl. 9 more anvils, Pl. 12 a nail-making iron with nail, Pl. 14 shows two iron currency bars. Pl. 23 shows the complete remains of one longer nail (107) and the remains of two shorter nails (108-9), as well as one nail that appears to be in the process of being forged to a point (82). One of the nails fits into the holes in the nail-anvil, showing that this tool was used to make at least some of these nails.

The above attestations clearly use *afl* to refer to a furnace and/or a forge used in the refinement of impure iron pieces and the creation of wrought iron billets and finished artefacts, especially swords and nails.

Glowing iron and/or sparks

Six of these iron-associated attestations (3, 8, 12, 25, 33, 35) link *aflar* with brilliant light, hot (often glowing) iron and/or sparks. Most of these attestations refer specifically to hot iron either within or freshly removed from a forge or furnace and either glowing or producing sparks. The *afl* in these attestations is either a forge or furnace. Attestations 8 and 12 are the only ones in which a specific colour is mentioned: the colour white describes the iron and, in the case of 8, the iron is being blasted vigorously (*akafliga ... blasit i afli*). This attestation (8) clarifies what the others in this category seem to imply: that the *aflar* in these cases are furnaces or forges, likely with bellows, capable of reaching the temperatures necessary to make iron behave in these ways.

***Aflar* associated with metals in general**

Other attestations describe similar sparking effects but are ambiguous in regards to what type of metal is involved. 7, for instance, compares the sparks from a gold-coloured dragon to glowing and likely molten metal (*sía*) from an *afl*. *Sía* refers to any glowing substance and most often molten metal (Fritzner 1954: s.v. *sía*; Cleasby-Vigfusson 1957: s.v. *sía*). Because cast iron was not made during this period, it is likely that the molten metal referred to here is either molten slag pouring out of a smelting furnace or molten non-ferrous metal from a crucible that was heated in a forge or furnace.

Attestation 28 (the fight between Constantinus and Adonias) compares the brilliant fire-like light emitted by the meeting of blades in battle to the light emitted by an *afl*. No clear reference is made to a piece of metal being taken out of the *afl* in this instance, although the meeting point of two sword blades in battle is the source of this energy and may suggest some sort of metallic connection to the *afl*. It is nonetheless clear, however, that the extreme brilliance of the fire-light is meant to refer to the energy and temperatures achieved in a furnace or forge powered by bellows and used for metalworking.

Attestation 32 compares precious stones upon helmets and shields to the sparks that fly out of an *afl*. There is no direct reference to metals in association with the *afl*, and it is unclear from this context whether *afl* refers to a metalworking forge or furnace. The helmets

and shields likely contain metallic components so there may be some metallic connection to the *afl* in this comparison. The primary basis for the comparison to precious stones in 32 is the brilliance and perhaps diversity of light and colours being produced from the *afl*, in which case it should be pointed out that the spectrum of light emitted by a metalworking forge or furnace is more diverse than that of a cooler fire. There may be an implied association between the *afl* and the extravagancy and excess of precious stones and metals. These are speculations. The context of attestation 32 is compatible with *afl* referring to a metalworking forge or furnace but it does not clearly describe a metalworking forge or furnace.

Other key issues

Many of the attestations either strongly suggest or clearly imply that the *afl* has a distinct interior (i.e. enclosed, not open) space, and this may suggest that the word, in these cases, is meant to refer precisely to a walled furnace rather than an open forge. The following attestations are suggestive of the *afl* as having an enclosed interior space: 1, 8, 12, 23, 30-31, 33, 34. The following attestations make it reasonably clear that the *afl* has an enclosed interior space: 14-21, 36.

Three attestations integrate the activities associated with an *afl* into a comparison to volcanic phenomena. 23 and 34 both refer to the eruption of Hekla in AD 1300. The energy is so great that it splits the mountain open and inside one can see boulders moving about freely and loudly like embers in a forge. Attestation 27 refers to a devastated landscape torn by fissures that discharge smoke and fire like an *afl*. The two references to Hekla (23 and 34) obviously refer to a large volcano, whereas the attestation from *Nikolaus saga Erkibyskups* (27) seems to focus more on a flat topography, a field or *völlr*. The parallel between volcanic activity and smithing processes seems to make sense in general. Both phenomena may include molten materials and extreme heat. Also, the roughly conical shape and partially hollow features of a volcano might be considered somewhat parallel to a furnace. This could suggest that attestations 23 and 34 (associated with Hekla) refer to a furnace rather than an open forge or a smithing workshop in general. Attestation 27, however, clearly refers to an open plain or field and the comparison to an *afl* is based upon the emissions of smoke and fire from fissures in the plain: the topography here does not support the case for associations between mountains and furnaces, but rather depends directly upon a quite literal comparison of the smoke and fire associated with smithing and volcanic activity (without a mountainous

topography). The fissures in the landscape may be suggestively parallel to cracks in the walls of a furnace, but the description is too general to confirm anything so precise. In conclusion, it seems likely that 23 and 34 refer to a furnace, whereas 27 is much more general and may refer to a furnace, forge or workshop in general.

Many attestations refer to the *afl* in the context of several other tools that are specifically used for metal-smithing, including anvils, bellows, tongs, files, hammers and tools in general: 4, 5-6, 8, 10-11, 12, 13, 14-21, 22, 25, 29.

Only two attestations refer to *aflar* in the plural: 10 and 13. I will discuss the significance of this in more detail following an examination of the archaeological evidence. For now, however, a couple of general possibilities can be acknowledged. First, it is possible that these plural references refer to multiple forges and/or furnaces within one workshop space. Second, it is also possible that these plural references refer to multiple forges and/or furnaces at several distinct workshop sites. Additionally, it may be that *aflar* in these contexts refers to multiple workshop sites, rather than directly referring to the forges and/or furnaces themselves.

When in contexts where a direct Latin translation is clear, *afl* is used as a translation for the Latin *caminus* twice (10, 11), and *fornax* twice (25, 33).

Afl is used as part of a comparison to hell or to the suffering of sinners in 10-11, 33, 35. As a contrast to these attestations, 25 depicts the *afl* as a blacksmithing forge within the workshop (which is itself apparently within a monastery) of the holy Apellen, an honest priest who uses a glowing piece of iron to thwart the temptations of the devil.

***Alfar* in domestic contexts**

Two attestations (22 and 39) may seem to be different from all the others in that *afl* appears in a context that is either associated with domestic cooking or has been suggested as referring to a domestic fireplace rather than a metalworking forge or furnace. It is perhaps obvious that smithing and cooking share certain parallels: both involve some sort of infrastructure for building a fire and directing its heat purposefully towards objects as part of a procedure that transforms those objects into something desirable, even consumable. Smithing and cooking may also have been associated with the same spaces at some archaeological sites. For example, the archaeological evidence from Borg I, though difficult to interpret, suggests that cooking and blacksmithing activities might have taken place in the

same space in Room A (Herschend and Mikkelsen 2003: 65; Holand 2003: 138). The analysis of the socio-cultural, structural, symbolic and metaphorical parallels between cooking and smithing is beyond the scope of this study. What is clearly at issue, however, is whether or not the *afl* should be understood as distinct from the *eldstó* or *arinn*, “domestic fireplace” or “hearth”, used for cooking and heating.

The first of the *afl* attestations that pertains to this discussion is *afl* 22 from Eilífr Goðrúnarson’s *Pórsdrápa*. This poem develops abstract and complicated layers of allusions, including complex themes of both smithing and cooking which operate side by side. Both of these themes appear in the stanza in which this attestation is located. The cooking theme and vocabulary that appear in the poem do interact closely with this particular usage of *afl*. But this does not confuse the fact that *afl* refers to a metalworking furnace or forge in this case. On the contrary, this stanza simultaneously and distinctly develops the theme of smithing that runs throughout the poem, and *afl* clearly refers to a metalworking forge or furnace, one that is particularly associated with iron working. If anything, this attestation clearly demonstrates that *afl* is a forge or furnace distinct from an *eldstó* or *arinn*.¹²⁶

The second of the *afl* attestations that pertains to this discussion is *afl* 39 from the *Bjarköretten* law code. I have discussed the issues surrounding this attestation in some detail above and I will not repeat these details here. Both Fritzner and Cleasby-Vigfusson suggest that this is the only attestation that refers to a domestic fireplace rather than a metalworking site (Fritzner 1954: s.v. *afl*; Cleasby-Vigfusson 1957: s.v. *afl*). However, the exact meaning of this attestation remains somewhat unclear and further research is necessary to provide evidence that directly pertains to the interpretation of this attestation and its context. Further research is also necessary to determine whether or not smithing workshops were understood in terms of shared ownership and as a basis for taxation.

1.4 Summary - What does *afl* mean?

Several scholars have offered definitions of *afl*. Citing *Vsp* 7 as his first example, Fritzner suggests that the primary meaning for *afl* is a furnace in a smithy, a fireplace where metal is heated to glowing temperatures or melted (1954: s.v. *afl*).¹²⁷ Although “fireplace”

¹²⁶ In the next section on archaeological evidence for smithing workshops I also briefly discuss scholarly interpretations of parallels between cooking sites and smithing sites (pages 137-139).

¹²⁷ *Esse i Smedje, Ildsted hvor Metal gløbes eller smeltes* (Fritzner 1954: s.v. *afl*).

can have problematically domestic connotations, this definition seems largely accurate in that it identifies *afl* as referring to a device used for heating and working metals.

Cleasby-Vigfusson offers a short definition for *afl*, “hearth of a forge” (1957: 7) that clearly defines the word in relation to metalworking activities (i.e. “of a forge”) rather than domestic fireplace activities in general (i.e. a fireplace for cooking). Their use of the word “hearth” however seems awkward. The Old Norse word for “hearth” is *arinn* and this term is not associated with any of the attestations for *afl* (Fritzner 1954: s.v. *arinn*; Cleasby-Vigfusson 1957: s.v. *arinn*). In late nineteenth-century usage, when Cleasby-Vigfusson wrote their dictionary, “hearth” denoted the floor or surface upon which any type of domestic fire is located (*OED*: s.v. *hearth* 1.a.). “Hearth” could also, however, more specifically denote the hollow within which a smith’s furnace is located (*OED*: s.v. *hearth* 3). This definition corresponds with archaeological evidence for period-appropriate furnace and forge designs (Tylecote 1976: 54-65).

More recently, Beatrice La Farge and John Tucker have suggested that, in this specific instance in *Völuspá* 7, *afl* refers to the “hearth, fireplace or chimney of a forge” (1992: s.v. *afl*). By uniformly attributing the structures “hearth”, “fireplace” or “chimney” to “a forge” (rather than a fireplace or hearth with domestic connotations) La Farge and Tucker clearly reinforce that this *afl* structure is associated primarily with metalworking of some kind. The semantic range of “forge” in Modern English is, in some ways, complementary to the range of *afl*. “Forge” can refer specifically to an open forge used for working metals (*OED*: s.v. *forge* n. 3.). The *OED* also suggests that “forge” may refer to “a hearth or furnace for melting or refining metals” (s.v. *forge* n. 4.). Thus “forge” does appear to be a fairly accurate translation of *afl* in usages that apply to an open forge or to a smelting furnace. “Furnace” is, nonetheless, a more precise translation in cases when *afl* clearly refers to a smelting furnace rather than an open forge. Since the fourteenth century “forge” has generally been used to refer to “a smithy”, or a workshop space in which metalwork, amongst other activities, takes place (*OED*: s.v. *forge* n. 2.). As I have pointed out, several of the attestations of *afl* clearly demonstrate that this term refers to specific furnace or forge structures rather than to the workshop space in general. A few of the attestations are ambiguous, but none explicitly use *afl* to refer to a workshop space. This suggests that the semantic range of the word “forge” may be somewhat broader than the range of *afl*.

The other terms that La Farge and Tucker use (“hearth”, “fireplace” and “chimney”) seem to suggest that *afl* refers to specific structural aspects of the forge. La Farge and Tucker seem to also suggest that there is either some variation or uncertainty as to what specific structural aspect of the forge is being referred to in any particular context. As I have already discussed, “hearth” and “fireplace” can refer to the surface or space upon/in which a fire is situated and these translations are conceptually appropriate to the period (i.e. with regards to the archaeological evidence) but also potentially misleading in their domestic connotations. “Chimney” may also be a misleading translation. In Old Norse, *arinshorn* was used to refer to a chimney (*ONP* 2010: s.v. *arinshorn*), and the first element of this compound (*arinn*, “hearth, fireplace”) clearly reinforces the domestic situation of this structure (*ONP* 2010: s.v. *arinn*). In Modern English usage “chimney” predominantly refers to an exhaust structure distinct from the main chamber of a fireplace or smithing furnace: “The passage or flue by which the smoke from a fire or furnace ascends and escapes” (*OED*: *chimney* 4.a.; cf. *COD*: *chimney*). Such a distinction between the exhaust flue and the fire chamber may not apply to the furnaces being referred to in *Vsp* 7. Many medieval furnace designs could be described entirely as “chimneys” or entirely as “fireplaces.” Evidence for the shaft and bowl furnace types and techniques that are associated with the Roman Iron Age, Migration Period and Viking Age in Scandinavia shows either pits or bowls with shafts rising from the ground or descending into a pit in the ground with one or more holes at the bottom: the main shaft would be repetitively filled with layers of fuel and ore and burning would occur over most of the shaft’s length or depth (Tylecote 1976: 54-65). “Chimney” may pertain primarily to the upper portion of a furnace (the exhaust flue) as distinct from the bottom portion, or it may be that this modern term is inaccurate in relation to some of the furnace designs operative in medieval Scandinavia. Two attestations involve comparisons to volcanic eruptions that feature images of cracks or fissures revealing energy and heat inside (cf. *afl* 23, 34). It is possible that if these attestations are meant to refer to a furnace for smelting iron ore that they may refer to cracks in the shaft of the furnace that could develop during smelting, perhaps even releasing molten slag in a way that would readily compare to a volcanic event.¹²⁸ A

¹²⁸ This is speculative, but Darrell Markewitz, in association with archaeologist Kevin Smith, has documented and video-recorded a number of experimental reconstructions of iron-smelting furnaces from the Viking Age. The experiments duplicated the evidence of slag at archaeological sites and demonstrated this sort of cracking in the furnace walls, as well as the release of molten slag (e.g. Markewitz 2009: *Vinland Iron Smelt*; cf. Markewitz 2010: *Experimental Iron Smelting*).

slightly larger group of eight attestations refer to discharges of sparks, light and smoke (*afl* 3, 7, 8, 12, 25, 28, 33, 35). Of these, five refer to metal ingots themselves emitting sparks as opposed to the *afl* (*afl* 3, 8, 25, 33, 35). Only three (*afl* 7, 12, 28) refer to molten metal (*afl* 7, 12) and/or sparks, smoke, light being emitted from an *afl*. *Afl* 12 very clearly refers to molten iron slag melting from an iron-smelting furnace, and *afl* 7 refers to an unspecified molten metal discharge from an *afl*. Of these attestations, only two refer explicitly to the working of iron (*afl* 3, 12). This evidence is not decisive or particularly attractive, but it remains possible that some of the attestations do refer to such phenomena in close relation to the chimney-like shaft of an iron-smelting furnace.

La Farge and Tucker, Fritzner and Cleasby-Vigfusson all offer fairly accurate primary definitions for *afl* in as much as they all state that this feature has to do with heating and melting metals. The variety of terms they suggest and use in their definitions, however, can easily be misunderstood as suggesting that the semantic range of *afl* is more general and more domestic in connotation than the extant attestations demonstrate. In contrast to this, the *ONP* defines *afl* as “forge” (*ONP* 2010: s.v. *afl* m.). The simplicity of this definition is appealing in that it can avoid some of the confusion associated with a greater variety of terms. As I have also noted above, however, “forge” may be somewhat more general in its semantic range than *afl*: it is not clear that *afl* refers so explicitly and regularly to workshop spaces.

Finally, as noted above, according to Fritzner as well as Cleasby-Vigfusson, attestation 39 (from the law code *Bjarköretten*) may be the sole attestation to a secondary definition of *afl*, meaning more generally a domestic fireplace (Fritzner 1954: s.v. *afl*; Cleasby-Vigfusson 1957: s.v. *afl*). More research is necessary in order to confirm or refute this possibility.

In conclusion, *afl* may be defined as follows:

1. a forge or furnace used for heating and working metals
2. a forge or furnace used for working and/or producing iron.
3. a forge or furnace used for working and/or producing gold or other non-ferrous metals
4. a workshop area or edifice containing a forge or furnace used for heating, working and producing metals.

5. (rare and uncertain?) a fireplace; metonymically representing a domestic residence that is not necessarily associated with working or producing metals (*afl* 39 only).

1.5 Metalworking sites in the context of communal networks and structures

To understand many of the attestations for *afl* and the role of smithing practices it is necessary to understand the broader context of communal structures and trading patterns in Viking-age Scandinavia. Because direct evidence of furnaces and forges is often lacking, much of the following discussion may seem backwards in that it is necessary to examine remains of metalworking activities (waste metals, crucible fragments, and tools) in order to get a sense of the relative locations of the (often not apparent) furnaces, forges and workshop spaces within the community. In some cases the information from archaeological sites suffers from a lack of precise details about the relative locations of, for instance, halls and workshop areas. The importance of this information to our understanding of medieval Scandinavian communal structures has only recently come to the fore, particularly because of Stefan Brink's work on "spatial history" (Brink 2008: 57), central-place complexes and nodal theory (Brink 1996: 235-81; Brink 1999: 423-40; Brink 2008: 57-66). Many earlier publications do not rigorously document such spatial relations, and at some sites the information is irretrievable because of disruption from later activities like ploughing and construction. Nonetheless, many Migration-period and Viking-age workshop and/or trading sites have been identified from archaeological remains, and these regularly include evidence of metalworking. Of particular importance to this study are the locations of workshop spaces and metalworking activities in relation to aristocratic/monumental halls, sacral spaces, burials/mounds and trade routes.

Survey of sites

This survey is organized roughly from southern to northern Denmark and then east through to Sweden, then from south to north in Norway, and finally to Iceland and North America. This survey is also organized according to what is known of early medieval territorial boundaries. Thus, Denmark included some of what is now northern Germany (particularly the Schleswig-Holstein region) and Skåne (also known as Scania), an area that

is today part of southwestern Sweden (Roesdahl 2008: 652-5; Sandvik and Jón Viðar 2005: 229).¹²⁹ This survey and discussion is comprised of the following groups of sites in this order:

Denmark (Jutland and Funen): Hedeby (southern Jutland), Ribe (southern Jutland),
Bejsebakken (northern Jutland, near Aalborg), Gudme (Funen).

Denmark (Zealand): Tissø, Lejre, Toftegård.

Denmark (Skåne): Vikhögsvägen at Löddeköpinge, Uppåkra, two small settlements in
the environs of Trelleborg, Järrestad, and Åhus II.

Gotland: Mästermyr chest and Ridanæs at Fröjel

Sweden (Lake Mälaren): Helgö, Birka, Sigtuna

Norway: Kolnes (Sola in Rogaland), Auglend av Store Svela (Bjerkreim in
Rogaland), Storrsheia (Bjerkreim in Rogaland), Knutstad north of Listafjord
(Farsund in Vest-Agder), Sostelid (Åseral in Vest-Agder),
Kaupang/‘Skíringssalr’ (Vestfold), Hurdal Prestegård (Åkershus), Åker
(Vang in Hedmark), Modvo (Hafslø in Sogn and Fjordane), Borg I
(Vestvågøy)

Iceland: Háls (Borgarfjarðarsýsla)

North America: L’Anse-aux-Meadows

This is not meant to be an exhaustive or comprehensive list. This compilation attempts to present a geographical survey and a representative balance of various types of metalworking at various types of settlements from the Migration Period and Viking Age. This selection is influenced by Lars Jørgensen’s categorization of metalworking sites (2003: 175-6). Because of the apparent combination of sacral, central aristocratic spaces and workshop spaces in *Vsp* 7, I have attempted to include a survey of evidence for mostly pre-Christian distinctions between, on the one hand, relatively temporary communities composed of often itinerant craftspeople that do not appear to have sacral spaces or functions and, on the other hand, more permanent communities that, along with workshop spaces, were associated with powerful magnates and central structures or sacral spaces like various large halls, temples, hills and, in some cases, agrarian activities (Callmer 2002: 125-57; Hjärthner-Holdar *et al.* 2002: 161; Zachrisson 2004: 165-7). It is also worth noting here that the evidence relating to Hedeby is of key importance in the discussion of Járnvíðr in *Vqluspá* 40, which is the focus

¹²⁹ Technically, Denmark during the Viking Age also included Kaupang, in southeastern Norway (Roesdahl 2008: 652-4; Sandvik and Jón Viðar 2005: 229).

of the second chapter of this dissertation. I will now begin with a survey of evidence from the listed settlement sites. This will be followed by an overview and discussion of scholarly interpretations of these sites in relation to *Vsp* 7.

Denmark (Jutland and Funen)

Situated as a key hub of trade and production, **Hedeby** is one of the most southern and most influential Viking-age settlements in Scandinavia.¹³⁰ The earliest signs of settlement at Hedeby date to the seventh century. At this time Hedeby was a small settlement located on the Schleswig isthmus, south of modern-day Schleswig. Hedeby developed into a major port town in the eighth century. There was a hill fort to the north and a main area of settlement, production and trade to the south of the hill fort on the waterfront. At its peak Hedeby may have had a population of about 1000 and evidence for the region shows the necessary “agricultural catchment area of approximately 600km²” would have been viable (Wiechmann 2007: 34).

During the “remarkable economic development” in Northern Europe in the eighth century Hedeby went through a period of “tremendous change and [...] development” (Wiechmann 2007: 29). Hedeby served

as the point of trans-shipment so urgently required for the movement of goods both north and south, and east and west. Its topographical location was especially well-suited for this purpose. Traders coming from the east could reach the town directly, although situated in a protected position far inland, by means of the Schlei, a river extending 40km inland. Towards the west, it was separated from the navigable rivers Treene and Eider by only a 16km-wide land bridge. The north-south connection is marked by the so-called Army Road, which passes by Hedeby only a few kilometres to its west. (Wiechmann 2007: 29)

This location was the narrowest point of land on the southern Jutland peninsula. Under the protection of the Danevirke rampart, Hedeby became an important hub for foreign trading as well as local production, mostly in support of trading, i.e. coin minting, ship fabrication, textiles (Müller-Wille 1993: 275). The town is mentioned in several textual sources from the

¹³⁰ Hedeby is also known as Haithabu in Modern German (Crumlin-Pedersen 1997: 32). Crumlin-Pedersen points out that Hedeby/Haithabu means “settlement at the heath” and that the “oldest reference to a name of this kind for this site is found in the Norwegian Ottar’s report to king Alfred of England around 890 AD, describing his voyage to the trading town *æt Hæpum*, situated among Wends, Saxons and Angles and belonging to the Danes” (1997: 32).

ninth century that highlight its character as a trading port with many foreign connections. It is described by Archbishop Rimbert of Bremen (b. 830 d. 888) as a “meeting point for the tradesmen from all over the world” (Radtke 1999: 376). According to the Chronicle of Æthelweard, c. 960, the “country of the Angles lies between the Saxons and the people of Jutland; its capital is called ‘Schleswig’ in the language of the Saxons, but ‘Hedeby’ by the Danish” (Elsner 1992: 13). The ninth-century Arab merchant At-Tartuschi describes Hedeby as a “very large town at the extreme end of the ocean” (Elsner 1992: 16). The oldest dates from the Danevirke rampart suggest that eleven to twelve kilometres of it originate in the period c. 650-750 and that a number of additions were made through to 737 (Crumlin-Pedersen 1997: 44). Frankish annals for the years 804 and 808 describe the location of a trading harbour at *Sliesthorp* with trading connections established by the Danish King Göttrick (Gudfred) to the south along the Baltic coast (Stark 1988: 148). In these annals it is said that the trading routes are secured by *Göttrickswall*, which is otherwise known as the Danevirke (Stark 1988: 148). At its peak, the Danevirke rampart extended nearly fifteen kilometres west from Hedeby (Crumlin-Pedersen 1997: 34-5). A part of it also connected to a semi-circular rampart around Hedeby, connecting to the hill fort walls that date to the ninth or possibly tenth century (Crumlin-Pedersen 1997: 42; Stark 1988: 149).

Signs of metalworking in Hedeby are concentrated in the northern parts of the settlement and harbour area. This area is located south of the hill fort. The town rampart and the change in elevation clearly separate the harbour area from the hill fort. Burial activity appears to be concentrated around the hill fort and in the south of the harbour area (Stark 1988: 187, 189). There is no evidence of the processing (i.e. smelting) of iron ore or bog iron at Hedeby (Westphalen 2002: 312-14). Iron bars and/or ingots were imported to the location in great quantities and these were used particularly for the repair and production of ships. Forge-stones, slag from forging and iron ingots have been found in the town area itself, near the waterfront (Crumlin-Pedersen 1997: 187). Because of the sheer volume of iron needed to make the nails, spikes and rivets for the ships associated with Hedeby, Ole Crumlin-Pedersen estimates that some 136 to 153 kilograms of iron, respectively, would be needed to fabricate the longship and cargoship found at Hedeby. This amounts to roughly 130 to 300 of the imported iron ingots that have been found, in varying sizes, at Hedeby:

So a smithy and a steady supply of iron for processing were necessary for this job to be done, as well as for the production of some of the new tools for the job. A smithy for the

production of iron anchors, the largest objects made of iron in the Viking Age, must also have existed, and it is reasonable to assume that such specialized activity took place in the ports where skippers met from far afield, such as Hedeby/Schleswig. (Crumlin-Pedersen 1997: 187)

Non-ferrous metals were also worked in Hedeby. Evidence of casting in bronze and lead as well as gilding and filigree work has been found in an area of sixty by eighty metres on the northwestern edge of the market area south of the hill fort (Capelle 1968: 91). Activity at this site spans a period of more than one hundred and fifty years. Torsten Capelle concludes that this period of activity likely dates to the ninth and tenth centuries (Capelle 1968: 92). 151 coins have also been found at Hedeby and only 19 of these are associated with graves (Wiechmann 2007: 34). The rest are so-called *in situ* or “true settlement finds” that were in circulation and trade (Wiechmann 2007: 34). Forty-seven percent of the coins found at Hedeby were made on site during the ninth and tenth centuries (Wiechmann 2007: 41). “The earliest firmly attributable coins in the Scandinavian region were obviously minted here, although earlier minting has been suggested at the Danish town of Ribe” (Wiechmann 2007: 29). Ralf Wiechmann speculates that, “presumably, it was a royal mint, but the merchants settled in the town have also been considered as initiators” (2007: 32). Several of the coins made at Hedeby feature ships (Wiechmann 2007: 32). Wiechmann suggests that the “effects of a deliberate coinage policy can be recognized in the Hedeby area. The new type of coin was certainly issued for economic reasons, which were of advantage to the coin lord or lords in Hedeby. [...] These finds are very clearly connected with the local market trade in Hedeby, the place of trans-shipment” (Wiechmann 2007: 42-3).

The toolkit of a goldsmith has also been discovered in this market area south of the hill fort. It contains forty-one dies. Barbara Regine Armbruster notes how exceptional this is, considering that only sixty-seven dies “are known from the Viking North” (Armbruster 2002: 208). Armbruster also documents many of the brooches and amulets of bronze, silver and gold that have been found in the harbour area of Hedeby, which correspond to these dies and were likely created here (Armbruster 2002: 246-75).

In summary, this evidence of metalworking suggests that the harbour area of Hedeby, south of the hill fort, was associated with the production of metal artefacts from imported metal. There are no signs of smelting at Hedeby. Petra Westphalen’s analysis of the types and functions of iron tools found at Hedeby suggests intensive blacksmithing and even more intensive work in non-ferrous and precious metals (Westphalen 2002: 309). Westphalen

suggests that in the harbour area at Hedeby there were at least six specific areas associated with highly specialized non-ferrous metalworking, nine areas associated with general work in non-ferrous metals, one area associated with highly specialized blacksmithing, and four areas associated with general work in iron (Westphalen 2002: 310).

The settlement known as **Ribe** is situated on the western coast of Jutland, about one hundred kilometres north-northwest of Hedeby. This settlement is located on the north side of the Ribe river “at the point where it ceased to be tidal” (Haywood 2000: 156). Ribe is “probably the oldest town to develop in Scandinavia” (Haywood 2000: 156). The town was first founded as a small site of trade and crafts in the late seventh or very early eighth century (Jensen 1991: 5). A “small seasonal market centre developed here, north-west of the river, at the beginning of the 8th century, with wooden booths (dated to c. 710) in which craftsmen in leather, antler, glass, amber and bronze made and sold their goods” (Haywood 2000: 156-7). The structure of the settlement c. 725 is regular, without any clear evidence of a central hall or space (Jensen 1991: 7). There is evidence of early workshop activities extending for over one hundred and fifty metres on both sides of a central street (Bencard *et al.* 1990: 141). There is also evidence of cattle (perhaps as many as 400) on the site (Bencard *et al.* 1990: 132). During the ninth and tenth centuries a permanent settlement developed, most likely because of the ideal location of Ribe as a trading site. “Around 1000 the settlement shifted to the south side of the river, where the modern town centre lies today” (Haywood 2000: 157).

The remains of a medieval furnace were found in one of the plots. It was constructed of bricks, fire-marked rocks and mortar (Bencard *et al.* 1990: 45). The walls and floor had been rebuilt several times (Bencard *et al.* 1990: 46). The furnace measures roughly 2.45m from front to back. The intensity of the furnace must have been quite high, as evidenced by the effects on the rock, brick and clay. “The function of the furnace was not determinable. [...] The occurrence of the mussel shells in the demolition layer of the furnace may indicate that it served as a lime kiln for producing lime from common mussels. The binding mortar in the sides of the furnace is indeed shell-lime” (Bencard *et al.* 1990: 46). No slag or metal products are associated with this furnace. Several possible forges have been identified, however, at other sites in the settlement. These structures appear in association with charcoal, pieces of iron, iron slag, silver wire, tuyere fragments, burnt clay and burnt stones that show treatment at temperatures around 900-1000°C (Bencard *et al.* 1990: 30-43; Jensen 1991: 29). Several of these sites also show evidence of bead-work and have been interpreted as

beadmakers' workshops (Bencard *et al.* 1990: 99). There are also numerous finds of ship rivets, keys, nails and knives, and it has been suggested that ship repairs were often undertaken at Ribe (Jensen 1991: 29). High quality iron currency bars were also found, likely imports from the south (Jensen 1991: 29). Local iron may have been extracted from bogs, but there is no clear evidence of this activity on site.

Another of the settlement plots also shows clear evidence of smelting activities in non-ferrous metals (Jensen 1991: 31). The smelting appears to have taken place in the open, next to a small hut of a few square metres. Moulds as well as crucibles (with evidence of smelting bronze, brass, lead, silver and gold) were found here, along with bronze and silver currency bars. One forge and one fireplace were found here. The forge was dug into the ground and powered by a set of bellows, intended for the smelting of metals in crucibles. The fireplace was framed by stones and used to heat moulds so that the molten metal could completely penetrate the mould before cooling (Jensen 1991: 31). Many pieces of moulds and artefacts were found at this site.

Bejsebakken, near Aalborg in northern Jutland, is about two hundred kilometres north-northeast of Ribe. Like Hedeby's location on the Schlei inlet, Bejsebakken is situated near the Limfjorden waterway, a key inland waterway for trade (Nielsen 2002: 198). This area was on "a fine local and international travel route" (Nielsen 2002: 211). Archaeological excavations have found the remains of at least forty-two longhouses and three hundred and fifty pit houses¹³¹ that date to c. 400-800 AD with evidence suggesting "the settlement flourished in the Late Germanic Iron Age" (Nielsen 2002: 197, 200). The topography contains several prominent hills and is surrounded by extensive meadows with a few minor tributaries as well (Nielsen 2002: 198, 208). "The central part of the settlement is almost completely without structural remains. [...] The site is interpreted as a small permanent settlement, periodically visited by craftsmen and traders" (Nielsen 2002: 197). Many metal items have been found on the site and metal was clearly worked in specific locations:

One pit house differs considerably from the others in having a rectangular clay layer in the middle, with traces of wood along the long sides. Charcoal and large amounts of scale iron from forging were found at each end of the house. No doubt, this was a smithy. One "post hole" with scale iron may have held

¹³¹ A pit house is a structure in which "the floor-level is below that of the surrounding ground-level. The house has been made by digging a pit in the sand and equipping it with some sort of superstructure" (Ohlsson 1976: 71).

the support for an anvil (Fig. 6). Recently, a similar pit house was excavated in Central Jutland, but with no dating finds (Herning Museum 3840). Two pit houses were used as smithies in the Late Iron Age central site of Stentinget, north of the Limfjorden (Nilsson 1990:127). Not only iron, but also bronze seems to have been processed at these three sites. (Nielsen 2002: 204)

In addition to this specific smithy, “more than one hundred iron knives were found”, many fibulas of various types, a large amount of iron slag, iron scale, iron currency bars, some pig iron (high-quality high-carbon iron), a file and a crucible in addition to many other metal artefacts and tools (Nielsen 2002: 206-7). The site at Bejsebakken seems to have specialized to an exceptional degree in textile manufacturing (Jørgensen 2003: 179). There is a “markedly smaller amount of precious metals” than is the case in more southern Danish central sites like Gudme (Nielsen 2002: 212).

Located in the southeastern corner of Funen,¹³² **Gudme** is about one hundred and fifty kilometres east of Ribe. This site is remarkable for several reasons: it is an exceptionally early and prestigious settlement that is associated with an extraordinary volume of high-quality work in precious metals over a long period of time. The toponym Gudme has been interpreted as meaning “home of the gods” (Hall 1995: 15; Hedeager 2002: 5). Gudme also appears to be associated with key trading networks and several sacral spaces.

The immediate site of Gudme consists of some fifty fenced farmsteads in one square kilometre (Jørgensen 1995: 205-7; Jørgensen 2003: 176). Gudme was particularly active from c. 200 to c. 700, which makes it one of the earliest large settlements in Scandinavia, perhaps even the first (Hedeager 2002: 3). Activity continued at Gudme through to the eleventh and early twelfth centuries (Jørgensen 1995: 207-8). Three types of buildings have been found at Gudme: longhouses, medium-sized houses and smaller houses (Vang Petersen 1994: 37). Peter Vang Petersen observes that “pit houses have never been found at Gudme” (1994: 38). Several of the houses were re-built as many as eight times, usually on the immediate location of the previous foundation. Archaeologists have also found the remains of an “imposing hall of almost 500 sq. m. [47m by 10m], the largest so far found from this period in Scandinavia [third to sixth centuries]” (Jørgensen 2003: 177; cf. Hedeager 2001: 471; cf. Hall 2007: 15; cf. Sørensen 1994: 28-30). This was clearly a monumental hall, established in an elevated location. This hall was constructed in a way not seen elsewhere in

¹³² Funen is also known as Fyn (Crumlin-Pedersen 1997: 32).

Scandinavia before or after this period (Hedeager 2001: 471; Sørensen 1994: 31, 39). The finds associated with this hall suggest that it was “pulled down” in the middle of the fourth century, at which time it had “been in existence for about a hundred years” (Sørensen 1994: 33, 39). Several smaller halls (22-25m by 9-10.5m) of similar construction technique were found immediately south of this monumental hall. At least two of these smaller halls were contemporary with the monumental hall, and one of these appears to stand in direct relation to the monumental hall with large entrances facing each other (Sørensen 1994: 32-3). A third smaller hall was active during the second half of the fourth century, immediately after the monumental hall had been pulled down (Sørensen 1994: 39). Similar hall structures appear in this immediate area until the beginning of the sixth century. From this time onwards halls of a more broadly testified construction technique and of more modest proportions continued to be erected as part of fenced farmstead enclosures with associated smaller outbuildings (Jørgensen 1995: 205, 207; Sørensen 1994: 39).

Evidence at Gudme demonstrates that the settlement was of particular significance not only in relation to religious and political power but also as a location with “overwhelming evidence of intensive crafting activities, especially those of jewellers and blacksmiths” (Hedeager 2002: 7). Over “7000 metal objects have been found in the large settlement area dating to the period 200-1100” (Jørgensen 2003: 176). The finds are of remarkable quality and quantity, including one of the largest Migration-period gold hoards from Denmark (Hedeager 2001: 472). Extensive forging and casting is indicated by scrap metal and drops of melted non-ferrous metals as well as iron slag (Hedeager 2001: 472). During the fifth and sixth centuries in particular there was continuous high-volume and high-quality artisanal production in precious metals at Gudme (Jørgensen 1995: 217). Jørgensen notes that, “while there was a decline from the close of the sixth century, importantly the trading and workshop activities continued up to and including the Viking Age” (2003: 177; cf. Hedeager 2002: 3).

The sites at Gudme suggest that metalworking was done at workshops associated with smaller farmsteads. Evidence over the entire settlement at Gudme shows that “a large number of the farms belonged to craftsmen, on which goldsmiths and silversmiths worked and at which bronze casting was carried out” (Jørgensen 2003: 177). Jørgensen also observes that “[s]everal farms have workshops attached to them, which is a feature that clearly distinguishes Gudme from the majority of rural settlements in Denmark” (1995: 205). From Vang Petersen’s figures detailing the layout of the Gudme V site it appears that crucibles and

associated metalworking and blacksmithing finds were located inside one hall at the north-western corner of the excavation area (Vang Petersen 1994: 37, 39). This hall is thought to have been part of a fenced farmstead. The hall itself measures roughly twenty-five metres by five metres and there are both smaller and larger halls in the immediate vicinity.

Gudme was associated with the contemporary coastal settlement of Lundeberg: the two appear to have operated in close connection to one another. Lundeberg was a “trading place” at the mouth of the Tangeå river which acted as a major transportation route inland some four or five kilometres to the “great central site at Gudme” (Jørgensen 2003: 176; cf. Sindbæk 2009: 99). Evidence at Lundeberg suggests that “[a]ll known Iron-age crafts are represented by their tools: those of carpenters, bronze-, silver- and goldsmiths, blacksmiths as well as craftsmen working with amber, bone, antler” (Hedeager 2001: 473). There is also evidence of “extensive shipbuilding and ship repairs” (Hedeager 2001: 473). Only about 10% of the site at Lundeberg has been excavated, and no traces of the types of residences associated with Gudme have been found. “There are only traces of small structures (c. 4 by 5 metres), interpreted as huts for seasonal use” (Hedeager 2001: 473). The area between Gudme and Lundeberg also shows signs of several sacral spaces. There is evidence of some 2200 graves within several prominent burial grounds located between Lundeberg and Gudme (Sindbæk 2009: 99). There are several hills nearby with theophoric names, which were probably sacral locations; these locations are connected to trade routes by inland waterways (Hedeager 2002: 4-5, 14; Hedeager 2001: 474-6). Several large gold and silver hoards have also been found in the vicinity of Gudme and Lundeberg (Vang Petersen 1994: 31-3).¹³³

Denmark (Zealand)

Like Hedeby and Bejsebakken, **Tissø** is located in a “highly strategic position” seven kilometres from the coast on the shore of lake Tissø in the northwestern region of Zealand in Denmark (Jørgensen 2003: 183). Wide, navigable waterways enter the lake from several directions and a Viking-age bridge was built over the Halleby å river immediately south of the settlement (Jørgensen 2003: 183). Located about seventy kilometres northeast of Gudme, across the Storebælt strait, Tissø is a large settlement dating from the sixth through the eleventh centuries. The lake beside which the settlement is situated is itself named after the

¹³³ Jørgensen is doubtful that the gold hoards at Gudme can be interpreted as sacral. Instead he suggests that these hoards demonstrate the wealth of the individuals living in Gudme (1995: 217-8).

Norse god Tyr (Tissø = “Tyr’s lake”) (Jørgensen 2003: 183).¹³⁴ The lake is the site of many weapon sacrifices dating to “around 600, close to the time of the foundation of the settlement” and the earliest activity in the market and workshop areas (Jørgensen 2003: 183).

A manor complex is located on the shore of the lake about one kilometre north of the bridge over the Halleby å river. The quality of the metal finds (including a “very high percentage of tin-plated and gilded bronze and silver objects, compared with other contemporary Danish metal-rich sites”) makes it clear that the manor complex was occupied by aristocratic figures (Jørgensen 2003: 188-9). Prestige weapons (including hilts, pommels and other fittings inlaid with silver and bronze) and cavalry equipment are also concentrated in the manor complex (Jørgensen 2003: 189). Early coins (“sceattas, and Carolingian and Hedeby types” as well as ninth- and tenth-century Arab issues) are also concentrated in the manor complex and include some of the earliest Norse coins, dating to the first half of the eighth century and displaying a Viking house and ship motif (Jørgensen 2003: 190-1). The volume of coins and other trading activity (weights, fragments of silver and, in particular, Arab coins) is not as great as at other “town-like *emporia* such as Ribe, Hedeby, Kaupang and Birka” (Jørgensen 2003: 203). This may suggest either less overall trading activity or, more likely, that trading was focused into “short, intense, periods of activity” (Jørgensen 2003: 203).

Jørgensen’s summary of the layers of history at Tissø is remarkably detailed and clearly outlines how settlements like Tissø may have developed through three general phases. In the first phase of the manor development, during the seventh century, there was a hall (36m by 11.2m) and a second building (6m by 5m) in close proximity to one another within a fenced area (Jørgensen 2003: 191). A forge and workshop was located just inside “the fence at the northern edge of the manor”, some fifty metres north of the hall (Jørgensen 2003: 191-3). There seems to have been a cult area focused around the second building just south of the hall. In a second general phase during the following three centuries the complex was expanded in several ways: the hall was made larger and several additional buildings were established along the western edge of the fence. In the cult area the small building was also expanded and a fence was established surrounding this space: inside this area and the hall there is a particular concentration of “heathen amulets and jewellery, with motifs taken from

¹³⁴ For a map showing the distribution of toponyms containing the name of the god Týr in Scandinavia see Brink (2008: 64). There is clearly a remarkable concentration of these toponyms throughout Jutland and Zealand.

Norse mythology” (Jørgensen 2003: 197). The smithy was re-built and maintained at the same location for some three hundred and fifty years during which the rest of the settlement also demonstrated relatively conservative development. Only in a third and final phase during the eleventh century did radical change take place. A new type of hall was erected in place of the old type and in the cult area a larger house was built again, but this time at right angles to the hall (Jørgensen 2003: 199). A smaller longhouse was erected along the southern edge of the fence, some seventy-five metres south of the main hall.

Lars Jørgensen notes that “although great changes can be noted in the structure of the house complex over its 400-year history, there is one thing that never altered – it was never a production unit” (2003: 199). That said, Jørgensen also notes that “several models for making molds have been found” in the large hall itself, suggesting that “jewellers appear also to have worked” at or near the hall (2003: 202-3). Almost all the buildings in all phases “must be described as special, and many have never been seen before in Danish farm complexes” (Jørgensen 2003: 199-200). Furthermore, “the horses from Tissø were generally larger than those known from ordinary Danish farm complexes, which might suggest trained warhorses. The aristocratic aspect is reiterated by the presence of large, slender dogs in the bone material – probably hunting hounds” (Jørgensen 2003: 204). The halls are “decidedly monumental” rather than residential (as is the case at Lejre) and these halls and the area around them was “kept clean compared to the other parts of the complex” (Jørgensen 2003: 200).

Over 10 000 metal finds have been mapped on the site, showing an extensive and intensive workshop and trading space:

The workshop area stretched along the whole coast to the manor in use between the seventh and the eleventh centuries, a distance of about 700m, covering an area of about 150,000 sq. m. To the north of the manor a market area continued some 600m further north along the coast. Here too there are clear traces of workshop activities, albeit not to the same extent as south of the manor. (Jørgensen 2003: 185)

Three-quarters of the finds are iron, including nails and rivets, and brooches were also manufactured on site showing stylistic changes that correspond to the dating of activity at the site from the sixth century through to the eleventh century (Jørgensen 2003: 185-6). The limited distribution of evidence related to the fabrication of the sixth- and seventh-century brooches shows that metalworking activity began in the area immediately surrounding the main manor complex and promptly spread out from there during the seventh century. Over

four hundred years the metalworking spaces expanded southwards and a more pronounced distinction is observed between these spaces and the central manor complex (Jørgensen 2003: 186-8).

The workshop areas suffer from plough damage, so evidence is often partial and difficult to interpret. For instance, thousands of post-holes have been excavated but it is often difficult “to find any system” to these structures (Jørgensen 2003: 201). There is clear evidence of some seventy pit houses but Jørgensen suggests that there must have been several hundred such houses on the site (2003: 201). There also appear to have been many other types of small booths and houses on site used for both production and trade. Although it seems some of these structures were repaired and re-used over several seasons, “there are no traces of permanent dwellings in these market and workshop areas” (Jørgensen 2003: 201). Iron forging and bronze casting were the dominant activities in the southern workshop area (Jørgensen 2003: 202). Due to the plough damage no remains of forges or furnaces have been found, so the deposits of slag, moulds and incomplete or miscast artefacts are the primary evidence of metalworking activity (Jørgensen 2003: 200-2). Tools such as burins and small chisels for metalwork have been found at the southern workshop area, in addition to “semi-finished material for strike-a-lights, shears, knives and arrowheads” as well as “miscast keys, brooches and Thor’s hammers” (Jørgensen 2003: 202). There are also “indications among the finds that the same craft types were practiced year after year, probably by the same craftsmen” (Jørgensen 2003: 203). Finally, Jørgensen notes that a mid-ninth-century Byzantine lead seal was found in this southern workshop area, bearing the name of Theodosius, the head of the armoury and recruiting office. “Identical seals have been found at Hedeby and Ribe” and it has been suggested that a recruiting officer may have been in Tissø (Jørgensen 2003: 203). This in turn would suggest that “there were plenty of people there, and connections and high-level agreements could be established” (2003: 204).

Lejre was a prominent royal and sacral complex located about fifty kilometres east of Tissø and only ten kilometres southwest of the late Viking-age port at Roskilde (Christensen 2008: 121; Haywood 2000: 120). From about the seventh century to the tenth century Lejre was a “heathen royal complex with great halls” (Jørgensen 2003: 181-2).¹³⁵ In the *Thietmari Merseburgensis episcopi Chronicon*, which was written between 1012-18, “Lejre is

¹³⁵ Tom Christensen notes that there is evidence of settlement at Lejre dating back as early as the sixth century (2008: 121).

mentioned as *caput regni*, where the populace gather regularly every ninth year at the winter solstice (yule), and perform sacrificial rituals on a large scale” (Christensen 2008: 123). Several mounds of burnt stones reinforce that large-scale rituals took place here until the end of the tenth century (Christensen 2008: 121-3). In the eleventh century Lejre “changed its status [...] to a Medieval magnate’s seat” (Jørgensen 2003: 181-2; cf. Christensen 2008: 123). The whole settlement extends over c. 200 000m², and the c. 15000m² that has been excavated can be divided into two “functional areas, one for workshops, the other residential” (Jørgensen 2003: 181). There are four large halls (48m by 11.5m) and four smaller halls (42m by 6m). The “monumental architecture” of the great halls at Lejre is “an active signal of power and status” (Jørgensen 2003: 181-2). About sixty metres to the east of the residential area and hall complex, a workshop area has been discovered (Jørgensen 2003: 181). This workshop area is on a plateau at a lower elevation than the main hall complex, which is placed near the top of the hill “so as to be visible in its surroundings” (Christensen 2008: 123; cf. Christensen 1994: 18). Jørgensen summarizes the finds from the settlement:

Approximately 4000 small finds have been recovered, including high quality objects which were clearly reserved for the elite, such as gilt jewellery, casket fittings, coins, weights, bars of silver and bronze, molds, riding equipment, imported jewellery, mountings and glass of Carolingian and Anglo-Saxon origin. To these prestige items can be added many tools and implements. (Jørgensen 2003: 181)

In 2009 a small cast silver figurine was discovered, now known as the “Odin from Lejre”, which dates to c. 900 (Lauritsen 2009: n.p.). A lockable chest was also found (Haywood 2000: 121). Although, as John Haywood points out,

excavations have not revealed any traces of a temple, [...] it is likely that the gods were worshiped in the open air. An 80-metre-long ship setting may have been used for religious ceremonies. The richness of other archaeological remains, including a large bow-sided hall, richly furnished graves and evidence of craft activities underlines Lejre’s importance in the Viking Age. Lejre was supplanted in the 11th century by the nearby Christian centre at Roskilde. (Haywood 2000: 120-1)

The stone ship setting mentioned by Haywood is immediately beside a burial mound known as Grydehøj, and this site is located about two hundred metres east of the hall and workshop excavation sites (Christensen 1994: 18). Grydehøj was plundered by grave-robbers; it has been determined that it contains the remains of a large funeral pyre. The fire itself had a diameter no less than twenty-two metres and the burning left molten bronze and gold, burnt

iron, and burnt bones from cattle, birds, dogs, pigs, goats, deer and horses (Lejre Historiske Forening 2010: “Grydehøj”). The mound is built upon a field with traces of ploughing, and the mound appears to date from c. 550 A.D. (Lejre Historiske Forening 2010: “Grydehøj”). While the Lejre hall complex is on the western shore of the Lejre River, the ship setting is on the western shore of the Kornerup River.

Toftegård is a residential complex located about thirty kilometres north of Lejre, up the eastern side of the Roskilde fjord. The complex appears to have been

established at the beginning of the seventh century and was abandoned in the tenth century. It can be divided into a magnate’s central residence covering c. 10,000 sq. m., with five large hall buildings (c. 10 X 37-40m) adjacent to which is an enclosed special area containing a sequence of three smaller houses. Outside the hall area a more scattered, ordinary farm complex was found, consisting of two to three contemporary farms with small farmhouses, outhouses and pit-houses. About 3000 finds were recovered, including many gilded silver and bronze mountings and jewellery, in addition to coins, weights, bars of silver and bronze, molds, riding equipment, imported jewellery, mountings and glass of Carolingian and Anglo-Saxon origin. (Jørgensen 2003: 179-81)

The finds at Toftegård are particularly striking in their distribution: “all the high-status objects were concentrated in the hall area of the main residence” but the few finds in the “fenced-in special area” next to the magnate’s residence show that this area “was kept clean, unlike the rest of the complex” (Jørgensen 2003: 180-1). Although these distinctions in distribution highlight aristocratic and possibly sacred areas, “workshop activities (bronze casting and forging) have been demonstrated in the Toftegård hall area” (Jørgensen 2003: 181).

Denmark (Skåne)

Located sixty kilometres due east from Toftegård, across the Øresund strait in what is today known as Skåne in southern Sweden, the **Vikhögsvägen settlement at Löddeköpinge** is an early Viking-age site on the northern bank of the Lödde River. Vikhögsvägen is about four kilometres from the coast and just north of Lund (Hill 2001: 108; Ohlsson 1976: 59). The site appears to have no cemeteries to indicate permanent settlement. It has generally been interpreted as a non-urban market centre (Hill 2001: 108) and a “seasonally inhabited trading place” dating from the eighth century through to the eleventh (Ohlsson 1976: 59). The site has about thirty-eight pit houses ranging in size from 2.8m² to 18.8m² (Ohlsson 1976: 95).

Many of the pit houses at Vikhögsvägen are unusually small for habitations, but they do nonetheless appear to fulfill the criteria for a habitation (Ohlsson 1976: 71). The pit houses “lie in a band of some 250 metres along the back of the sandy ridge that was used for the settlement. Within this band the houses tend to be nucleated to some extent, with a few houses in each group” (Ohlsson 1976: 93). Systematic searches were made for evidence of any other types of structures (particularly any larger houses or halls). Although larger hall-like structures have been found on other sites with similar groupings of pit houses, no such evidence was found at this site (Ohlsson 1976: 93).

Ohlsson confirms from several sources that these pit houses were used on some sites for workshop activities (1976: 94-5). Loom-weights are regularly associated with these houses (Ohlsson 1976: 95-6). Tools of several types appear on the site, including chisels for woodworking. There are also substantial amounts of bronze and iron on site, including currency bars, artefacts, knives, nails, rivets and washers, suggesting that there was substantial ship-repair and/or ship-building done on-site (Ohlsson 1976: 108-10). None of this evidence is concentrated in any one particular area of the settlement. Evidence of fireplaces appears at only two of these pit house structures. Ohlsson points out that in other major pit house excavations it is typical to find fireplaces in 25-50% of the houses (Ohlsson 1976: 82-3). Ohlsson also comments that “burnt stone was found on most of the floor-levels and the floors often have large quantities of soot and charcoal”, suggesting that the evidence of fireplaces has been dispersed so that “they can no longer be clearly identified” (1976: 83-4). Some twenty fireplaces were also found in the southern part of the settlement, but these appear to have been outdoors and cannot be assigned to any of the known house plots (Ohlsson 1976: 84). Also found in the southern end of the settlement is a concentration of slag: at the northern part of the most southern grouping of pit houses, 2000 grams of slag were found in six of the pit houses (Ohlsson 1976: 112). This suggests that iron ore was smelted in this area of the settlement. An additional thirteen of the pit houses contained slag deposits weighing between ten to seventy grams (Ohlsson 1976: 112). In total 2700 grams of slag were recovered from the site, and the slag was mostly found in waste piles within the pit houses. A single crucible was recovered from the site, and it appears to have been un-used (1976: 139). Ohlsson suggests the small size of the crucible (2.4cm wide, 3.0cm deep) means that it was intended for working with precious metals (1976: 139). It was found in a medium-sized pit house (9.9m²) in the central area of the settlement. Ohlsson concludes that although

the finds do suggest that crafting of several types happened at the site, they “do not provide a complete picture of all the activities that went on” and do not “suggest that the houses were workshops” (Ohlsson 1976: 112).

While **Uppåkra** is only about fifteen kilometres southeast of Vikhögsvägen (just south of modern-day Lund), the two settlements are remarkably different in terms of evidence for craft production. Uppåkra is the largest, richest (in terms of artefacts and production) and longest-standing medieval settlement in southern Sweden (Hårdh 2002: 41-2). It appears to have been established in the first century B.C. and it was active until c. 1000 AD. A road intersects the settlement, connecting it to Trelleborg to the south and Helsingborg to the north. Burial mounds appear on site at Uppåkra (Lawenius *et al.* 2007: n.p.). What appears to be a pre-Christian sacred house has also been found on site, in the central area where the largest halls seem to have been. The majority of the metal objects found are bronze, but silver, gold and iron have also been found. 115 gold-foil figures (*guldgubber*) with five patrices or dies were also discovered (Watt 2004: 167). Evidence shows that several quite advanced metalworking procedures were repetitively done some 50-150 metres south of the main halls and sacral spaces. These activities include

depletion gilding (by heating gold items with salts), cupellation (extracting/refining precious metals by using lead), indirect bronze smelting by adding cassiterite to molten copper, and soldering with either silver-copper or copper-tin alloys. Several metal bars identical or closely related in composition to waste from casting or even products were also found. The alloys at Uppåkra indicate a considerable variation in the composition of melts, ingots and artefacts. The mixing of alloys seems to have been highly developed and points to advanced experimentation. [...] The metals used at Uppåkra derived from the Harz Mountains, the Rhine valley and possibly also the Alps and Cornwall. (Hjärthner-Holdar *et al.* 2002: 174)

Evidence of bronze casting (including moulds and melted metal), some iron metal and slag, pottery, crucible shards (used for gold and other metals) and burnt clay was found in three key spatial concentrations in the southern area of the Uppåkra site (Stilborg 2003: 157). One site appears to have been more temporary than the other two. The two more permanent sites appear to have been situated in areas which had previously been either uninhabited for several centuries or used for farming for several centuries (Stilborg 2003: 157-60). An expert jewellery-maker worked at the third workshop site. In contrast to the two small pit houses used for weaving workshops which were located immediately outside two of the houses in

the north of the settlement (Lawenius *et al.* 2007: n.p.), these metal workshops all appear within an area some 50 to 160 metres south of the main halls and other buildings (Stilborg 2003: 140).

Trelleborg is located near the south coast, about forty kilometres due south of Uppåkra and modern-day Lund. Trelleborg is a large Viking-age circular fort that was built towards the end of the tenth century (Haywood 2000: 93). The fort seems to have been part of a transition towards the centralization of the royal administration of the surrounding areas (Haywood 2000: 93-4). Trelleborg only appears to have been occupied for some twenty to thirty years (Haywood 2000: 94). The area surrounding Trelleborg, however, has a long settlement history. The area has been studied by Bengt Jacobsson and it is clear that coastal settlements were active for several centuries prior to and after the establishment of the fort at Trelleborg. Several of these settlements show evidence of metalworking. For instance, in Lilla Isie Parish, twelve kilometres east of Trelleborg, there are the remains of a “large number of sunken-floor huts where evidence of bronze casting was documented” (Jacobsson 2002: 204). Ten kilometres to the west of Trelleborg is another Viking-age settlement site, this one with similar pit houses and one pit in particular that has clearly been used as a smithy (Jacobsson 2002: 199, 201).

On the eastern coast of Skåne, about ninety kilometres east of Trelleborg, two key settlement areas have been studied at Järrestad and Åhus. Bengt Söderberg’s recent analysis of an archaeological site near **Järrestad** shows that a large settlement (likely a magnate’s farm) was present with a functional hall from roughly the seventh century through to the eleventh century (Söderberg 2003: 283-4). In addition to this hall, the major features on the site include megalithic burials from the Bronze Age, a holy mountain, and several grave-fields (2003: 303). There is also another hill that is suggestively named *Galgabacken*, “the gallows hill”, and which is located at a convergence of streams and parish borders, suggesting it was a meeting place and the site of a *þing* assembly (2003: 302). A smith’s hammer and an axe, along with a “wide range of refuse from smithing” (including slag, vitrified clay, hammer scale, and iron) were found in the house located about ten metres southwest of the hall (Söderberg 2003: 295-8). Evidence of cooking in the hall is found in the western end primarily, and there is some evidence that may indicate cooking or ritual burning where fire-cracked stones and animal remains have been found, about fifty metres to the west of the hall where a well is located (Söderberg 2003: 296-9).

Some fifty kilometres due north of Järrestad, near the “former mouth of the Helgeå river” (Hill 2001: 104), are two settlement sites known as Åhus I and **Åhus II**. There is a “structural difference between these two settlements. The earlier [Åhus II]¹³⁶ seems to have been a seasonally occupied market centre, whereas the later [Åhus I] was a permanent settlement even though it seems also to have been a market centre” (Hill 2001: 105). Rather than having an aristocratic hall or large religious space at its centre, the grids at Åhus II are regular, with habitation plots suitable to families of five to ten people (Callmer 2002: 126). There is no evidence of extensive livestock or farming in association with the site. On this site Johan Callmer has found evidence of several different crafts, including “amber-working, antler-working, bronze- and silver-casting, glass-working, specialized forging [blacksmithing], fine textile-working” (2002: 125). There are many remains of crucible fragments, mould fragments, tuyere fragments and both scrap metal and currency bars (Callmer 2002: 137-8). There are also “distinct pieces of walls” of furnaces or forges, but no bellows, forges or furnaces have been found (2002: 141). There is evidence of both non-ferrous and ferrous metalworking across most of the site without any particular concentrations: “The spatial distribution of finds related to bronze-casting is not restricted to a single sector or zone” and “a lack of [metalworking] finds at a single plot” can only rarely be observed (2002: 138). The same types of artefacts (like brooches, for instance) were fabricated at several locations in the settlement, not just at one site. Besides this evidence for bronze and silver casting, Callmer also notes that a “strong argument for intensive forging at the site is provided by frequent finds of pieces of rod-shaped iron bars (with a rectangular section)” (2002: 141). Slag from iron smelting and working has been found “all over the site, sometimes in considerable quantities” (2002: 141). Concentrations of slag seem to indicate “rubbish-heaps” (2002: 141). Callmer suggests that activities at Åhus II, such as comb-making and brooch-making, required close collaboration between different crafts (e.g. for fabrication of fine rivets and pins) (2002: 142). There is evidence on site of the production of chests, with chains and locks, as well as knives (2002: 144). Several pieces of offensive weapons have also been found, a fragment of mail, and “numerous finds of sheet-iron riveted together” (likely for repairing cauldrons) and more than 2400 units of rivets (2002: 144). All this is likely indicative of specialized smithing (Callmer 2002: 144).

¹³⁶ The dating for activity at Åhus II is approximately 750-850+ (Callmer 2002: 127).

Gotland

Gotland is a large island in the Baltic, located about eighty kilometres off the eastern coast of Sweden and about 175 kilometres south of Stockholm. In terms of trade and transportation, this island functioned as a “natural stepping-stone between Scandinavia, the Baltic seaboard and Russia” (Hall 2007: 56). Gotland was an “international market place, the base of many very successful merchants who exploited their homeland’s location, making it a key point on the east-west axis from Scandinavia to Islamic lands” (Hall 2007: 56). As Richard Hall points out, “over 145,000 coins have been discovered on Gotland, of which about 65,000 are Islamic dirhams and the remainder are mainly English and German pennies. Silver jewellery, hack-silver and ingots are also found in profusion” (Hall 2007: 56). Over 700 hoards of silver have been found on the island, including the two largest Viking-age silver hoards ever found (weighing over 65 kg together), which date to c. 867 (Hall 2007: 56-7).

Because of the long history of agrarian activity on Gotland many of the archaeological layers have been disturbed, making it difficult to assemble clear evidence of specific smithing sites in relation to settlement contexts. This is particularly unfortunate, since Gotland was clearly an important site of production and trade. The **Mästermyr tool chest** presents one of the most detailed set of finds and information of metalworking from Viking-age Gotland. It was found in association with the remnants of several copper cauldrons, but the contents of the chest itself seem to be mostly related to iron, iron-working and some wood-working:

The composition of the find and the proportions of tool types seem to support the interpretation that this was the tool-chest of a farm which needed a good supply of equipment for blacksmiths and carpenters or boat-builders. The presence of raw iron, damaged objects and scrap suggests that the raw material used for iron work was partly raw iron ingots [...] and partly re-used scrap. (Arwidsson and Berg 1983: 5)

Gustaf Trotzig has also suggested that plate shears, as well as two of the hammers may have been used for working with sheet-metal, perhaps iron or copper alloys (Trotzig 1991: 145). Sheet iron and repaired cauldrons of iron and copper were found in association with the chest (Trotzig 1991: 145-6). The chest was likely “too heavy to carry” but seems to have been meant for transport, perhaps by boat or cart (Arwidsson and Berg 1983: 6). It had iron hinges

and a chain wrapped around it, as well as a lock (Arwidsson and Berg 1983: 7-9). The security of the chest suggests that its contents were considered both portable and valuable.

There is also evidence of a Viking-age emporium at **Ridanæs**, between the Fröjel church and the modern coastline of western Gotland (Carlsson 2008: 131). Excavations are still preliminary, but show that there was a port here where activities in trade and manufacture took place from the late sixth century through to c. 1180 (Carlsson 2008: 131-2). There is evidence of cemeteries as well as a “large number of artefacts connected with trade and manufacturing”, including “animal bone, burnt clay, slag, flint and charcoal” (Carlsson 2008: 132). Ship-building was also clearly practiced here (Carlsson 2008: 133). Additionally, excavations have found imports of “semi-precious stones [...] from the Arabian peninsula and the area around the Black Sea, imported raw glass material from Italy (for making glass beads) and iron from either the Swedish mainland or from the island of Saaremaa in Estonia” (Carlsson 2008: 132). More than 150 coins have also been found, from England, Denmark, Caliphate and Germany, most dating to the early eleventh century (Carlsson 2008: 132-3).

Sweden (Lake Mälaren)

Three key settlements in the area immediately west of modern-day Stockholm show a close historical sequence of developments and declines. First, Helgö was a key production and trading centre from the fifth century to the eighth century. Then Birka took over this role from the late eighth century through to the end of the tenth century. Finally, Sigtuna took over from Birka in the late tenth century. All these settlements are connected by the inland waterways of Lake Mälaren. These waterways served as key transportation routes between southern and northern Sweden, and also to the Baltic in the east.

Helgö is an island in Lake Mälaren, about twenty-five kilometres west of modern-day Stockholm. Helgö was a major trading and production site from c. 400-800 (Haywood 2000: 96). There are seven building groups and six major cemeteries on the island, most of them concentrated in a 500m² area at the eastern end of the island, closer to the northern shore than the southern. Several of these features overlap one another: for instance, a later cemetery (116) is seen to overlap an earlier layer of settlement finds at Building Group 7. Within this 500m² area there is evidence of a hill-fort at the eastern end of the island (Lamm 1988: 95-6). Building Group 3 is the most eastern settlement and is known as the “production area” (Lamm 1988: 89). On this site, a building of 3m by 7.5m has been identified as an intensely

productive and prestigious workshop. Relative to the main hall on this site, this workshop is located “immediately below to the north and towards the shore” (Kyhberg 1988: 87). The workshop at Building Group 3 contains the remains of ironwork and glasswork (Kyhberg 1988: 84-5). This workshop is also the focal point of over 94% of the Bronze-casting moulds found at Helgö (Zachrisson 2004: 155). A crucible was also found here that was used to melt down gold coins, “so it is conceivable that the fragments of gold bracteate found in the hall [...] were made at Helgö” (Zachrisson 2004: 155). Most of the “prestige objects decorated with Style I animal ornament” were produced at this workshop (Zachrisson 2004: 156).

Foundation VIII in Building Group 2 also shows evidence of a blacksmithing and casting workshop (Bergman 2005: 16). Building Group 2 is located just to the west of Building Group 3, slightly closer to the hall and the mountain (Zachrisson 2004: 156), and both sites are the most eastern settlements on the island. At both workshops, moulds for sword-pommels were found, along with rich amounts of slag, and “hewn off pieces of iron bars”, indicating that “a lot of forging [was] carried out through the years” (Bergman 2005: 16). Evidence clearly points to the fabrication of nails and rivets, but it is unclear whether larger items of iron (e.g. swords) were fabricated on site or whether they were imported and finished on site (Bergman 2005: 16). Several different qualities of iron were used on site (ranging from mild steel to soft iron) and several different techniques had been used to manipulate the iron (introduction of phosphorus, carbon, composite techniques like pattern-welding, and coldworking) (Bergman 2005: 16-7). There is a strong association between high-quality weapons and Foundation VIII in Building Group 2 (Bergman and Arrhenius 2005: 79). This indicates an “advanced iron technology during the existence of the Helgö site” (Bergman 2005: 17). There is also a strong association between the production of “highly decorative objects such as oversized square-headed brooches” and the Foundation VIII building at Building Group 2 (Zachrisson 2004: 156).

There is, however, no evidence of smelting iron ore at Helgö: “all the iron found in the site must have been imported” and the slags found on site occur as a result of further refining of the iron and modification of different steels (Bergman and Arrhenius 2005: 79). There is also a time discrepancy in the activities: the moulds for sword buttons and pommels, for instance, tend to date to the fifth and sixth centuries, while the iron weapons themselves appear to date from the eighth to the tenth centuries (Bergman and Arrhenius 2005: 79).

At Building Group 6 an area of 300m² was excavated, in which the remains of a sunken-featured building were found (Sander 1997:84-5). Many of the features of this settlement were disturbed by a cemetery that was later established over it. The building that was found measured 2.2m by 2.4m (Sander 1997: 85). The depth varied (because of the slope into which it was dug) from 0.45m to 0.7m. Four furnace-like structures were found in the building. In the northeast corner of the building was a furnace or oven structure clearly used for metalworking, formed by stones and measuring 0.8m by 0.8m with a height of 0.7m (Sander 1997: 85). The radiocarbon dating of the floor of the building is 489, plus or minus 103 years, and the dating of the top of the furnace is about 752, plus or minus 168 years (Sander 1997: 85). Excavated materials include many broken and burnt stones, a bronze bar, soot and charcoal (Sander 1997: 86). Several other pit houses have been found on the site, many of which have soot and charcoal layers in them (Sander 1997: 86-7). One of these pits (A 65) shows a dark red circular structure of hard burnt clay some 0.9m in diameter. Another such structure lay underneath this one, measuring 0.9-1.3m in diameter. Two additional bowl-shaped furnaces appeared in this pit, diameters between 0.5m-0.65m with depths ranging from 0.05m to 0.1m (Sander 1997: 88). Brittle, burnt stones were found around and in these structures as well as a small fragment of iron (Sander 1997: 88). Other pits were excavated on site, but no evidence of an established settlement or hall was found. Some animal bones were discovered in the pits, but no other artefacts or remains.

Gold-foil figurines (*guldgubber*) have been found on Helgö, and there are several additional features that suggest Helgö was a “pagan cult centre”, like Gudme, “where markets were held at festival times” (Haywood 2000: 96). Haywood points out, for instance, that Helgö means “holy island” (2000: 96). Although bronze-casting ceased at Helgö sometime during the Vendel Period, blacksmithing continued and seems to show a close association with pre-Christian sacral spaces (Zachrisson 2004: 156). There is a stony ledge on the hill near the large hall. This ledge was used for ritual metallic depositions and burning during the Vendel Period, and a triangular stone-setting replaced a wooden post at this location after the Vendel Period (Zachrisson 2004: 148-9, 156). Many iron objects were deposited on the stony ledge and can be associated with specific Norse gods. For example, miniature spears, Þórr’s hammer pendants, fire-steel pendants, miniature shears and amulet rings have been found: these are considered to be associated with Óðinn, Þórr and Freyr (Zachrisson 2004: 156). During the Migration Period, deposition patterns at this location

included “many tools and large quantities of crucibles and objects symptomatic of casting and smithing” (Zachrisson 2004: 155). This, along with the evidence for the production of “prestige objects decorated with Style I animal ornament” at Helgö, suggests that “smithing and casting had great ideological significance” at this site (Zachrisson 2004: 156).

In the late eighth century, Helgö declined as a major centre of craft production and metalworking. Around this time, the nearby settlement complex at **Birka** (about fourteen kilometres northwest of Helgö) appears to have taken over this role. The Birka settlement is based around a port located on the western end of an island that is now known as Björko (Haywood 2000: 31). The town is mentioned in both Rimbert’s *Vita Anskarii* (c. 870) and Adam of Bremen’s *Gesta Hammaburgensis ecclesiae pontificum* (c. 1075) (Ambrosiani 1993: 43). During the late eighth century and through to the late tenth century, Birka flourished until “it was abandoned in favour of nearby Sigtuna” (Haywood 2000: 31). Even after this abandonment, however, the site continued to be identified with the island of Björkö throughout the Middle Ages (Ambrosiani 1993: 43). A major trading site, Birka was located at a key intersection: the relatively sheltered waterways of lake Mälaren led to the Baltic to the south and Sigtuna and Gamla Uppsala to the north, and also to the east, i.e. to Stockholm, Helgö and the Baltic again. “Many of the inhabitants were merchants, but there were also craftsmen in metals, jewelry and furs” (Haywood 2000: 32). Birka’s location “on the route from the iron- and fur-producing forests of northern Scandinavia was also important. Raw materials were transported to the town in winter and exported overseas in summer. The many luxury articles found in the Birka graves illustrate surplus from this trade” (Ambrosiani 1993: 43). The town is surrounded by more than 3000 graves (Haywood 2000: 32). The island clearly had a long-term significance as a settlement site and as a burial site.

From this site we can see that major trading, crafting and smithing sites also operated in close association with large and prominently situated halls. The main population of the town was situated in a small valley area known as the *Svarta Jorden*, “Black Earth”, a deep layer of dark soil caused by deposits of charcoal and organic waste (Haywood 2000: 32). This area is clearly partitioned by ditches into plots, each containing “one or two houses and several outbuildings used as workshops and stores” (Haywood 2000: 31). At its peak, the population of Birka averaged between 700-1000 people (Ambrosiani 1993: 43). There was a large main hall (20m by 10m) near the top of the hill (Hedenstierna-Jonson and Holmquist

Olausson 2006: 11), and a smaller hall near the port that seems to have housed warriors and operated as a garrison in defense of the port.

There were at least two sites for metalworking. One smithing site is relatively concentrated inside a 5m by 6m building located beside the main hall area with a 2m firebreak separating the two buildings (Hedenstierna-Jonson and Holmquist Olausson 2006: 12). At least four forges were located in this smithy, along with the iron tip of a bellows nozzle, 15kg of slag, and a fragment of a casting mould (probably for a disc brooch of bronze) (Holmquist Olausson 1993: 104-5). There were also several crucibles found over an area of 21m², but these “could not be connected to certain structures” (Holmquist Olausson 1993: 105). Charlotte Hedenstierna-Jonson and Lena Holmquist Olausson speculate that “if all four forges were at work at the one time, this would mean that eight smiths were active here, making it a very busy workshop” (Hedenstierna-Jonson and Holmquist Olausson 2006:12). Regardless of such speculation, it is clear that “activity seems to have been intense” at the smithy (Hedenstierna-Jonson 2006: 51). This smithy manufactured and repaired the remarkable amount of iron artefacts found on site, including weapons, locks, keys, knives, and iron amulets (in the shape of Þórr’s hammer) (Hedenstierna-Jonson and Holmquist Olausson 2006: 12). Some bronze casting was also done in this smithy and silver casting also likely took place at or near the smithy (Hedenstierna-Jonson and Holmquist Olausson 2006: 12; Holmquist Olausson 1993: 104-5).

Another area showing smithing activity is the *Svarta Jorden*, where large quantities of metal objects, tools, moulds and crucibles “show that industrial processes had been carried on” (Ambrosiani 1993: 43). Iron pieces constitute “one of the largest group of finds” from the *Svarta Jorden* (Fjaestad 1995: 101). It is difficult to determine a concentrated area for smithing activities in the *Svarta Jorden*. Although evidence of burning and charcoal is dispersed throughout the area, there is no concentrated evidence of furnaces or forges. Crucibles, moulds, rivets as well as nails and manufacturing refuse appear throughout the Western and Eastern House Packages while some vitrified sand has been found in the Southern House Package (Ambrosiani and Clarke 1995: 34, 40-45).

Sigtuna, about fifty kilometres north of Birka (and a successor to the function of Birka within the region), was founded sometime in the late tenth century as a “royal, administrative, ecclesiastical and commercial centre” (Haywood 2000: 173). The settlement consisted of about one hundred “long narrow tenements” that fronted a central street on

either side with a large enclosure for a royal residence at the centre (Haywood 2000: 173; cf. Hall 2007: 196). During the end of the tenth century and the beginning of the eleventh century, Sigtuna was the site of Sweden's first coin mint. Coins were issued in c. 995 by King Olaf Eriksson *skötkunung*¹³⁷ and carried the marks *Rex an Situna* and *Rex svevorum*, i.e. “King in Sigtuna” and “King of the Svear” (Hall 2007: 196; Ros 2002: 174). This mint was located in a plot or block of buildings near the centre of the town (Ros 2002: 165). The mint building itself is roughly six metres by four metres in dimension, nearly identical to the two other large buildings on the block but much larger than the two smaller buildings (Ros 2002: 167). In the mint building the anteroom shows evidence of metalworking, including silver fragments, die-cores, coins, imprinted lead strips (used to test the coin dies), crucibles, and evidence of bronze-crafts and bone-crafts (Hall 2007: 196; Ros 2002: 167). Weaving or tapestry work took place in one of the other larger buildings on this plot. This plot was likely owned by the crown and the craftsmen who worked and lived there probably “belonged to or were employed by the king” (Ros 2002: 174). For a period of about two or three centuries Sigtuna was a commercial centre of high-status craftworking (Haywood 2000: 173).

Norway

Norway is in many ways a problematic area for metalworking evidence. Recent archaeologists have observed that the evidence of metalworking (particularly non-ferrous) in Norway is relatively sparse when compared with Denmark and Sweden (Hjärthner-Holdar *et al.* 2002: 176). There are some small coastal settlements that show limited evidence of metalworking. Kaupang is exceptional in that it corresponds more closely to the Danish settlement patterns in terms of structure and production. The inland areas of Norway demonstrate extensive evidence of iron ore processing (smelting), but these activities are generally not associated with large settlements. For example, at a farm site called Fet in the Sysendalen area, some 100 km east of Bergen, a slag heap 30 by 40 metres was found with thicknesses up to 1.5 metres. Small house foundations (i.e. 4 by 5 metres) are sometimes attached to these finds but nothing more (Johansen 1973: 95).

A number of small settlements with limited evidence of metalworking have been found in southwestern Norway. A settlement site has been found at **Kolnes**, for instance,

¹³⁷ King Olaf Eriksson ruled c. 995-1022 and Richard Hall suggests that his nickname, *skötkonung*, may translate as “tributary king” or “treasure king” (2007: 196).

about fourteen kilometres southwest of Stavanger.¹³⁸ At Kolnes, “fragments of at least six different crucibles of the closed egg-formed type” were found in a group of Migration Period boathouses that appear to have been “multifunctional during the summer season” (Hjärthner-Holdar *et al.* 2002: 180).

Auglend av Store Svela, Bjerkreim (Rogaland), is located about fifty kilometres southeast of Kolnes. The site at Auglend shows evidence of foundations for three long houses in association with “one very small building and a cemetery” (Hjärthner-Holdar *et al.* 2002: 179). In one house there were several hearths. “One round hearth, situated just inside the east entrance of the house had been used for iron smithing. Casting of bronze is indicated by one fragment of an egg-shaped crucible” (Hjärthner-Holdar *et al.* 2002: 179).

In the same general area as Auglend is the site at **Storrsheia**. Here, one of three discovered houses seems to have been a smithy. It contains evidence of “metal casting and iron smithing” and “two complete and one fragmentary crucible of the egg-shaped type, one bell-shaped open crucible and two fragments of crucibles of unidentifiable shape were found” (Hjärthner-Holdar *et al.* 2002: 180).

The Migration-period house found at **Knutstad**, north of the Listafjord, is exceptional in that it shows evidence of both ferrous and non-ferrous metalworking. This site is located on the southern shore of Norway, about 170 kilometres from Kolnes, near the promontory known as Lista. This house measured roughly 19 metres by 6 metres and had two entrances (Hjärthner-Holdar *et al.* 2002: 178). This house is located “on a small mountain plateau, above the fiord on the north site of Lista” (Hjärthner-Holdar *et al.* 2002: 178). There are traces of blacksmithing and non-ferrous casting at several hearths inside the house. Fourteen fragments of crucibles and one whole crucible have been found in this house, along with fragments of clay moulds (Hjärthner-Holdar *et al.* 2002: 178). Two “fairly large fragments of moulds of soapstone for ingots” were also found and indicate that casting was done here (Hjärthner-Holdar *et al.* 2002: 178). According to Hjärthner-Holdar *et al.*, this is the “largest find of this kind in Norway” (2002: 178). There is also evidence of several burial mounds at this site.

About ninety kilometres north-northeast of Knutstad, another Migration-period farm has been discovered that also shows some evidence of non-ferrous metalworking, albeit on a

¹³⁸ Kolnes is now in the municipality of Sola, in Rogaland.

much smaller scale than Knutstad. This site is known as **Sostelid**, and it was about 450m above sea level, “hemmed in by hills and mountains [...] on a plateau high above the centre of the mountain settlement, Kyrkjebygda” (Hagen 1953: 354).¹³⁹ Of the three house foundations excavated at Sostelid, site II contains the only evidence of metalworking. This house was about 45m by 6m (Hagen 1953: 355). The easternmost end of the house contains most of the evidence of fires, including potsherds and “numerous whetstones, spinning wheels, iron slag, pieces of flint, a quartz fire-stone, a talc sinker” and a fragment of a crucible with five drops of silver in it (Hagen 1953: 356; Hjärthner-Holdar *et al.* 2002: 189). Charcoal kilns (“cauldron-shaped cavities” dug into the earth) have also been found on the farm and may indicate that iron ore smelting took place nearby (Hagen 1953: 363). The western end of this house appears to have been reserved for livestock. Site I at Sostelid is about sixty metres west of site II and shows evidence of another house of slightly smaller dimensions than the one at site II (Hagen 1953: 354-5). Site III at Sostelid shows evidence of a much smaller, irregular “primitive house” (likely used for storage) only a few metres west of site II and directly connected to the larger building by a row of stones (Hagen 1953: 356). There is also evidence of a fenced-in area, pasture and ploughed soil (Hagen 1953: 362-3). About eight or nine burial mounds have been found scattered around the farm in locations that tend to offer an elevated vantage point over the farm and its surroundings (Hagen 1953: 356-9).¹⁴⁰ A large, rectangular mound “built of stones of unequal size, superimposed on one another”, was found about 35-40m west of the main house at site II (Hagen 1953: 360). This mound measured roughly 30m by 10m and was oriented so as to be parallel to the main house. “This monument is not a house site and obviously can have served no practical purpose. Nor did excavation disclose anything that was unmistakably a grave” (Hagen 1953: 360). Traces of a few small fires and charred bone were found on this mound, along with a bone-shaped quartz whetstone dating to the Migration Period and a “very beautiful axe of stone” that is generally similar in date and form to the axe from burial Mound VII (Hagen 1953: 360; see footnote 140 immediately below).

¹³⁹ Gudmund Hatt’s review of Anders Hagen’s monograph contains a selective but detailed summary of the settlement finds at Sostelid (Hatt 1954: 522-5). While Hatt’s review is easily accessed, Hagen’s monograph is only available at a few libraries. My thanks to Tone Guettler at the Library of Humanities and Social Sciences (University of Oslo) for making selections of Hagen’s monograph available to me.

¹⁴⁰ Curiously, Mound VII contained a “thick-butted stone axe” that “is characteristic for the Neolithic Phase and is over 2000 years older than the grave, which dates to the Migration Period. [...] The axe was in all probability an amulet” (1953: 359).

The Viking-age settlement at Kaupang is later, larger and more strongly associated with trade, production and sacral spaces than these smaller, Migration-period settlement sites from southwestern Norway. “**Kaupang** is located by the mouth of the Oslo fjord, in the region of Vestfold on the fjord’s western side” (Skre 2008: 112). Like the settlements on Lake Mälaren that operated as trading points between inland areas and coastal regions farther south and east, Kaupang was in an ideal trading location. Kaupang was in a protected bay near the coastal sailing route but it was also just a few kilometres east of the river Lågen which operated as a key trade route inland to areas that produced iron, whetstones and soapstone (Skre 2008: 112). Evidence at Kaupang has proven somewhat enigmatic, but it is clear that blacksmithing and glass-bead production occurred no later than 803, possibly only as part of a seasonal workshop site (Skre 2008: 115). About a decade after this five or six discernible plots were erected, each with a small building. In addition to blacksmithing and bead production, amberworking, textile production and metal-casting (jewellery in lead, bronze, silver and gold) took place on site at this time (Skre 2008: 115). These houses were used for several decades, probably until the middle of the ninth century. Interference from ploughing makes later evidence difficult to interpret, but there appears to have been continued production in all the previously mentioned crafts into the tenth century. At its peak, Kaupang may have had as many as 90-100 plots covering about two hectares and a population of about 400-1000 (Skre 2008: 118). An aristocratic hall (35m by 11.7m-7.9m) has been found at a farm named Huseby, one kilometre north of Kaupang (Skre 2008: 118). This hall was built in the last half of the eighth century and may correspond to *Skíringssalr*.¹⁴¹ The prestigious Oseberg (c. 834) and Gokstad (c. 900-2) ship burials were found a few kilometres north of Kaupang (Skre 2008: 112). There are also over 1000 graves in the area, 204 of which have been excavated (Skre 2008: 118). Dagfinn Skre does not mention the relative location of the burials to the town or hall.

The site at **Hurdal** Prestegård, just north of Kaupang in Åkershus, is located near Lake Hurdal and the river that connects to this lake (Bergstøl 2002: 81). Jostein Bergstøl has examined the evidence of ritual use of cooking pits from c. 65 BC to AD 610 (2002: 77-78). Bergstøl observes that of the more than 140 cooking pits that have been identified on this

¹⁴¹ Over two hundred years of scholarship have identified Kaupang with the mention of *Sciringes heal* in “Othere’s account” at the court of Alfred the Great of England (Skre 2008: 112-4). This account was recorded in c. 890. As Dagfinn Skre points out, “the reference here to *Sciringes heal* is brief and raises more questions than it provides answers” (2008: 112).

site, four are clearly identified as forges and one more pit is clearly a site where iron was extracted from ore (2001: 78). These finds on site at Hurdal include

several compact blocks of slag with convex undersides, similar to the so-called ‘plano-convex slag’ found at Helgø in Sweden [...]. This type of slag was shaped during the process of reducing and refining the raw iron. [...] The rounded shape of the underside shows that the slag had melted down into a bowl-shaped pit. (Bergstøl 2002: 78)

Bergstøl appears to be accurate in pointing out that these pits were overwhelmingly used for cooking. A small number are exceptional in that they were clearly used for smithing processes typical of major trading and production workshops during the Migration Period and Viking Age in Scandinavia.

Evidence of a goldsmith’s workshop has been found at a site at **Åker**, near Lillehammer,¹⁴² some ninety kilometres north of Hurdal in eastern Norway. The “farm Åker is situated at a narrow bay at the north-east end of Norway’s largest lake, Mjøsa, a strategic and important position in the way of communication and transport” (Hjärthner-Holdar *et al.* 2002: 181). “An analysis of the punches used for the decorative stamps on the buckle and other objects from the find indicates that there was a goldsmith workshop at Åker during the sixth century (Hjärthner-Holdar *et al.* 2002: 181). A farming field beside a large Migration Period boathouse was excavated. The boathouse was rebuilt during the High Middle Ages (Hjärthner-Holdar *et al.* 2002: 181). Several fragments of clay moulds and crucibles were found in the field. “Åker is surrounded by farms carrying theophoric names and it was the seat of the major thing during the late Iron Age” (Hjärthner-Holdar *et al.* 2002: 181).

At **Modvo**,¹⁴³ about four hundred kilometres east of Åker and Hurdal, a single, large longhouse was found, measuring forty by ten metres. One half of the longhouse contained livestock, the other half housed people. “The house had been destroyed twice in conflagrations, and after the second devastating fire it was deserted c. 500 AD” (Hjärthner-Holdar *et al.* 2002: 180). Evidence shows that “fairly advanced metal crafts had been executed in the building.” Traces of fireplaces and iron smithing as well as other types of metalworking were discovered in the habitation section along with 23 fragments of closed egg-shaped crucibles (some with trace deposits of tin and copper) and one fragment of a soapstone mould (Hjärthner-Holdar *et al.* 2002: 180).

¹⁴² Åker is in the Vang municipality, within the county of Hedmark.

¹⁴³ Modvo is in the municipality of Hafslo, in Sogn and Fjordane.

The most northern sites in this survey are at **Borg**, which is located north of the Arctic Circle, on Vestvågøy, the second largest of the Lofoten islands. Five key sites (Borg I-V) have been studied here (Johansen and Munch 2003: 12-3). Of these sites, Borg I-III, and the associated boat-houses, aristocratic courts, grave mounds and workshops show evidence from c. 200-1300. “There are two large boat-houses at Borg and a court site at the neighbouring farm Bøstad”, suggesting that the chieftains that lived here managed farms, small boats for fishing and larger boats for trading (Johansen and Munch 2003: 12). There were also 19 iron fish-hooks found at these sites, suggesting that fish was a key source of food (Arrhenius and Muyingo 2003: 175).

The site at Borg I has been the focus of intense archaeological studies. Over 90% of the iron slag found at Borg is associated with Borg I (Holand 2003: 137). Borg I is a remarkably large farmyard that must have contained a great number of livestock (Johansen and Munch 2003: 17). Archaeologists have found the remains of a Viking-age hall or long-house at Borg I (known as Borg I:1a) which was oriented from southwest to northeast.¹⁴⁴ This hall was exceptionally large, measuring 80m by 7.5-9m (Johansen and Munch 2003: 13). This hall was taken down in the tenth century.

Herschend and Mikkelsen suggest that this hall was divided into five rooms with five entrances (Herschend and Mikkelsen 2003: 43, Fig. 6A.3, cf. 62-3).¹⁴⁵ Evidence of activities associated with this hall is problematic because it appears to have been disturbed by later ploughing (Arrhenius and Muyingo 2003: 180; Herschend and Mikkelsen 2003: 63). Only 20% of the finds associated with the hall are considered to be *in situ*, and these finds are almost entirely restricted to items found in post-holes (perhaps intentionally deposited?) (Holand 2003: 134). While interpretations based on this evidence may be questionable, archaeologists have nonetheless attempted to identify the functions of each room in this later hall.

¹⁴⁴ There was an earlier hall (Borg I:1b) on the same site as this Viking-age hall. The earlier hall measured about 64m by 7-8m and was built in the fifth or sixth century (Johansen and Munch 2003: 13). Frands Herschend and Dorthe Kaldal Mikkelsen suggest that this earlier hall was divided into four rooms and had two entrances (2003: 62). In the seventh century this hall was taken down and replaced by the Viking-age hall. Evidence of activities in the earlier hall is too sparse to identify the functions of each room (Herschend and Mikkelsen 2003: 63).

¹⁴⁵ Herschend and Mikkelsen point out that “no distinct partition walls were found” (2003: 62). They base their interpretation of room divisions “on construction details, such as the location of entrances and fireplaces, as well as on groupings of posts and the distribution of finds” (2003: 62, cf. 60). In the older hall they suggest that Rooms A and B were of roughly equal size at the southwestern end of the hall. Both entrances gave into Room C and this was the smallest of the rooms. At the northeastern end of the hall, Room D was by far the largest room, taking up almost half the hall (Herschend and Mikkelsen 2003: 43, Fig. 6A.3).

Starting at the southwestern end of the hall, Room A was about 20m long and 160m² in area (Herschend and Mikkelsen 2003: 65). Room A has been interpreted as living-quarters. Evidence of “heavier production” (forging, iron working and soapstone work) dominates in Room A (Herschend and Mikkelsen 2003: 63). Room A is also strongly associated with cooking activities and there is evidence of a fireplace in its centre (Herschend and Mikkelsen 2003: 65; Holand 2003: 138). Evidence of textile work also appears in this room. There is no association with prestige metal items (e.g. *guldgubber*) in Room A.

Room B has been interpreted as an entrance chamber to the hall (Herschend and Mikkelsen 2003: 65). At 3.75m in length, this was the smallest room by far (Herschend and Mikkelsen 2003: 65). Two entrances gave into Room B, one on either side of the hall. About 54% of the iron slag found at Borg I is associated with Rooms A and B (Holand 2003: 136).

Room C was about 14m long and up to 9m wide (c. 120m²) and has been interpreted as the ceremonial “hall” space within this building (Herschend and Mikkelsen 2003: 65). Room C was used as another set of living quarters, but with some differences from the living quarters in Room A (Holand 2003: 133). Several prestige metal artefacts have been found in particular concentration in Room C, including two oval brooches, a fragment of a rectangular brooch, fragments of a bronze vessel, five golden *guldgubber* plaques and the head of a manuscript pointer (Johansen and Munch 2003: 14-5). The *guldgubber* “were undoubtedly related to pagan ceremonies” and although this room was used for everyday activities, “there is also every reason to believe that the room also had an official function and was used for banquets, cult ceremonies and festivities” (Johansen and Munch 2003: 18). The *guldgubber* were concentrated in the northern corner of the room, perhaps indicating a high-seat (Johansen and Munch 2003: 18). There is evidence of a central fireplace in Room C with broad benches along the walls (Herschend and Mikkelsen 2003: 65). A forge-stone made of soapstone was found in a post-hole in Room C and 20% of the slag found at Borg I appears to be associated with Room C (Holand 2003: 136-7). There is also evidence of textile-work in Room C, but to a lesser extent than in Room A (Holand 2003: 137). Herschend and Mikkelsen conclude that Room C was the ceremonial “hall” space, but that it also had several other purposes, including some types of “light” production (2003: 64-6).

Room D was 9m long and its function is difficult to determine because there is a general lack of evidence in this space (Herschend and Mikkelsen 2003: 66). There was no

fireplace in Room D. Room D had one very large entrance (the only entrance on the northwestern side of the hall), and also an interior doorway that opened into Room C.

Finally, at 33m in length, Room E was the largest room by far and has been interpreted as a byre that contained a “considerable amount of livestock” (Herschend and Mikkelsen 2003: 66). It had two entrances, both on the southeastern side of the hall and at opposite ends of the room. Some evidence of metalworking (including an anvil and hammer) was found in Room E (Arrhenius and Muyingo 2003: 177, 187 Plan 9D.9).

A small complex of small out-buildings (known as Borg I:NW) just northwest of Borg I appears to have been associated with the hall over a long period of time (Herschend and Mikkelsen 2003: 67). One of these buildings has been identified as a smithy dating to the Viking Period (Johansen and Munch 2003: 17). Forging appears to have been done here (2003: 17). 20% of the slag found at the entire early medieval Borg site (i.e. including not only Borg I, but also the sites at Borg II-III) is associated with this smithy just northwest of Borg I, while another 74% of the slag found at Borg is associated with the hall site at Borg I (Holand 2003: 137). There is not yet any evidence that iron ore was processed on the site, but trading suggests connections both near and far. Olave Sverre Johansen and Gerd Stamsø Munch suggest that the “occurrence of slag, iron shells and rod shaped blanks may indicate that forging activities took place” at Borg I (2003: 17). Birgit Arrhenius and Helena Fennö Muyingo also suggest that two of the three hammers found at Borg I may be goldsmiths’ tools “because of their small size” (2003: 175). It is likely that the gold, bronze and iron objects found here were imported from elsewhere and that some metal work (particularly ferrous) took place on site (Johansen and Munch 2003: 17).

Iceland

While the evidence for non-ferrous metalworking in Iceland is limited (Hayeur-Smith 1999: 194-5), it is clear that bog iron was regularly smelted during the ninth and tenth centuries. The research done at **Háls** in western Iceland is particularly indicative of these smelting activities. Háls is situated “on a low ridge crest [...] in the interior portion of western Iceland’s Borgarfjörður district” (Smith 2005: 187). A farmstead was occupied here from the late ninth century into the thirteenth century. An iron production complex is situated at the southeastern corner of the settlement and it appears to have been active from the late ninth century with periods of “intense production” at the beginning and end of the tenth century (Smith 2005: 188). The farmstead does not appear to have been occupied during the periods

of intense iron smelting (Smith 2005: 193-4). One large slag heap was found about 20-30cm in maximum thickness and covering 45m² with several smaller, outlying slag heaps as well (Smith 2005: 187). In an arc around the western end of the large slag heap are production features, including “furnace bases, pits, and smithing debris. Twenty metres south of the production zone is an associated area containing two superimposed pit houses, each of which has debris from smelting and forging in its floor and fill deposits” (Smith 2005: 188). Excavations in the year 2000 revealed “what appears to be the first well-documented series of Viking Age smelting furnace bases from Iceland” (Smith 2005: 190).¹⁴⁶ Shallow bowls of slag, 25-35cm in diameter, were discovered, each with evidence of an opening on the eastern side of the bowl’s perimeter (Smith 2005: 190). Four of these rings were discovered in a layer over top of a larger and older base with a diameter of 45-50cm. None of these furnaces appear to have been slag-tapping furnaces. Small fragments of silty clay with vitrified surfaces seem to be the only remaining evidence of the shafts of these furnaces (Smith 2005: 191). One of these pieces appears to preserve a circular opening for a tuyere nozzle (Smith 2005: 191). Heaps of turf appear to have been placed around the furnaces, perhaps to support the shaft and/or prevent air intake through its walls (Smith 2005: 192). All these furnaces appear to have been re-built and re-used several times (Smith 2005: 192-3). To the east of these furnaces is a battered boulder with clear evidence of blacksmithing (Smith 2005: 193). Two remnants of what appear to be iron currency bars were discovered, one near the boulder and the other from the pit house smithy (Smith 2005: 193). There were other finds of fragments of nails, a riveted bucket patch, small iron carving knives, small pieces of copper alloy scrap and some possible silver flecks: this indicates general repair of iron objects and related craftwork as well as some possible non-ferrous metalwork (Smith 2005: 193). Finished tools and artefacts do not appear to have been made at Háls: the iron ore was processed into bars here, and these bars were worked into finished artefacts elsewhere (Smith 2005: 193). Throughout the northern part of the farm complex there is evidence of charcoal pits and charcoal production in the late tenth century (Smith 2005: 188). Hundreds of lumps of bog iron ore were found on the site, cached in a pit (Smith 2005: 190). Kevin Smith concludes that bog ore from the nearby marshlands was gathered and smelted on this site, and that the site went through several changes (a re-building of the pit house smithy for

¹⁴⁶ For sketches of these structures and reconstructive experiments, see Markewitz (2008: Working towards an Icelandic Viking Age Smelt Based on the remains at Háls).

instance) and at least two periods of extremely intense production, perhaps associated with the periodical re-generation of the bog iron resources (2005: 189).

North America

L'Anse-aux-Meadows is an important site in that it demonstrates the portability of smelting practices during the Viking Age. The brief history of activity at this site also shows a microcosm of social strata in relation to aristocratic spaces, living spaces and workshop spaces. L'Anse-aux-Meadows is a small, temporary settlement near a brook at the most northern point of Newfoundland that was likely inhabited from c. 1000 to c. 1020 (Haywood 2000: 117). The complex consists of eight buildings in three main groups, each group having a large hall with interior divisions and a workshop with a distinct function. Hall A (102m²) is characterized as having a “high status space” with two communal living/sleeping rooms and a smithy (Wallace 2006: 38). Hall D (88.36m²) contained a carpentry shop, storage room and a communal living/sleeping room (Wallace 2006: 42). Hall F (160m²) appears to have been the “largest and most important building on the site. This is most likely where the leader of the settlement resided with his personal crew” (Wallace 2006: 45). Hall F contained seven rooms, including a high status space, two communal living/sleeping rooms, a kitchen, two storage rooms and a boat shed. House B (17.5m²) and Hut E appear to have been living/sleeping rooms and workshops, while Hut C (7.5m²) was a low-status living/sleeping structure (Wallace 2006: 40-1). Hut G was a pit house that served as a workshop and living/sleeping space. Hut J is the only structure located on the opposite shore of the brook. It contained a furnace for smelting iron.

Hall A was part of a complex including House B and Hut C. This complex is located closest to the brook and it contains the highest concentration of metalworking evidence. In Hall A, Room III (the smithy) had two doors, one that entered from the terrace and another exactly opposite it that opened onto the bog where iron ore was extracted (Wallace 2006: 38). Although the evidence of blacksmithing is concentrated in Room III of Hall A, some roasted bog ore appears in House B, along with some slag and some stone pounders (Wallace 2006: 39).

At Hut J “a furnace or smelter stood in the middle of the floor and a charcoal kiln was situated a short distance from the hut” (Wallace 2006: 59). Evidence shows that the smelting of iron was only done once at this site, and since “four-fifths of the bog ore turned into slag, and only one-fifth became workable iron” it has been suggested that this “iron master was not

particularly skilled” (Wallace 2006: 60). The work produced about three to five kilograms of workable iron, “sufficient for making about 100 to 200 nails” (2006:60). The work was probably not planned: it was likely necessary to smelt the ore and produce the nails in order to repair one of the ships.

The rivets were concentrated in the most northerly complex (Hall D and Hut E), along with much of the wood: this is likely where boats were repaired, using the rivets that had been forged at the south of the settlement. There does not seem to be evidence of farming. The main activities appear to have been blacksmithing and carpentry, related to ship repairs (Haywood 2000: 116).

Summary

This concludes the overview of recent studies into the role of smithing in the archaeology of medieval Scandinavia. Clearly there were smithing facilities, including forges and furnaces as well as defined workshop areas, amongst the temples, monumental aristocratic halls, agrarian farm-houses and smaller houses associated with various types of minor settlements and major multi-functional central-place complexes. There were also, however, smithing facilities in a very different type of community, one that did not have discernible temples or central halls, but was rather a collective of relatively itinerant craftspeople. Smithing structures and spaces may have had prestigious social significance in aristocratic central place complexes, but these smithing features were also quite clearly utilitarian and integrated as part of a large production and trading network. Smithing workshops also seem to have been established in areas that are distinct from structures and spaces with prominent aristocratic, political and/or sacral functions. This distinction appears in a variety of aspects. On some sites it is expressed in terms of the relative cleanliness of the area. At other sites there is a clear (though often not extremely large) distance between, on the one hand, aristocratic hall and sacral space and, on the other hand, the workshop site. At yet other sites there is also a clear distinction in topographical organization. The central hall and aristocratic spaces tend to be organized in direct relation to one another, either in one and the same building or in angular relation to each other. These aristocratic and sacral features are organized as central and distinct features in relation to an immediately surrounding or more distant expanse of rectangular plots of workshops and small residences.

1.6 Discussion of interpretations of metalworking and workshop sites

Scholarly interpretations of the metalworking sites mentioned above have focused upon three issues: first, the role of metalworking in the historical and cosmological/mythological concept central-place complexes; second, the role of metalworking in relation to the political and sacral functions of these settlements; third, the role of metalworking in relation to communities that do not appear to have prominent political or sacral functions. I will now survey and discuss these interpretations.

A key factor in the interpretations of these sites is the theory of central place complexes. Stefan Brink demonstrates how this theory can apply to studies of space/place distinctions in the archaeological and toponymic evidence from medieval Scandinavia (1996: 235-9). Although Brink's study is quite general, his conclusions contribute to our understanding of the role of the smith and smithing activities within the mercantile and agrarian communities and trading networks of Viking-age Scandinavia. Brink's analysis focuses on key features that distinguish "central or nodal places" with "one or more public functions, such as administrative, religious, judicial, mercantile" (1996: 236-7). Brink focuses on elite or upper-level places, such as the grand hall of the chieftain,¹⁴⁷ as well as temples, early churches or raised hills with cultic significance that were closely associated with these halls and their centralizing functions. He also examines the many lesser halls and lower-level places that still seem to have formed functional centers for surrounding communities, as well as central locations for the itinerant or ambulatory kingships of Viking-age Scandinavia. He suggests that these places served many purposes:

Beyond the ordinary functions performed at an 'official' central place, such as trade and marketing and legal and cultic practices, most certainly also other, more specialized skills were practiced, such as highly qualified forging, highly skilled handicrafts, specialized cult performances conducted by a special priesthood, an attendance of particular warriors and housecarls, etc. (Brink 1996: 241)

This category of elite central places includes ancient monuments, places with special names, special buildings and special artifacts, including not only the exclusive halls or brooches of the social elite, but also the specialized workshop spaces and tools of, for example, the smith (Brink 1996: 240-1).

¹⁴⁷ e.g. the grand halls at Lejre, Gudme, Birka, Sigtuna, Tissø, Toftegård, Uppåkra, Borg, etc.

Brink also specifically examines the role of smithing in relation to the early central place complexes of Scandinavia. The earliest and sometimes grandest halls of medieval Scandinavia were established in the Roman Iron Age (A.D. 0-400) as “multifunctional central places” and as “nodes of power” (Brink 1996: 238). Some of these sites continued to grow in influence throughout the later Migration Period (A.D. 400-600), Vendel Period (A.D. 600-800) and Viking Age (A.D. 700-1100). Within these “multifunctional central places”, Brink suggests, “we may see where the smith, most probably the smith *par préférence*, lived, and we can demonstrate the existence of a particular pagan priesthood and also pre-historic military units and warriors. All these are in principle always found only in a central-place context” (Brink 1996: 241). Brink suggests a prominent role for the smith and smithing in these prestigious central places.

Following Brink, Lotte Hedeager, Kevin Smith, and Torun Zachrisson have either suggested or extensively argued in favour of interdisciplinary, cosmological and conceptual connections between smithing activities and elite central places. These arguments consistently draw upon exceptional archaeological sites and the evidence in *Vqluspá* 7 and *Gylfaginning* 14.

In particular, Hedeager emphasizes the importance of the evidence from Gudme and other prestigious sites in relation to interpreting *Vsp* 7 (Hedeager 2001, 2002). Hedeager draws upon Lars Jørgensen’s slightly earlier analysis of evidence at Gudme and its importance in interpreting the role of metalwork in early medieval Scandinavia (Jørgensen 1995, 2003).¹⁴⁸ However, Jørgensen and Hedeager use different methodologies, and this affects how the spatial and social relations between workshop areas and aristocratic and/or sacral areas are interpreted. Both scholars acknowledge the general scholarly shift away from interpreting Gudme as a unique settlement and towards understanding how Gudme is structurally parallel to several other early and prestigious settlements in Scandinavia (Hedeager 2001: 468-9; Jørgensen 1995: 213). Both scholars also reinforce that metalworking (particularly in gold) at Gudme is a fundamental feature of the aristocratic and sacral distinctions that were maintained at this site over several centuries (Hedeager 2002: 13; Jørgensen 1995: 215, 217). Where Jørgensen and Hedeager differ is in how they define

¹⁴⁸ Hedeager’s 2002 article is a condensed version of her more extensive 2001 chapter for the monograph edited by De Jong *et al.* Both of these pieces by Hedeager, as well as a small component of her contribution to *The Viking World* (Hedeager 2008: 15-6), are based upon a 1995 presentation (Hedeager 2001: 468). Jørgensen’s 1995 article is similarly based upon an earlier 1992 presentation. Thus, the dialogue between these publications is much more contemporaneous than is suggested by the actual publication dates.

the spatial parameters of those metalworking activities and in how they interpret the socio-cultural significance of smiths working in precious metals. Jørgensen focuses upon specific evidence for spatial distinctions within Gudme. He interprets the distribution of prestige gold artefacts at Gudme as evidence of a warrior elite that controlled the distribution of those items and lived in spaces that were distinct from the workshop areas where those prestige artefacts were made (1995: 211-2). Hedeager, however, takes an innovative and speculative approach to interpreting Gudme itself, as a whole, in relation to the information in *Vsp* 7, and she argues that these sites represent a cosmological model for a sacral central-place complex (i.e. Gudme = “the home of the gods”). As part of this more general perspective on Gudme as a whole, Hedeager suggests that craftspeople (specifically smiths) had a particularly special and powerful social (if not also sacral) status because they were responsible for transforming imported metals into sacral artefacts that had specific meaning within Gudme. I will start by discussing Jørgensen’s work, and I will then discuss Hedeager’s work.

While he does emphasize the importance of the close association between craft production and the aristocracy at Gudme, Jørgensen reinforces that at its peak “between the third and sixth centuries Gudme was divided into craftworking and elite areas” (2003: 177; cf. Jørgensen 1995: 213). He notes that at Gudme “[s]everal farms have workshops attached to them, which is a feature that clearly distinguishes Gudme from the majority of rural settlements in Denmark” (1995: 205).¹⁴⁹ Jørgensen also observes the remarkable continuity in high-volume and high-quality artisanal production in precious metals at Gudme over a period of several generations (1995: 217). He compares this continuous productivity in precious metals with similar examples at structurally parallel sites like Lejre, Boeslunde, Sorte Muld and Stentinget. He then makes this conclusion:

It can hardly be doubted that an ordinary rural population would be unable to continue activities of this kind for so long. Stable trade connections and supplies of raw metal would have been hard to maintain under the changing conditions of political power that prevailed in the Later Iron Age and Viking Period. The sites can only have possessed this long continuity because powerful élites continued to have large interests in centres of handicraft and trade like these. Gudme is a clear

¹⁴⁹ Jørgensen is not clear on how exactly this feature distinguishes Gudme from other settlements. This close connection between several farmsteads and workshops is worth considering in relation to *afl* 3 and Velent’s access to domesticated birds: it seems likely that Velent’s workshop is in the immediate vicinity of a farmstead (see page 51 above).

example of how an aristocracy was directly linked to an artisanal society in the 5th-6th centuries. (Jørgensen 1995: 217)

Thus, Jørgensen suggests a “direct” political association between aristocratic power and artisanal production. In this article Jørgensen only briefly notes that sites like Gudme were closely associated with religion as well as with trade, production and the authority of influential magnates and royal groups (1995: 215). Jørgensen observes that there are two distinct types of hoards associated with Gudme and that these types of gold hoards are associated with different spatial functions. The one type is composed of finished, prestige objects and is associated with the spaces reserved for warrior elites. The other type of hoard is composed of imported objects, ingots and other scrap materials used by a metalworker to create the prestige items that are associated with the warrior elites. Jørgensen emphasizes that it “is important to note that the warrior treasures are *not* found in the workshop area, but in areas where workshop activities are nearly absent. It seems evident that Gudme can be divided into two main areas: a workshop area and an area of high-ranking warriors” (1995: 212; cf. Jørgensen 2003: 177). Jørgensen states that the finished gold artefacts found at Gudme “represent gifts given by a magnate to his followers, of whom several of very high rank must have been present in Gudme in the late-5th and 6th centuries” (1995: 212). Moreover, there is also a chronological distinction between the craft production and the aristocratic functions of Gudme. During the Viking Age, trade and craft activities (including metalwork) persisted while the other aristocratic and sacral functions of Gudme declined (Jørgensen 2003: 177). According to Jørgensen’s work, at the peak of its aristocratic and sacral potential, and during its decline in the beginning of the Viking Age, Gudme maintained a relatively clear spatial distinction between workshop areas and areas reserved for sacral functions and/or aristocratic and warrior elites.

Acknowledging these spatial distinctions within the settlement structure at Gudme (2001: 502), Hedeager more generally argues that the entire settlement was understood as a sacral space (2001: 504). Hedeager’s methodology is basically to interpret “the archaeological and the written record as different expressions of a single cosmological model” (Hedeager 2002: 3). Her focus is also on demonstrating the important role of gold at Gudme and in the textual sources, and she also argues for the powerful and special status of smiths at Gudme and in the textual sources. Comparing *Vsp* 7 and *Gylf* 14 to the archaeological evidence at Gudme and Lundeborg, she suggests that “metallurgy, skilled

metal work and gold” are “crucial concepts in northern cosmology” and foundational aspects of this “cosmological model” for a central place (2002: 5).¹⁵⁰ Hedeager interprets the sites at Gudme and Lundeberg as “multifunctional central places” that demonstrate particular significance not only in relation to religious and political power but also as sites with “overwhelming evidence of intensive crafting activities, especially those of jewellers and blacksmiths” (2002: 7). She argues against the “usually regarded” role of metal production and craftsmanship as “a neutral or even secondary affair” (2002: 7). Instead, Hedeager reinforces that

skilled crafting, especially forging and the work of jewellers – and probably woodcarving as well – were the hallmark of political and ideological authority. [...] Highly skilled metal work was not merely a craft; it was an integral part of political and religious power, and something closely linked to ideals of royal authority. (2002: 13)

With respect to the literary evidence, Hedeager notes how *Gylf* 14 describes the sacred hall Glaðsheimr as entirely made of gold and as “the best and greatest building in the world” (Hedeager 2002: 12). She also notes that “another crucial element of Iðavöllr and the only other building mentioned was the forge” (2002: 12).¹⁵¹ Hedeager notes that the concept of the central-place complex at Ásgarðr includes a “place where skilled crafting took place, particularly metalwork” (Hedeager 2002: 12).

With respect to comparisons between the literary and archaeological evidence, Hedeager suggests a close association between metalworking activities and aristocratic and/or sacral functions at Gudme and at the Æsir’s settlement on Iðavöllr. While Hedeager does note Jørgensen’s argument for distinct workshop and aristocratic spaces at Gudme, her argument focuses more on the overall sacral nature of Gudme as a whole. Therefore, more

¹⁵⁰ Hedeager’s earlier innovative study (Hedeager 1992: *Iron-Age Societies: From Tribe to State in Northern Europe, 500 BC to AD 700*) of the emergence of centralized political power in Scandinavia has received several positive reviews (Geselowitz 1995: 453-4; Kraig 1994: 208-9; Levy 1993: 750-1; Webster 1994: 467-8). Hedeager’s 2001 and 2002 interpretations of Gudme, while speculative, have a solid basis in this earlier thesis that the preconditions for the development of centralized political power in Scandinavia lay in the emergence of a warrior class with individualized opportunities for accumulation through management of prestige goods and surplus production. Hedeager states that she is “well aware” that her 2001 and 2002 pieces on Gudme (which I discuss here) are “highly speculative” (2001: 506). This speculative approach is connected to Hedeager’s assertion that “much is gained by also applying our well-informed imagination to the interpretation of complex sites such as Gudme. We urgently need to get beyond the traditional circular arguments about gold meaning power and vice versa” (Hedeager 2001: 506).

¹⁵¹ It is, as I have pointed out, unclear whether *aflar* in these instances from *Gylf* 14 and *Vsp* 7 refer to enclosed buildings or to furnace and/or forge structures in an open workshop space. The archaeological evidence from medieval Scandinavia reinforces that smithing (ferrous and non-ferrous) took place both inside enclosures and out in the open.

small-scale distinctions between workshop spaces and aristocratic and/or sacral spaces are not as fully acknowledged in Hedeager's conclusions as is the case in Jørgensen's studies. What is important to Hedeager's argument is that locally produced gold bracteates (*guldgubber*) and other metal artefacts with pre-Christian sacral significance have been found in extraordinary quantity at Gudme. Hedeager reinforces that because sacral objects were created from precious metals at Gudme the metalworking at the settlement clearly had powerful and sacral functions (2002: 3-6; 2001: 476).¹⁵² As noted above, she also suggests that the evidence at Gudme is contrary to the "traditional archaeological view" in which workshop areas and workshop production are "treated as marginal" (Hedeager 2002: 13). Hedeager cites Jørgensen's 1995 publication¹⁵³ in support of the claim that the large central hall at Gudme is situated "in a location held by archaeologists to be the 'workshop area' because of the many finds of workshop material, especially from metal work" (Hedeager 2002: 13; cf. Hedeager 2001: 502). Hedeager states that work in ferrous and non-ferrous metals was done in immediate association with these aristocratic and sacral spaces, and that this craftsmanship was of the highest quality (2002: 7; 2001: 476). Based on these statements, she also makes several claims about the status of metalworkers at Gudme:

Gudme's great wealth suggests that the site was not just a central place for trade and production, but one with sacred connotations; a place where master artisans transformed bars, ingots, and coins of gold into symbolic objects like bracteates and ornamented scabbard mounts. [...] In this place the representation of the world was given a concrete form by specialists in control of the production process by which metal was transformed from one shape (scrap metal, ingots, coins etc.) into another (bracteates, fittings for swords etc.). (Hedeager 2001: 477-8; cf. Hedeager 2002: 7-8)

Instead of focusing primarily on the role of such production in establishing and maintaining social and sacral distinctions within the settlement at Gudme, Hedeager focuses on the general distinction between Gudme and the outside world and the role of the smiths

¹⁵² Hedeager presents some compelling observations in regards to the interpretation of the iconography of the gold bracteates (*guldgubber*) as part of a spatial complex for connecting to the gods. Following Karl Hauck, Hedeager suggests that the gold bracteates portray the god Óðinn on a shamanic "journey to the Other World" (Hedeager 2002: 5). Hedeager suggests that this, coupled with the sacral names of nearby hills (Gudbjerg, "the hill of the god/gods", Albjerg, "the hill of the shrine"), reinforces that "Gudme was indeed the main home of the Odin cult" (2002: 5). She also argues that the close association between metalworking and the central hall suggests that this activity and its products were integral to the fabrication and maintenance of the representation of a sacred place and connection to the sacred realm (Hedeager 2002: 5-6; cf. Hedeager 2001: 472, 476).

¹⁵³ No page reference for Jørgensen's paper is given in either Hedeager's 2001 or 2002 pieces.

themselves in maintaining this distinction. Emphasizing the close association between the *aflar* and key aristocratic and sacral spaces in *Vsp* 7 and *Gylf* 14 as well as her assertion that skilled crafting took place in the immediate vicinity of the Gudme hall, Hedeager suggests that “highly skilled metal work” must be understood in both literary and archaeological contexts as “something closely linked to ideals of royal authority” (Hedeager 2002: 13). Hedeager argues that the smiths in control of these transformations held “high position[s] in society” and were understood as “liminal figures” with “supernatural powers” and “special status” (2001: 484-6; cf. 2002: 7).¹⁵⁴ Therefore the workshop spaces and activities, according to Hedeager’s argument, also show close connections to the generally sacral nature of the settlement at Gudme.

At this point four fundamental nuances in the distinctions between workshop spaces and aristocratic, political and/or sacral spaces need to be reinforced. First, monumental halls and prestigious aristocratic and/or sacral spaces are only very rarely the immediate locations of metalworking activities.¹⁵⁵ Jørgensen’s 2003 study of Tissø, for instance, shows a distinction between, on the one hand, the main aristocratic hall and nearby cult building and, on the other hand, the smithy some fifty metres to the north on the peripheral boundary of the fence-line (Jørgensen 2003: 190-3). Over the four centuries of extensive growth and expansion in the high-quality metalworking and workshop areas south of the hall at Tissø, the hall area and cult area were kept remarkably clean and these spaces were “never a production unit” (2003: 199). Over the course of its development, the distinction between the production areas and the aristocratic/cult area at Tissø becomes increasingly stark (Jørgensen 2003: 186-8).¹⁵⁶ Similarly, although *guldgubber* were found in Room C of the monumental hall at Borg I, there is no explicit evidence of non-ferrous metalworking at the site: these *guldgubber* did

¹⁵⁴ To support her argument here, Hedeager draws upon Eliade’s theories as well as anthropological studies of the role of smiths in central African tribes (Hedeager 2001: 486-8; Hedeager 2002: 7).

¹⁵⁵ Consider, for instance, the magnate’s residence and hall at Toftegård, where there is some evidence to suggest that metalworking took place in the immediate area of this hall (see page 104 above). Consider also the limited evidence of some metalworking depositions and possibly activities in the open sacral space near the hill fort at Helgö (see pages 112-113 above). In regards to this evidence from Helgö, it should also be noted that this sacral space is not to be confused or conflated with a workshop space: the workshops and key “productive sites” at Helgö are unmistakably distinct from this sacral area (see discussion below, on page 140).

¹⁵⁶ The practical noise and safety issues related to smithing work should also be reiterated here. David Hinton, in his 2003 article on “Anglo-Saxon Smiths and Myths”, suggests that some permanent smithy facilities may have been located on the margins of communities for pragmatic reasons related to fire hazards (2003: 271). As Hjärthner-Holder *et al.* observe, one large farm-hall from Modvo in Norway shows signs of smithing practices being carried out inside it: this hall burnt down twice and was then abandoned (2002: 180). So there may have been a local precedent for people learning the hard way that smithing was perhaps more safely performed at some distance from living spaces and key aristocratic, agrarian and domestic settlements.

not necessarily have to be made on-site in order for the sacral space to be understood as sacral. While evidence at Borg I is difficult to interpret, it nonetheless suggests that blacksmithing may have been done in and around this monumental hall. The evidence also reinforces that there were internal partitions within the hall and that there were aristocratic (and perhaps sacral) distinctions between Room C (the ceremonial feasting space) and the other rooms (Arrhenius and Muyingo 2003: 117, 187; Herschend and Mikkelsen 2003: 63-6; Holand 2003: 133-8; Johansen and Munch 2003: 12-8).¹⁵⁷ Crafting and metalworking are neither particularly associated with the sacral and ceremonial space, nor are these or other everyday activities particularly excluded from that space.

Helgö, Uppåkra and some other sites also show evidence of spatial distinctions between monumental halls or hill forts, high-quality metalworking and sacral functions. The toponym Helgö, if it can be interpreted as meaning something like “holy island” (Zachrisson 2004: 145-6), may suggest theophoric associations similar to the toponyms Gudme and Tissø. Similar to Tissø and Gudme, at Helgö both ferrous and non-ferrous metalwork (including the construction of brooches and iron amulets associated with Norse gods) occurred in workshop buildings and areas that were located some distance from the elevated hill fort and sacral spaces (Bergman 2005: 16-7; Bergman and Arrhenius 2005: 79; Zachrisson 2004: 156). At Uppåkra metalworking of ferrous and non-ferrous alloys (including 115 *guldgubber* and evidence of the fabrication of the *guldgubber*) is concentrated in three areas 50 to 160 metres south of the main halls and other aristocratic and sacral spaces (Stilborg 2003: 140). Gudme and, to a lesser extent, Tissø and Uppåkra were remarkably early, elite, sacral and productive sites with monumental halls.¹⁵⁸ Other less productive and/or later sites still show evidence of key aristocratic halls and metalworking, as is the case at Hedeby, Birka, Helgö and Kaupang. All these sites consistently demonstrate distinctions between metalworking spaces and central aristocratic and sacral spaces associated with prestigious or monumental central-place halls.

Second, some less prestigious halls or long-houses show closer associations to workshop spaces than monumental or aristocratic halls, but there is still evidence in these

¹⁵⁷ See also Herschend (1997: 59) for a brief discussion of how different types of entrances are important to understanding how different spaces (ceremonial, high-status versus low-status living areas, etc.) within a hall may have been understood. In contrast to the several smaller southeastern entrances at Borg, Herschend and Mikkelsen suggest that the larger northwestern entrance to Room C at Borg I:1a “must have been elaborate” (2003: 59).

¹⁵⁸ See my discussion of Gudme above and specifically Jørgensen (2003: 177) and Sørensen (1994: 28-31, 39) for details on the unique character of the hall at Gudme.

lesser halls for distinctions between aristocratic spaces, sacral spaces and workshop spaces. As noted above, there is evidence that some metalworking took place inside at least one relatively modest hall at Gudme (Vang Petersen 1994: 37, 39). This is not evidence for a conflation of aristocratic or sacral spaces with workshop spaces. This hall is neither centrally located nor monumental in size¹⁵⁹, and it is clearly part of a fenced farmstead. As Jørgensen points out, several farmsteads at Gudme show signs of metalworking activities, but this evidence conforms to the larger pattern of distinctions between workshop areas (which generally contain only scrap metal or imports intended as scrap) and spaces reserved for warrior elites (which generally contain the prestige items made by the craftspeople at Gudme and elsewhere). The lack of any evidence for pit houses at Gudme may suggest that skilled metalworkers were more permanently situated at this settlement as opposed to the more temporarily or seasonally used pit houses at sites like Åhus II and Tissø. But the sites at Gudme still maintain a distinction between the production of prestige metal artefacts and the consumption and distribution of these artefacts by the social elite.

Halls and farmsteads at other sites also show evidence of metalworking in spaces that are neither aristocratic nor sacral in character. These workshop spaces may be characterized as suiting pragmatic, urgent or commercially advantageous needs. Several sites show evidence of a pragmatic focus on ore processing and/or ship repairs, such as L'Anse-aux-Meadows, Ribe, Hedeby and the inland processing facilities in Norway. Archaeological evidence at L'Anse-aux-Meadows, for instance, shows that much of the metalworking activity on this site was not planned ahead of time, but rather necessary in order to make ship repairs over a period of only a couple decades (Haywood 2000: 117; Wallace 2006: 60). Forges and workshops were located inside a large hall, while a smelting booth appears to have been located some distance away from this hall. Within this hall other distinct partitions served as "high status" spaces and living spaces (Wallace 2006: 38). Other habitations and workshops on this site show similar distinctions in status and types of activities, and the hall in which most of the metalworking took place was distinct from the largest and most prestigious hall at the site (Wallace 2006: 45). Evidence at Sostelid shows that, as is the case with the smelting hut at L'Anse-aux-Meadows, activities related to iron ore smelting took place outside the house while blacksmithing took place inside the house. The long house at

¹⁵⁹ This hall is thought to have been part of a fenced-in farmstead and the hall itself is only 125m², as opposed to the 500m² space associated with the monumental hall at Gudme.

Sostelid in Norway shows evidence that the western partition was reserved for livestock and the easternmost end of the house was used for numerous crafts, including spinning, blacksmithing and non-ferrous metalworking (Hagen 1953: 356, 363; Hjärthner-Holdar *et al.* 2002: 189). Furthermore, the sacral mounds at Sostelid do not show any direct association with smithing activities. Smaller houses, like those found at Knutstad in Norway or the house used as a mint at Sigtuna in Sweden, were used by smiths for working in ferrous and non-ferrous metals and (in the case of Sigtuna) also for habitations (Hjärthner-Holdar *et al.* 2002: 178; Ros 2002: 165, 167, 173-4). Like similar workshop spaces at L'Anse-aux-Meadows, Sostelid and the modest hall at Gudme (Vang Petersen 1994: 37, 39), these spaces at Knutstad and Sigtuna show no evidence of being particularly aristocratic or sacral in themselves.

Third, some of the most productive and intensive workshop spaces show no signs of agrarian, aristocratic or sacral functions whatsoever. Sites like Åhus II and Vikhögsvägen, for example, show evidence of small habitations that were also used as workshops. No open sacral spaces or elevated mounds have been associated with these sites, nor has evidence of monumental or even modest halls or aristocratic centres been found. These sites appear to have been inhabited by craftspeople, including smiths, and close collaboration between different craftspeople may have taken place on these sites. The structure of these sites corresponds in some ways to the workshop and trading areas associated with the elite multi-functional central-place complexes at Tissø, Hedeby and Uppåkra. Thus, such workshop communities are not at odds with sacral or aristocratic spaces. Rather, it appears that pragmatic, commercial and productive convenience and efficiency are factors that should not be overlooked when considering the relationships between aristocratic and/or sacral spaces and workshop spaces.

Finally, both the archaeological evidence at Gudme and the literary evidence from *Gylf* 14 and *Vsp* 7 are unclear as to the nature of the workshop spaces and activities: are these sacred or profane activities and spaces? As I have already discussed the problematic lack of specifically Norse evidence for interpreting smiths and smithing activities as having been understood as sacral, I will not reiterate those details here. (See the Introduction to this dissertation, page 21 and following.) As Brink points out (1996: 141), metalworking took place on all sites that show evidence of prominent aristocratic and/or sacral functions. The preceding archaeological survey shows, however, that sacral spaces and metalworking spaces

differ in several ways. Workshops were the locations where prestige metal objects were produced, but finished products are generally associated with sacral or aristocratic spaces. The sacral spaces identified at most elite central-place complexes are those that contain concentrations of prestige metal items, especially those with clear theophoric associations (*guldgubber* portraying Óðinn, iron amulets of Þórr's hammer, etc.).¹⁶⁰ At some of these elite sites, and also at some less elite sites, sacral spaces are identified by geographic distinctions (mounds/hills or lakes, sometimes with theophoric names) and by open and/or enclosed spaces that appear to have been kept cleaner than is otherwise the case. In contrast, metalworking sites do not show evidence of having been intentionally kept clear of accumulating deposition layers and waste.¹⁶¹ At some sites there is a close spatial association between the main hall and a sacral space: the sacral space may be a room inside the hall, or it may be an open space or building located immediately beside the main hall. In general, metalworking spaces do not demonstrate this close spatial correlation to monumental or aristocratic halls. As pointed out above, at some sites metalworking areas are diametrically opposed to sacral spaces, i.e. metalworking areas are not kept clean and are located on the opposite side of the hall as sacral spaces (and at greater distance from the halls).

While it is clear that skilled metalworking was an essential component in major central-place complexes, all these nuances greatly complicate any argument that directly associates smithing activities with sacral and/or aristocratic spaces. Certainly at Gudme, as elsewhere, the prestige objects produced by smithing were key features in sacral spaces and aristocratic central-place complexes. These production sites and activities were themselves not necessarily understood as sacral, and it is clear that on-site work in precious metals was not necessary to establish sacral and aristocratic spaces. Sites like Borg, for instance, where blacksmithing took place but work in non-ferrous metals may not have been done on-site, could still have monumental halls that contained sacral and/or aristocratic spaces with *guldgubber* and bronze brooches that were obtained through trade. This is clear and compelling evidence for the supportive but spatially distinct role of smithing workshops in the establishment of these complexes.

¹⁶⁰ Consider, for instance, the sites at Borg, Helgö, Gudme, Tissø and Uppåkra (Jørgensen 2003: 183; Zachrisson 2004: 148-9, 153, 156).

¹⁶¹ Consider, again, Borg, Helgö, Gudme, Tissø and Uppåkra, as well as lesser sites like Toftegård and Bejsebakken (Jørgensen 2003: 180-1; Nielsen 2002: 197).

Although workshops may not have been located in direct proximity to sacral spaces, some recent studies have suggested more direct practical connections between smithing and the sacred at some sites. First, it is worth briefly mentioning two preliminary studies into associations between burial sites and smithing activities in early medieval Scandinavia. Terje Gansum has recently made a compelling case for the re-interpretation of burnt bone deposits as evidence for the use of bone-coal¹⁶² in smithing (particularly the production of phosphorus-rich iron) rather than, as has generally been the case, evidence of cremation or cooking activities (Gansum 2004: 44). This introduces the potential for associations between smithing activities and bones and perhaps death. Second, Lisa K. Larsson has recently published a preliminary study of two early Iron-age burial mounds 200m apart from each other in Östra Bökestad, Sweden. No evidence of settlements has been found on either site. These mounds both show evidence of burials starting in the Bronze Age with the oldest burials located at the top of the mound and the most recent at its base. The mounds are deliberately covered in a tight stone-packing (Larsson 2005: 111, 118-9). In the late Vendel Period and early Viking Age, after a period during which no activity (burial or otherwise) is apparent, these mounds were intentionally disturbed in order to establish open-air forges on top of the hills in the areas occupied by the most ancient, Bronze-age burials (2005: 104-5, 111). Activity at the forges is contemporaneous with the latest burials at the base of the hills (Larsson 2005: 106). At both sites bones were crushed, burnt and deposited in and around the extant stone-packing, and it is possible that bone-coal was used in the forges too (2005: 114, 118-9). Larsson suggests that there was a “conscious decision to open and ‘destroy/disturb’ the earlier Iron Age burials [...] just as there had been a choice to establish an iron production site” on the hills (2005: 111). She suggests that this reinforces smithing as part of a practice that can re-connect with the past and activate the “dead’s connection to the living and vice versa” (Larsson 2005: 112).¹⁶³

Two other recent studies have also investigated conceptual parallels between cooking and smithing, suggesting ritual and possibly sacral connections between cooking and smithing sites. Jostein Bergstøl has examined evidence for more than 140 pits dating from the

¹⁶² Gansum’s hypothesis here is that bones were burnt in low oxygen environments and turned into bone-coal in much the same way that wood can be turned into charcoal. This bone-coal could then be used in various smithing processes as a fuel with chemical properties (and socio-cultural symbolism) slightly different from charcoal. Gansum’s preliminary evidence illustrates how bone-coal might be distinguished from other types of burnt bone deposits in the archaeological record.

¹⁶³ Burström (1990: 261-71) and Farbregd (1993: 8-11) also investigate the connection between iron working and conceptions of death.

first through to the seventh century at Hurdal Prestegård in eastern Norway (Bergstøl 2002: 77-8). These pits were overwhelmingly used for cooking, with the exception of a small number which were clearly used for smithing processes typical of major trading and production workshops during the Migration Period and Viking Age in Scandinavia. Bergstøl argues for a connection between cooking and smithing at this site by drawing upon Randi Barndon's application of theoretical concepts of micro-cosmos. The smithy is, according to Barndon, understood as

“a context in which ‘technology’ creates a ‘micro cosmos’ and a space where metaphors about life and its moral content can be staged. Through and in line with this context the items produced are also given a specific significance, such as furnaces, hoes or pots, all bearing connotations of the same theme within them.” (cited in Bergstøl 2002: 79-80)¹⁶⁴

Bergstøl suggests that this sense of a ritual micro-cosmos implies a parallel and a connection between smithing and cooking. He also suggests that the site at Hurdal Prestegård may reinforce that smithing and cooking took place in relation to similar pit formations and in relation to similar ritual practices.

In his recent analysis of an archaeological site near Järrestad in south-east Scania, Bengt Söderberg suggests that “smithing and cooking stand out in the archaeological material as perhaps the most important activities, closely linked to the hall and *hov* environment” (2003: 297). Although the cooking and smithing activities may be similar in importance, the preliminary evidence suggests a clear distinction between cooking activities and smithing activities. Evidence of cooking in the hall is found in the western end primarily, and there is some evidence that may indicate cooking or ritual burning where fire-cracked stones and animal remains have been found, some fifty metres to the west of the hall (Söderberg 2003: 296-9). Evidence of smithing (including slag, vitrified clay, hammer scale, and iron) is contained to the house located some five to ten metres the south-west of the hall (Söderberg 2003: 297-8). Söderberg proposes a “structuralist” approach to interpreting this site, concluding that “smithing and cooking are interpreted as closely integrated activities, involving the oppositional pairs of life/death, culture/nature” (2003: 283, 300). Major proponents of these binary oppositions and structuralist approach are Claude Levi-Strauss

¹⁶⁴ Bergstøl cites Barndon's Ph.D. thesis, *Matters of Metallurgy, Masters of Metaphors: Iron working among the Fipa and the Pangwa of Southwest Tanzania* (Barndon 2001), which was, at the time of Bergstøl's 2002 publication, still in preparation.

and, more specifically, Margaret Clunies Ross's interpretation of the confrontation between the Æsir and the giant Þjazi over an ox and an earth oven (Clunies Ross 1994: 116-8). It seems valid that these binaries situate cooking and smithing as structurally parallel one to the other. The archaeological evidence at Järrestad, however, preserves spatial and functional distinctions between these two types of activities.

Bergstøl's and Söderberg's arguments suggest structural or metaphorical parallels between cooking and smithing practices. Similarly, as noted above, the language of Eilífr's *Þórdrápa* depends upon a metaphorical interplay between cooking and smithing allusions and motifs. As I have pointed out, *Þórdrápa* does not blur distinctions between cooking and smithing. Rather, it reinforces that these two activities could be understood as distinct, one from the other, even when set closely in parallel. Both smithing and cooking required the heat of a fire and, frequently, some sort of container or controlled space. Evidence at Hurdal Prestegård shows that the pit structures used predominantly for cooking might also be suitable for smithing activities. It is possible that forges or the remnants of a smelting procedure could be used to cook food, and general structural parallels may be observed between the construction of a cooking pit and the construction of a forge. But this is not to say that a forge or furnace is the same thing as a cooking fire or domestic hearth, and much less that cooking is the same as smithing or smelting. Making a fire capable of reaching more than 700°C in order to work metals is a distinct, but parallel, process to making a fire that is only capable of the much lower temperatures sufficient for cooking.

Associations between sacral sites, ritual practices and smithing activities are still debatable. The above are some areas of preliminary research that may prove fruitful in the future. For the time being, the early evidence from Gudme and elsewhere suggests that aristocratic and sacral spaces were distinct from workshop spaces in which metalworking took place.

Studying the site at Háls in Iceland, Kevin Smith suggests that "as a critical resource with limited distribution and an ideological charter linking its production to the realm of the gods, iron could potentially have been monopolized by Icelandic chieftains" (2005: 187). Smith's evidence for this is that *Gylfaginning* chapter 14 establishes a paradigm "that ties metalworking and skilled crafting to the creation of new societies and identifies these technological and aesthetic endeavors as gifts from the gods, equal in importance to, and essential for supporting the establishment of governments, domestic units, and religious

institutions” (2005: 184). In chapter 30 of *Egils saga*, Skalla-Grímr is said to have been *járnsmiðr mikill ok hafði rauðablástr mikinn á vetrinn*, “a great iron-smith and used to do a lot of bog-iron-smelting during the winter” (ÍF 2 1988: 78-9).¹⁶⁵ Skalla-Grímr is also skilled in building ships, and his is an influential political figure in the settlement of Iceland: the settlement at Borg is one of the most prominent early settlement areas. Smith points to possible associations between political power, settlement paradigms and iron access. There is, however, no evidence in *Egils saga* to suggest that Skalla-Grímr's smithing activities are sacral in nature.

Evidence at Helgö, however, may strongly suggest associations between metalworking activity and the realm of the sacred. Helgö demonstrates a clear distinction between the aristocratic hall on top of the hill and the workshop sites located some distance away from this hall, mostly to the north and northeast. These workshops were responsible for the production of many prestige items with great ideological significance (Zachrisson 2004: 156). Immediately south of the hall, a stony ledge is clearly a space in which sacral depositions were made over the course of several centuries. These depositions include iron amulets associated with particular Norse gods, as well as tools, crucibles and objects associated with casting and smithing activities (Zachrisson 2004: 155). Zachrisson does not comment on this evidence in terms of actual smithing activities at the stony ledge: smithing activity seems to have been concentrated at the identified workshops. The deposition of this smithing material, however, may suggest some ritual link between smithing activity and sacral realms. It may also testify to a period during which this area was used as a waste site, but this seems unlikely given the prolonged use of the stony ledge as a ritual deposition site and the evidence of smithing waste near the workshop sites. Importantly, however, it is the smithing material, tools, and waste that are part of the evidence for this potential link, not the smithing workshop areas themselves. Thus, arguments (like Hedeager's) for smithing activities as fundamental to connections with the sacral realms may be valid, but it is questionable whether actual smithing sites and workshop sites demonstrated such sacral connections.

It is important to maintain a distinction between evidence of the role of metalworking within communal structures and evidence related to the role of individual smiths and multiple

¹⁶⁵ The term *rauðablástr* and the significance of bog iron are discussed in more detail in relation to *Völuspá* stanza 40.

craftspeople. Based upon evidence of smithing activities and trading, Brink and Hedeager make cases for forges and smithing activities as integral parts of influential multi-functional central-place complexes in medieval Scandinavia. They may, however, overstate the evidence for the role of the individual smith within these communal structures. With the exception of a few suggestive but not conclusive sites (like the mint in Sigtuna, for example) we do not have compelling evidence of smiths with highly specialized skill-sets residing permanently at influential political and religious centres, having their productions controlled by their respective settlement complex and its leader(s). What we do have is evidence of smithing production sites, tools, waste and finished artefacts. Mikael Andersen maintains a close focus on this evidence and advocates a more balanced appreciation of individual smithing figures as skilled in multiple areas but not necessarily specialized masters in only one area. Andersen suggests that some noblemen “might employ goldsmiths and other specialized craftsmen at their farms. But most craftsmen had to master several professions” (Andersen 1993: 645). According to Anderson, the Mästermyr tool chest is a case in point, since it contains “tools for both forging and woodworking, as well as scales and other equipment used in trading” (1993: 645). Anderson also observes that there were distinct variations in local production versus trade from specialized locations for whatever could not be acquired locally, i.e. combs, jewellery, beads, glass, precious metals and bronze.

In addition, Johan Callmer has made a convincing case for highly specialized metal-smiths needing to be more ambulatory and, thus, not being exclusively controlled or owned by any one central-place complex or magnate: rather, these highly skilled masters likely traveled somewhat independently of the sedentary political and trading powers, making use of established workshop facilities as they came and went (Callmer 2003: 337-44). There is, thus, a crucial distinction between, on the one hand, evidence of relatively permanent smithing facilities and activities and, on the other hand, evidence of different types and qualities of craftspeople and the relations between those craftspeople and central place complexes.¹⁶⁶ In this context, Brink’s conclusions are valid only insofar as they confirm the case for forges and other metalworking facilities as integrated into several types of settlements, with particular prominence at several larger and more influential central place complexes (Brink 1996: 240-1).

¹⁶⁶ On the topic of permanent blacksmithing facilities and the stationary associations of bog iron ore smelting activities, see Hinton (2003: 279) and see the discussion of a verse from *Flóamanna saga* (page 185 below).

Furthermore, Callmer extends his findings at Åhus II into a comparative argument for interpreting several similar sites throughout Scandinavia as long-standing workshop communities that were structured differently from the agrarian complexes that sometimes developed into powerful aristocratic and religious nodes. Rather than having an aristocratic hall or large religious space at its centre, the grids at Åhus II are regular, with habitation plots suitable to families of five to ten people. Callmer hypothesizes that locations like these developed from small temporary sites into larger communities that were constantly occupied by mostly itinerant craftspeople who formed collaborative and mutually supportive communities. Evidence clearly shows that all sorts of crafts were practiced at these locations, especially since close collaboration was necessary in order to make many of the artefacts associated with these sites (e.g. brooches and combs). Some of these craftspeople were itinerant, while others were more permanent. Many were generalists, while some were specialists. There does not seem to have been one particular figure of the smith or craftsperson, but rather a variety of roles within one developing type of community that consolidated resources and tools, including furnaces and forges. Callmer suggests that

The lifestyle, culture, perhaps also their vernacular set the people active as craftsmen and traders aside from the inhabitants of the different regions. Frequently the remoteness (in relation to central locations in the regions) and the coastal location of the places [like Åhus II] contributed to this social isolation. Local society of the period had great difficulties in assimilating a population, which by its habits, doings and for many, by its extraction was alien. Consequently it is most likely that many of these traders and craftsmen never became part of the local society and then we must consider the probable issue of the formation of a separate society. We may tend to imagine these people, on the margin of the majority population, weak and vulnerable and exposed to conditionality. This may be a false picture. They gathered many together [Åhus II could have hosted 500-1000 at its peak size] and they could certainly instantly muster a relatively large troop of armed men. (Callmer 2002: 155)

According to Callmer, Åhus II resembles the culturally liminal yet highly practical workshop and market sites on shorelines or beaches (the northwest European *wics*), as well as at sites like the large workshops on the islands of Birka and Helgö, which may have produced goods for chieftains on site and in “a defined region around Lake Mälaren” (Hjärthner-Holdar *et al.* 2002: 169; cf. Hill 2001: 104-10).

Callmer's work presents a different picture of the workshop areas and the individuals using those areas in relation to the aristocratic individuals and halls. Evidence shows that many of the larger workshop areas established at or nearby elite central place complexes like Gudme (i.e. Lundeborg), Tissø, Uppåkra, and elsewhere were not permanently occupied by particular groups or individuals, but rather seasonally used during times of intense production and/or trade, and/or in association with festivals. Callmer's work may also introduce a clear distinction between these larger expanses of workshops and smaller workshop areas closely associated with particular halls in an early phase of settlement. Take, for example, the original metalworking building north of the hall at Tissø. This workshop clearly operated from the earliest phase of settlement and over several centuries as a distinct production unit from the developing metalworking areas north and south of the hall.

This distinction between types of workshops suggests that at the early phase of settlement in *Vsp* 7 the *aflar* were likely situated within the main enclosure of the settlement of the Æsir, as was the case at Tissø in its first phase. At this point in the narrative of *Vqluspá*, the *aflar* are productive units integrated within the Æsir's community and population: there is no evidence at this point in the narrative of out-sourcing, trade or itinerant, external groups.

1.7 *Vqluspá* 7 - Conclusion: interpreting *afl* 2.

The extant attestations show that *afl* almost exclusively refers to a forge and/or furnace used for metalworking, most often in association with iron but also with reference to gold and other non-ferrous metals. *Afl* may, in some rare instances, refer to a workshop area or edifice, perhaps in metonymic association with the metalworking forge or furnace features contained therein. With this definition in mind, I will now return to *Vqluspá* stanza 7 and a detailed examination of the role of the *aflar* in the first settlement of the Æsir. There are three key items to consider in discussing this attestation. First, these *aflar* are associated with *tangir*, "tongs", *tól*, "tools", as well as *auðr*, "wealth, precious objects." Second, these *aflar* are established in an area known as *Iðavöllum*. I will discuss the meaning of this name and the significance of this location. Third, these *aflar* are established in relation to several other structures and spaces. These structures and spaces include a *hqrgr*, "outdoor sanctuary", and a *hof*, "temple" or an enclosed sacral space or edifice (La Farge and Tucker 1992: s.v. *hqrgr*,

hof). These structures also seem to be associated with administrative and aristocratic functions.

Tongs, tools and precious objects

The *aflar* are clearly responsible for the production of *auðr*, “precious things”, and the shaping of *tangir*, “tongs”, and *tól*, “tools” (7.5-8). *Tangir*, “tongs”, generally refers to the tongs of a smith, which were likely made of iron and used to handle hot iron or other metals (Cleasby-Vigfusson 1957: s.v. *töng*; Fritzner 1954: s.v. *töng*; *LP* 1931: s.v. *töng*; *ONP* 2010: s.v. *töng*). *Tól* more generally refers to crafting equipment, usually to iron tools used for woodworking, general crafting, and sometimes metalworking (Cleasby-Vigfusson 1957: s.v. *tól*; Fritzner 1954: s.v. *tól*; *LP* 1931: s.v. *tól*; *ONP* 2010: s.v. *tól*). *Auðr*, however, does not refer to tools, but is rather a general term for “wealth, riches, treasure” or, in this specific context, perhaps “precious objects” (La Farge and Tucker 1992: s.v. *auðr* m.). Elsewhere in the *Poetic Edda*, compounds like *auðrann*, “house filled with riches”, and *auðsalr*, “hall filled with riches” appear, clearly associating the general term *auðr* with the display and circulation of wealth in an aristocratic hall (La Farge and Tucker 1992: s.v. *auðrann*, *auðsalr*; cf. Cleasby-Vigfusson 1957: s.v. *auðigr*). Moreover, the first two lines of *Vsp* 8 portray the Æsir enjoying the golden game-pieces and the abundance of gold that seems to be the product of these *aflar*: *Teflðo í túni, teitir vóro, / var þeim vettergis vant ór gulli* (Neckel and Kuhn 1962: 2),¹⁶⁷ “They played checkers in a courtyard, they were cheerful, for them there was no lack of gold at all.” In this context *auðr* appears to refer to objects of gold in opposition to the *tangir* and *tól*, which are likely made of iron. The tools and tongs are, it would seem, made in order to work with gold and to produce gold artefacts. While Hedeager suggests that the Æsir used these *aflar* to smelt iron ore (2001: 499), there is no clear sense that the gods extract and refine ore here: the *aflar* are primarily associated with the shaping

¹⁶⁷ La Farge and Tucker suggest that *tún* translates as “courtyard, (enclosed) field; home meadow” (1992: s.v. *tún*). Hermann Pálsson notes that the term *tún* in this stanza is significant in that it likely refers to a central courtyard area associated with a hall or multiple halls:

[I]n Iceland [*tún*] denoted ‘a homefield’, the cultivated meadow close to the farmhouse. In Norway, however, *tún* meant the space between the farm buildings, ‘the yard’. It is of course more likely that the gods played their games of draughts in the sheltered courtyard than on an open meadow. In this connection it is worth noting that the [ninth-century] Norwegian poet Þorbiörn hornklofi refers to some warriors who were throwing dice in King Haraldr’s courtyard: *rógbirtingar, / þeir es í Haralds túni / húnum verpa* [“warriors, they are in Haraldr’s courtyard, they throw (game) pieces”]. (Hermann 1996: 63; cf. *SPSMA* 2001-2010: Þorn Harkv¹)

(*skapa*) of tongs and the creation (*smíða, gøra*) of precious objects and other tools. There is no explicit mention of smelting activities, although this too may be understood. Thus, *aflar* likely refers to open forges primarily, since these were sufficient for the shaping (blacksmithing) of iron and the casting of non-ferrous metals. This suggests the importance of productive metalworking facilities (particularly those that work with gold) in prestigious settlement contexts.

Moreover, the attestation in *Völuspá* 7 is rare in that it is in the plural, *aflar*: only two other attestations in the Norse corpus mention multiple *aflar* together like this, and those are the paraphrase of *Vsp* 7 in chapter 14 of *Gylfaginning* (cf. *afl* 13 above) and the description of the sinful work of the devil in *Elucidarius* (cf. *afl* 10 above). The effect of the plural *aflar* in *Vsp* 7 is most likely literal: there is more than one forge and/or furnace or metalworking area established in association with this first settlement of the Æsir. This description of multiple *aflar* may imply that there were many metalworking facilities and jobs to be done, and/or many skilled smiths. Archaeological finds at extensive workshop communities like those at Tissø, Gudme and Lundeberg, Uppåkra and Åhus II show that it is possible for multiple forges and/or furnaces to be active contemporaneously at different plots on such sites. Archaeological finds at Ribe (Jensen 1991: 31), Birka (Holmquist Olausson 1993: 104-5) and Håls (Smith 2005: 190-1) also show that it is possible for multiple forges or furnaces to be active contemporaneously inside an individual workshop structure or space. It is clear that enclosed smithing workshops like Håls and Birka contained three furnaces (at Håls) used for processing bog iron and four forges used for blacksmithing and non-ferrous smithing (at Birka). These structures were found in a younger layer of finds, overlaying older and much larger single furnace (at Håls) and forge (at Birka). Dating evidence shows that it is possible all the younger structures at Birka and Håls were in use contemporaneously. At Ribe a forge for non-ferrous crucible work and a fire for heating moulds were located in one open space and were in use contemporaneously. Thus, the archaeological evidence suggests that there are a number of possible situations in which multiple *aflar* might be referred to.

Iðavöllr

Vsp 7 implies that these *aflar* are recognizable smithing and crafting areas or structures situated somehow in relation to the *hqrgr oc hof* in a geographical location named Iðavöllr. Iðavöllr appears in stanza 7 and again in stanza 60 of *Vsp*, after the apocalypse:

Finnaz Æsir á Iðavelli (60.1-2), “Æsir assemble on Iðavöllr.”¹⁶⁸ Although there is no mention of *aflar* in the post-apocalyptic setting, in *Vsp* 61 some of the metallic artefacts first created by the gods in *Vsp* 8 are once again discovered:

Þar muno eptir undrsamligar
gullnar tqflor í grasi finnaz,
þærs í árdaga áttar hqfðo. (61.1-6).

There will once again, wondrously, the golden game-pieces in
the grass be found, those that in earlier days they had
possessed.

The gold-thatched hall at Gimlé in stanza 64 and the field in which the golden game-pieces are re-discovered in stanza 61 seem to be the same place as the Iðavöllr (stanzas 7 and 60) upon which the Æsir originally meet and establish their settlement and first played with their gold game-pieces. In *Vsp* 62 the seeress says that after the apocalypse on Iðavöllr *Muno ósánir acrar vaxa* (62.1-2), “unsown fields will grow.” Thus, Iðavöllr is repetitively associated with the origins of sacral spaces, buildings and remarkably productive and elite agrarian complexes, including particular reference to the metal gold and, at least in *Vsp* 7, *aflar*. As the interpretation of *Vqluspá* in *Gylfaginning* suggests, the site on Iðavöllr appears to be cyclically associated with a *gullaldr*, “golden age” (Faulkes 2000: 15), in a rather literal way: the toponym is repetitively associated with precious metals.

The meaning of the toponym Iðavöllr is somewhat unclear. The second component of the name is the masculine noun *völlr* in the singular (*vellir* in the plural). *Völlr* definitely means “a grassgrown plain, an open space” (Holtsmark 1969: 99), an “open field” or “plain” (La Farge and Tucker 1992: s.v. *völlr*; Fritzner 1864: s.v. *völlr*). As Holtsmark points out, it “is a term frequently used as an appellative and as a second element in a number of place-names” (Holtsmark 1969: 99). Holtsmark also points out that, apart from its role in Iðavöllr,

the term *völlr* is used twice in *Vqluspá* as an appellative, in the plural. In the stanza [24] which refers to the war against the vanir, which ended by a victory for the vanir, *knáttu vanir vígská völlu sporna* [“vanir were able to, terrible in battle, tread with their feet on the plains”],¹⁶⁹ the *vellir* obviously are plains in Asgarðr. In stanza 31 it is said that the Mistilteinn was

¹⁶⁸ The only other appearance of the toponym Iðavöllr is in *Gylfaginning* chapters 15 and 53. As Anne Holtsmark points out the source for the information in *Gylf* is clearly *Vqluspá* and thus *Gylf* should be seen as an interpretation rather than a separate source (Holtsmark 1969: 100).

¹⁶⁹ Several scholars suggest an emendation of *vígská* as it appears in R to *vígspá*, “battle spell” (Neckel and Kuhn 1962: 6; La Farge and Tucker 1992: 293; Dronke 1997: 13).

growing *vǫllum hærri* [“higher than the plains”]. (Holtsmark 1969: 102, my translations)

So the meaning of *vǫllr*, the second element in *Iðavǫllr*, is clear and well demonstrated.

Scholars have proposed a number of possible meanings for the first component, *iða-*, and for *Iðavǫllr* as a single unit. de Vries suggests that “shining field” is the most preferable option (de Vries 1977: s.v. *Iðavǫllr*). As de Vries notes, Willy Krogmann has argued that *ið* shares etymological origins with *eisa*, “glowing fire/ash” (de Vries 1977: s.v. *eisa*, *Iðavǫllr*) or “embers, glowing ashes, shower of sparks, ?bonfire” (ONP 2010: s.v. *eisa*). Krogmann’s argument here is based upon the Norwegian and Swedish word *id*, referring to a fish that is also called *idmort*, *idmurt* (Krogmann qtd. in de Vries 1977: s.v. *Iðavǫllr*; Holtsmark 1969: 101). Krogmann suggests that this name represents “an Indo-European root, the semantic kernel of which is ‘burn, gleam’” (qtd. in Holtsmark 1969: 101). Holtsmark points out that apart “from the fish-name there is no trace of such an etymon in Old Norse or other Scandinavian languages. Krogmann has had to postulate a lost adj. **iða-* appearing as a noun in the fish-name” (1969: 101). Holtsmark concludes that Krogmann’s “solution cannot be said to be a very happy one. Methodologically, it is far-fetched to explain a name from a hypothetical etymon when the language of the Viking period had a homonym” (1969: 101-2). Nonetheless, de Vries presents Krogmann’s suggestion as the preferable option, as do Folke Ström and Lee M. Hollander (Holtsmark 1969: 102).

Some scholars have developed what Holtsmark identifies as slightly Christianized or Edenic interpretations of *Iðavǫllr* as a paradisiacal place. Holtsmark suggests that the association between *Iðavǫllr* and a *gullaldr*, “golden age”, in *Gylfaginning* clearly comes from a Christian period later than the original composition of *Völuspá*. Thus, the setting on *Iðavǫllr* is made into

a symbol of the ‘golden age’ which [Snorri/the author] reconstructs from classical and Old Norse sources, i.e. his scholastic and skaldic learning. His view of the *Iðavǫllr* lingers on with interpretators of our time. Sophus Bugge thinks that the name may be a loan, via Old English, from the biblical Eden. Linguistically [this] is impossible [...] but the two words might have been combined by a piece of popular philology in Snorri’s time. But then the two words must have been there beforehand, and *Iðavǫllr* is still unexplained. Bugge’s hypothesis has gained but few followers, but nevertheless his idea has coloured later interpretations. (Holtsmark 1969: 101)

As examples of these “coloured” classical and/or Christian interpretations Holtsmark points to Finn Magnussen’s *Gudenes Forsamlingsplads*, Sveinbjörn Egilsson’s *Campus Idæus* and Finnur Jónsson’s “*marken som altid gentager sig, forynger sig af sig selv*” (‘the field which always reiterates, rejuvenates itself’). Sigurður Nordal, in his commentary to *Völuspá*, goes a step further and translates ‘*fagert grøn, stedsegrøn slette*’ (‘beautiful green, evergreen plain’))” (Holtsmark 1969: 101). More recently, John Lindow has suggested that “eternal field” “makes the most sense, given that *Iðavöllr* is the terrestrial equivalent of the paired second-generation gods and their gaming pieces and memories that survive the mythological present and Ragnarøk” (Lindow 2002: 198). Although these translations may make sense in relation to the context, particularly with the information provided in *Snorra Edda*, they do not have a solid basis linguistically. Furthermore, Holtsmark rejects the “notion of *Iðavöllr* as a heathen Paradise”, stating that as “a *völlr* is *eo ipso* grassgrown, it is bound to be green, but this notion is not implicit in the name and there is no allusion to it elsewhere in the *Völuspá*, and there is no mention of its beauty” (Holtsmark 1969: 101). On linguistic grounds Holtsmark makes a valid critique of the interpretations suggested by these scholars. Nonetheless, the associations to rejuvenation and gold could be accurate contextual interpretations even though they may not have a basis in the linguistic meaning of *Iðavöllr*. As quoted above, there is a description of crops growing on the field without sowing after Ragnarøk, and there may be a close association between *Iðavöllr* and the metal gold. While Holtsmark’s concerns about overly Christian interpretations are valid, these associations carry idyllic implications in terms of production and fertility in both pre-Christian and Christian contexts.

Of course, the fundamental issue is not necessarily the contextual meaning, but the potential original, linguistic meanings of *iða*- and *Iðavöllr*. In this regard, Holtsmark explains that there are two viable options. First, *iða* may have a short vowel. In this case the possible interpretations are “*iði*, m. gen. *iðia* ‘backwater’, *iðia* (grœnn) ‘ever-.’ [...] Etymologically this word may be grouped with the same etymon as Lat. *iterum* [“again, a second time”]” (Holtsmark 1969: 99). Second, *iða* may have a long vowel. In this case, Holtsmark points out, the likely interpretation is “*ið*, f. pl. *iðir* ‘activity, pursuit’; the etymon seems to have been productive in Old Norse, we find *iðn*, f., *iðka*, v., *iðinn*, adj.; *iðia*, v. and f., is also grouped with *ið*” (Holtsmark 1969: 99). “Most probably”, Holtsmark continues, “a skald from the Viking Age and his audience would associate *Iða*- with one of these two words,” i.e.

the short or long vowel, meaning “backwater/again” or “activity, pursuit” respectively (1969: 99). Holtsmark explains that the long vowel is the most likely usage:

the form *Íðá-* would at once be recognized as the gen. pl. of *íð*, f., meaning ‘pursuit’, as an *Iði* would have *iðia* as a genitive form. The etymon *íð* ‘pursuit’ seems to have such a strong position that it is hardly likely that a homonym could be used in a mythical local name where the intention of the skald must have been to give his audience associations as to the nature of the *vǫllr*. (Holtsmark 1969: 99-100)

As Holtsmark points out, the “Æsir had indeed many pursuits on the *Iðavǫllr*” and the descriptions of activities in stanzas 7, 8 and 61 reinforce a contextual understanding of *Iðavǫllr* as “Field of pursuit”, or (perhaps more precisely) “Field of pursuits” (1969: 100).

Hqrgr oc hof

These *aflar* are first established on *Iðavǫllr* as part of a complex of other buildings and spaces that are notably sacral and administrative in function. Despite the fact that several translators use the plural for both *hqrgr* and *hof* in *Vsp* 7 (Dronke 1997: 8; Larrington 1996: 5),¹⁷⁰ *hqrgr*, being a masculine noun, clearly appears in the singular and would be spelled *horga* if it were in the accusative plural. *Hof* is a neuter noun and takes the form *hof* in both singular and plural accusative. Thus, *hof* could be interpreted in the singular or plural, but *hqrgr* must be singular. *Gylfaginning* suggests that multiple temples or hall structures are built at this point in the mythological narrative (Faulkes 2000: 15). In the context of *Vǫluspá* 7, a parallel construction in agreement with *hqrgr* in the singular may dictate that *hof* is also singular, but this is not necessarily to say that only one such structure is built.¹⁷¹ *Hqrgr* consistently refers to an altar of stone or an elevated and open (outdoor) space, such as a hill or mountain (Cleasby-Vigfusson 1957: s.v. *hörgr*; Fritzner 1954: s.v. *hörgr*; Hermann 1996: 63; La Farge and Tucker 1992: s.v. *hqrgr*; *LP* 1931: s.v. *hörgr*; Turville-Petre 1975: 239-43). *Hof* refers to an enclosed sacral space or edifice, e.g. a temple built of timber (Cleasby-Vigfusson 1957: s.v. *hof*; Dronke 1997: 119; Fritzner 1954: s.v. *hof*; La Farge and Tucker 1992: s.v. *hof*; *LP* 1931: s.v. *hof*; Turville-Petre 1975: 239-43). This suggests that, in the

¹⁷⁰ Dronke cites *Vafþrúðnismál* 38, where *hofom ok horgum* appear in the dative plural, and *Helgakviða Hjörvarðssonar* 4, where both nouns appear in the accusative plural, *Hof mun ek kiósa, / horga marga* (1997: 119).

¹⁷¹ Consider Lindow’s fairly literal translation, which could be interpreted as somewhat ambiguous as to the precise number of altars and temples that are built: “The Æsir assembled on *Idavǫllr* / Those who altar and temple high timbered” (2001: 197).

context of *Vsp* 7 at least, such smithing establishments and the products of smithing are definitive features of settlements with prominent sacral spaces or functions.

There is evidence in *Vqluspá* to suggest that this settlement on *Iðavöllum* also has prominent administrative functions in establishing and maintaining social and political order. There are several instances in *Vsp* when the gods assemble at their *røkstólar*, “judgement or council seats” (La Farge and Tucker 1992: s.v. *røkstóll*). The gods do this in stanza 6 before organizing the cosmos into patterns of time and space. They also convene at these *røkstólar* in stanza 9 to debate about the creation of the dwarfs. In stanza 23 they hold council before Óðinn starts the first war in the world, and in stanza 25 they meet again at the *røkstólar* to determine who had pledged Freyja to the giant-family in marriage. The repetitive councils at these *røkstólar* clearly function in a social and political way. The *røkstólar* are also closely associated with the settlement on *Iðavöllum*, which is itself the repeated meeting place of the gods in *Vsp* 7 and 60. Thus, the *aflar* are established in relation to a settlement that also has prominent social and political functions.

While it is possible that the *Æsir* went some distance from the *hqrgr oc hof* to establish their *aflar*, the stanza nonetheless presents the work of establishing all these buildings and/or spaces as closely associated conceptually and chronologically if not also spatially. Concepts of distinct regions or geographical locations as well as travel into and out of distinct regions do not seem to enter into the narrative of *Vsp* until stanza 8, with the arrival of the three female giants from the regions known as the *Jqtunheimar* or *Jqtunheimar*, “Giant-lands” (8.8).¹⁷² These journeys across boundaries are a major thematic feature of the mythological narratives. Clunies Ross identifies these interactions between the gods and the giants as, in many cases, having to do with the desire for resources and cultural artefacts: various “strategies of predation” demonstrate the gods’ practice of unilaterally exploiting the giants (Clunies Ross 1994: 103). But it is clear that at this chronological point in *Vsp* 7, the so-called *gullaldr*, “golden age” (Faulkes 2000: 15), such distances and distinctions are not yet operative: the *Æsir* appear to happily make and consume their own wealth at this point. Thus, the *aflar* are likely established in relatively close proximity to the *hqrgr oc hof* and the main settlement. The *Æsir*, at any rate, appear to have rather exclusive access to the wealth

¹⁷² The term *Jqtunheimar* in stanza 8 introduces not only the giants themselves, but also the settlements, farms and residences of the giants, i.e. their own multi-functional central-place complexes (cf. La Farge and Tucker 1992: s.v. *heimr*).

produced by the *aflar*.

This description of *Vsp* 7, particularly when considered alongside the related paraphrase in *Gylf* 14, exhibits several of the hallmarks of theories about elite communal structures and networks in early medieval Scandinavia. These texts describe central halls and sacral buildings/spaces that also function as seats of political or social order for surrounding areas. These texts also situate metalworking facilities as key features in the productivity and social power of the settlement on Iðavöllum. Brink, Hedeager, Jørgensen, Smith and Zachrisson make excellent cases for forges, furnaces and smithing activities as integral parts of influential multi-functional central-place complexes in early medieval Scandinavia (Brink 1996: 135-41; Hedeager 2002: 5-10; Jørgensen 1995: 217; Smith 2005: 184-7; Zachrisson 2004: 155-6). This evidence agrees with the information in *Vsp* 7 and *Gylf* 14. The *hqrgr* and *hof* suggest sacral spaces that are closely associated with the workshop site in *Vsp* 7 and the administrative role of the Æsir's *rqkstolar*. The interpretation of *Vsp* 7 in *Gylf* 14 includes descriptions of aristocratic halls, and *Vsp* 8 describes game-playing with golden artefacts in the aristocratic space of a *tún*, "courtyard" (8.1). All this information is comparable to the relationship between workshop sites located some distance from the halls, temples and sacral spaces (such as hills with theophoric names) on sites like Tissø, Gudme, Hedeby and Uppåkra. Furthermore, sites like Birka, Tissø, Gudme, Hedeby and Uppåkra also show evidence of political and social control over surrounding areas in the form of trading connections, large ramparts or defensive structures, trading laws, and the circulation of coins. Archaeological evidence shows that large-scale smithing facilities within distinct spaces and/or edifices were active near magnates' halls in multi-functional central-place complexes that included sacral structures and features like the *hqrgr oc hof* of *Vsp* 7. This settlement pattern suggests that, in the context of *Vqluspá* and *Gylfaginning* at least, smithing facilities and the products of smithing are definitive and formative features of what Brink, Hedeager and others refer to as multi-functional central-place complexes. Both large-scale evidence (like that which has been gathered by archaeological investigations of settlement patterns and networks throughout medieval Scandinavia), and small-scale evidence (like the forge-stone from Snaptun and these short excerpts from *Vqluspá* and *Gylfaginning*) suggest that we are justified, to use Hedeager's words, in interpreting "the archaeological and the written record as different expressions of a single cosmological

model” (2002: 3). Smithing activities and facilities are integral aspects of both the mythological ideal of a central place complex and the historical reality.

Moreover, as Hedeager, Smith, Zachrisson, and others suggest, some prestige artefacts produced or used at smithing facilities (like the *guldgubber*, the Snaptun stone, and various iron amulets) seem to have been integral to forging connections between historical, elite central place complexes and the mythological, sacral ideals of these communal structures outlined in texts like *Völuspá* and *Gylfaginning*. This evidence suggests that the products of metalworking were not only important pragmatically (iron tools for agricultural, domestic and crafting work) and politically (prestige brooches for displaying status, and weapons). Also, the products of metalworking were essential in forging connections with sacral realms and defining sacral spaces. There is, additionally, limited evidence from Helgö suggesting that the tools and crucibles used in smithing activities may have been of sacral significance (Zachrisson 2004: 155-6).

This evidence from both the archaeological and written sources also shows, however, that metalworking spaces are understood in different terms than aristocratic halls and sacral spaces. In fact, the hierarchal and spatial organization of larger central place complexes discussed by Brink (1996: 240-1) and surveyed in the preceding section corresponds to the ordering of foundational events in *Vsp* 7 and *Gylf* 14. According to *Vsp* 7, first, the gods meet together on *Iðavöllr* (7.1); second, they build temples and altars (7.2); third, they establish forges with which to make precious objects and metal tools (7.3-4). This pattern is corroborated by the prose paraphrase in chapter 14 of *Gylfaginning*: first the greatest hall, *Glaðsheimr*, is established as a seat of power for the male gods; then *Vingólf* is established for the female gods; finally, the smithing facilities are established so that all tools and precious objects may be made (Faulkes 2000: 15). In these contexts smithing facilities are clearly of key importance in the central-place complex, but it is important to note that these facilities are established only after the aristocratic leaders have convened and founded their halls and sacral spaces. The ordering of foundational events in *Gylf* 14 and *Vsp* 7 reinforces that the *hqrgr oc hof* are the sacral and aristocratically distinct spaces, the one type of feature (i.e. the *hqrgr*) standing in immediate relation to the other (i.e. the *hof*) and nothing else. In contrast to this, these texts introduce smithing facilities in explicit terms of productivity, not necessarily elevated sanctity or aristocracy. The *hqrgr oc hof* are established as the self-evident and elevated (*há timbroðo*, “built tall with wood”) nodal points of this multi-

functional central-place complex, while it is explicitly stated that the forges are established (without any reference to height or grandeur) so that tools and precious objects can be made: *afla lqðo, auð smíðoðo, / tangir scópo oc tól gorðo*, “they established forges/furnaces, smithed precious things, formed tongs and made tools” (7.5-8). One set of structures is inherently significant while the other is significant as a productive unit in relation to and service of the elevated authority of the former.

While the sanctity of the *aflar* in *Vsp* 7 is perhaps debatable, their role as productive units demonstrating the sanctity and potency of the *hqrgr oc hof* is clear in both the literary context and the archaeological context. In her discussion of the formative role of smithing facilities in multi-functional central places like Gudme, Hedeager suggests that smithing facilities were key at these locations because “the representation of the world was given a concrete form by specialists in control of the production process by which metal was transformed from one shape (scrap metal, ingots, coins, etc.) into another (bracteates, fittings for swords etc.)” (2002: 6). The descriptions in *Vsp* 7 and *Gylf* 14 certainly evoke this sort of direct, on-site relationship between smithing facilities and the halls, temples and sacral open spaces of an elite settlement. It is unclear what sort of distance may be implied between the *hqrgr oc hof* and the *aflar*. There is clear evidence from both archaeological and textual sources that there were spatial and organizational distinctions between workshop spaces and aristocratic and sacral spaces. There is also evidence, however, that during the early phases of settlement individual workshop edifices and areas were situated inside (but at the periphery) of fenced enclosures that also contained central halls and sacral spaces. It seems probable that at this early phase of the Æsir’s settlement the *aflar* stand in close relation to the central aristocratic and sacral spaces, but that they are to be understood as distinct from those spaces in terms both of distance and spatial organization. The establishment of forges and furnaces in *Vsp* 7 is indicative of the foundational role of metal fabrication to the political and sacral associations of the elite, whether the Æsir or human kings. From a synchronic perspective on this moment in the narrative of *Vqluspá*, the tools and precious objects made in the furnaces and forges are clearly integral to the establishment of the Æsir’s political and religious sway over the realm.

In conclusion, *Vsp* 7 demonstrates the usage of *afl* in a context of smithing products and tools. The stanza mentions the ambiguous *auð*, “precious things”, which likely refers to objects made in semi-precious and precious metals. *Vsp* 7 also mentions tongs, which are an

essential feature of the smithing workshop where, as the stanza also mentions, other metal tools would be made. In this context *afl* most likely refers to open forges, since these were sufficient for the working of both ferrous and non-ferrous metals. There is no mention of iron ore being extracted or refined, but it is nonetheless possible that this is implied and that smelting furnaces might also be understood within the reference to *aflar*. In this attestation, it is unclear whether *aflar* refer to specific metalworking forges and/or furnaces or perhaps, by association, to the workshop edifices or outdoor areas that contained these features. It is clear, however, that these *aflar* are contextually related to communal sacral spaces and structures as well as being involved in the creation of other tools. The *aflar* are essential to making these tools from metals and perhaps also from other media, like wood and stone, with the aid of metal tools.

A short note on Gullveig

Gullveig is mentioned only in stanza 21 of *Völuspá* and nowhere else in the Old Norse corpus. As Rudolf Fischer points out, this stanza is one of the most difficult pieces of *Völuspá* to interpret (1963: 582). Karl Müllenhoff observes that there appears to be an assumption in the text of *Völuspá* that the audience will simply recognize and be familiar with certain mythological figures, relationships and stories, and thus no explanation is included (1891: 96-7). The so-called Gullveig stanza is one of these features about which the original audience supposedly knew quite a lot while we know remarkably little.

In this brief note I will only mention and discuss the information that pertains to interpreting Gullveig as a representation of the metal gold.¹⁷³ I will start by outlining the textual information on Gullveig. I will then briefly survey the critical interpretations of this figure that relate to the metal gold. I will conclude by making a few tentative suggestions about how Gullveig could be significant as a smithing motif if there were more evidence about Gullveig herself.

1. Textual and literary details of *Völuspá* 20, 21, 22

Because many of the interpretations of Gullveig depend upon contextual information from surrounding stanzas, I also cite here stanzas 20 and 22. *Völuspá* stanzas 20-22 appear as follows in the *Codex Regius* (R):

*Þaðan koma meyar, margs vitandi,
þriár, ór þeim sæ, er und þolli stendr;
Urð héto eina, aðra Verðandi
– scáro á scíði –, Sculd ina þriðio;
þær lög lögðo, þær líf kuro
alda bornom, ørlög seggia. (20.1-12)*

From there come maidens, much knowing, three, out of that lake, which under a tree stands. Urñr they call one, the second Verñandi – they carved on a stick – Skuld the third. They established laws, they chose lives for the children of people, fates of men. (Lindow 2002: 244 with modifications)

*Þat man hon fólkvíg fyrst í heimi,
er Gullveigo geirum studdo
ok í holl Hárs hána brendo;
þrysvar brendo, þrysvar borna,
opt, ósialdan, þó hon en lifir. (21.1-10)*

¹⁷³ For a discussion of this debate see McKinnell 2001b.

She remembers that war of peoples first in the world, when
they buttressed Gullveig with spears and in the hall of Higher
they burned her; three times [they] burned [her], three times
[she] was born, often, not seldom, though she yet lives.
(Lindow 2002: 154 with modifications)

*Heiði hana héto, hvars til húsa kom,
vǫlo velspá, vitti hon ganda;
seið hon, hvars hon kunni, seið hon hug leikinn,
æ var hon angan illrar brúðar. (22.1-8)*

Heiðr [they] called her, wherever [she] came to houses, a
seeress skilled in prophecy, she observed magic staffs; she
performed *seiðr*,¹⁷⁴ wherever she could, she performed *seiðr* in
a trance, always was she the joy of an evil woman. (Lindow
2002: 165 with modifications)

Although there are no substantial variants in stanza 21 itself in *Hauksbók* (H), both Dronke (1997: 89) and Neckel and Kuhn (1962: 5) point out a few minor variants and errors that I will not discuss here. More important to the interpretation of Gullveig is the fact that there is a confusion of several distinct narratives or narrative sequences in these stanzas.¹⁷⁵ This makes any interpretation of causal relations between stanzas difficult. Although we know remarkably little about the context and meaning of the Gullveig stanza in the ordering of R, the text of R does appear to be the more accurate source in this case.

2. The possible meanings of Gullveig's name

The key issues here are the meaning of the name Gullveig and the significance of behaviours and/or symbolism associated with Gullveig in stanza 21. The name Gullveig itself is a typical Germanic dithematic forename that combines the separate words *gull* and *veig*. *Gull*, a neuter noun, certainly refers to “gold” in some sense (Cleasby-Vigfusson 1957: s.v. *gull*; Fritzner 1954: s.v. *gull*). The primary meaning of *veig* is “drink” or “liquor” (Cleasby-Vigfusson 1957: s.v. *veig*; Fritzner 1954: s.v. *veig*; La Farge and Tucker 1992: s.v. *veig*). Thus “gold-drink” or “gold-liquor” are the most literal translations of Gullveig. de Vries suggests several alternative meanings for the name, all of which are feminine nouns or proper names (de Vries 1977: s.v. *veig*). These suggestions, as well as the suggestions of other scholars, may be organized into six general categories of meaning for this one name:

¹⁷⁴ *Seiðr* is an Old Norse word that appears to refer to the occupation of a sorcerer. See Price for documentation and discussion of *seiðr* (2002: 63-90).

¹⁷⁵ See footnote 5 (on page 3) in the Introduction to this dissertation. H presents a major series of variants in the ordering of stanzas here.

- 1) Gold-power (the greed for gold?), Gold-strength, Gold-force, Gold-martial-strength
- 2) Gold-heavy-drink, Gold-drink, Gold-intoxicating-drink (mead?)
- 3) Gold-thread, Gold-wall
- 4) Gold-cup
- 5) Gold-disaster, Gold-fight, Gold-war, Gold-militant
- 6) Gold-standard, i.e. a banner¹⁷⁶

According to John McKinnell's assessment of this body of scholarship, the "majority view" is that Gullveig

is a quasi-allegorical figure associated with the Vanir, that the Æsir burn her in Óðinn's hall in order to try to exorcise the greed for gold which she represents, but that this merely leads to her being reborn as the *vǫlva* ["prophetess"] Heiðr, whose name is usually translated as the adjective 'Bright'. The attack on her then leads indirectly to the war between the two races of gods, hence to the destruction of the fortress-wall of the Æsir, the employment and betrayal of the Giant Builder, and thus to the moral fall of the gods and the confrontation with the giants which ends at Ragnarøk. (McKinnell 2001b: 394-5)¹⁷⁷

McKinnell, however, scrutinizes the connection between Gullveig in stanza 21 and Heiðr in stanza 22¹⁷⁸ as well as the prevailing interpretations of Gullveig as a representation of the greed for gold. He notes that *gull* does not appear in any "compound nouns which refer to any psychological or moral effect of gold" (2001b: 406). McKinnell's point here is important, but it is difficult to rule out the possibility that any mention of gold might carry strong overtones of greed and strife, particularly in relation to the thematic importance of gold and greed in early legends of the Niflung hoard/Rhine gold. Nonetheless, McKinnell speculatively suggests that the first element, *gull*-, "could mean 'made of gold', 'wearing gold', 'having much gold', or perhaps 'belonging to the gods (especially the Vanir)'" (2001b: 407). According to McKinnell, the second element, *-veig*, "seems most likely to mean either

¹⁷⁶ This information is collected and organized from the following sources: Cleasby-Vigfusson (1957: s.v. *gull*, *veig*), Dronke (1997: 41, 44), Fritzner (1954: s.v. *gull*, *veig*), Hedeager (2001: 493), Hermann Pálsson (1996: 72), La Farge and Tucker (1992: s.v. *veig*), *LP* (1931: s.v. *gull*, *veig*), McKinnell (2001b: 412-3), Motz (1993a: 81), Sigurður Nordal (1978: 42-3), de Vries 1977 (s.v. *Gullveig*, *gull*, *veig*).

¹⁷⁷ cf. Clunies Ross's examinations of "negative reciprocity" and "strategies of predation" between the giants and the gods in the Old Norse cosmological narratives (1994: 45-67, 103-5, 115-22). On Gullveig and interpreting *Vsp* 21 in regards to relations between the Æsir and the Vanir as well as broader patterns of negative reciprocity in the Old Norse corpus, see in particular pages 199-220 of Clunies Ross 1994.

¹⁷⁸ McKinnell points out that Heiðr's name "originally means 'heath'", and he argues that she is not a reincarnation of Gullveig (2001b: 413).

‘military strength’ or simply ‘lady’; the sense ‘drink’ is possible, but there is no particular reason to favour it, and *veig* never appears in the abstract sense ‘intoxication’” (McKinnell 2001b: 407).¹⁷⁹ McKinnell concludes that, if “the poem’s first audience were expected to recognise Gullveig, [...] it would probably have been as a female figure made of, wearing or possessing gold, and endowed with military strength” (2001b: 407).¹⁸⁰

3. Potential metallurgical significance of Gullveig

Several scholars have used phrases that suggest that Gullveig is somehow a symbolic personification of the process of purifying gold. So far as I can determine, this interpretation has its roots in the late nineteenth century with Karl Müllenhoff’s *Deutsche Altertumskunde* (Vol. 5). Müllenhoff’s work has been cited by several more recent scholars, but this particular metallurgical argument is difficult to track down precisely. For the most part, scholars cite Müllenhoff without page reference. I believe the passage that these scholars reference appears on page 96 of Müllenhoff’s monograph.¹⁸¹ Here, in his own characteristic prose, Müllenhoff suggests *only in passing* that Gullveig is representative of metallurgical innovation and symbolism: *auf die eigentliche bedeutung des mythus, so das etwa die götter bei dieser gelegenheit die kunst der läuterung des goldes erfunden hätten, kommt es hier gar nicht an, nur auf die natur der Gullveig und die ihr widerfahrene mishandlung* (Müllenhoff 1891: 96), “the actual meaning of the myth, that the gods invented the art of purification of gold on that occasion, is of no importance here; only Gullveig’s nature and the mistreatment she experienced.”¹⁸² Müllenhoff’s argument in this context is that Gullveig represents both the purification of a witch (*hexe*) by burning and the purification of gold by burning (1891: 96-7). To my knowledge, Müllenhoff nowhere makes any further comment or argument that Gullveig represents the discovery of the purification of gold. He seems to imply that his (or someone else’s) interpretation of this myth is as a representation of the invention of the purification of gold. However, without evidence and a fully reasoned argument this is

¹⁷⁹ It should be noted here, as I explain above, that the primary sense of *veig* elsewhere is “drink” or “liquor.” McKinnell is, thus, arguing for a rather distinct interpretation of this element in this particular context. I see no particular reason *not* to favour the interpretation “gold-drink”: we know too little about Gullveig to dismiss any valid option.

¹⁸⁰ McKinnell goes on to discuss in detail potential evidence from outside this stanza to bolster the interpretations “Gold-lady” and “Gold-military-strength”.

¹⁸¹ This 1891 publication of Volume 5 of *Deutsche Altertumskunde* is, at least in the pages dealing with Gullveig, identical to the earlier publication of the same volume in 1883, which McKinnell and Sigurður cite (McKinnell 2001b: 394, 407; Sigurður 1978: 42-3).

¹⁸² My sincere thanks go to Dr. Till Davy for his help navigating and translating Müllenhoff’s eccentric prose style.

speculative at best. Furthermore, the idea and practice of purifying a female witch by burning needs to be culturally and historically situated as something that is distinct from the practitioners of Norse *seiðr* in earlier periods. The killing of witches, particularly by burning, has a long and complex history, but this history is in many ways different for Northern Europe and Scandinavia. Since this area of study is not the primary focus of my current project, it suffices to briefly note that witch burnings in Scandinavia only appear in Christian contexts much later than the Viking Age. Earlier, malicious practitioners of *seiðr* appear to have been punished with banishment, stoning or drowning.¹⁸³ The complete lack of evidence surrounding Gullveig is a highly problematic starting point for such precise metallurgical and socio-cultural interpretations, especially considering the fact that gold ore was not extracted from the earth in early medieval Scandinavia.¹⁸⁴

Nonetheless, Müllenhoff's passing reference appears to have circulated persistently through over one hundred years of scholarship on Gullveig. Writing in the middle of the twentieth century, Rudolf Fischer suggests several spiritual, ritual purification analogies to the Gullveig stanza. As part of his argument Fischer integrates psychoanalytic theory, modern concepts of the individual, metaphors of individuated spiritual purgation, and ceremonies from Buddhist and Hindu traditions (1963: 584-6). Fischer suggests that the introduction of the three Norns in stanza 20 of *Vsp* brings to the fore the fateful nature of earthly existence. Then he makes the following interpretation of Gullveig and stanza 21: *Der Bericht über den Gold-Läuterungs-Ritus als der ersten heiligen Handlung des Menschen in der Welt folgt dann unmittelbar, geradezu als Antwort* (Fischer 1963: 592), "The account of the gold purification rite, as the first holy action of the people in the world, follows immediately, almost as an answer". This appears to be a cause-and-effect, Christianized interpretation of purification rituals before death in a text that is ostensibly pre-Christian in nature and may arguably not conform to such causal interpretations. Fischer does not point to any evidence of a traditionally Norse understanding of gold purification rituals.

More recent scholars have not ventured into Fischer's remarkably comparative territory. Nonetheless, passing comments resembling Müllenhoff's statements persist.

¹⁸³ See in particular Guðni Jónsson (1948: 143), Stephen Mitchell (1997: 17-20) and Katherine Morris (1991: 6, 17, 173-6). For interpretations that may be more appropriate to the *Poetic Edda* and motifs of burning in the Viking Age in Scandinavia, see Byock (2001: 77-9, 207-17) and Price (2002: 357).

¹⁸⁴ There is evidence to suggest that imported alloys of silver and copper were experimented with in early medieval Scandinavia (Hjärthner-Holdar *et al.* 2002: 174).

Dronke, for instance, perpetuates the inaccurate interpretation of this stanza as a witch purification: she says that, “when the Æsir try to stop Gullveig’s hostile witchery by burning her, they find she is an indestructible elixir, reborn purified – as burnt gold will be – from every killing” (1997: 41). Similarly, McKinnell interprets Gullveig as a golden idol in the form of a woman, which the Æsir burn: “One can burn an idol, but just as gold emerges refined from the fire, the cult of the goddess herself survives. Because of this, the Æsir then begin a war against the Vanir” (2001b: 413). Andy Orchard suggests that “Gullveig is sometimes held to be a personification of gold, purified through repeated smelting, or perhaps one of the Vanir ill-treated” (2002: 156-7).

A brief, but more detailed, discussion of Müllenhoff’s statement appears in Sigurður Nordal’s annotated edition of *Vǫluspá*. Sigurður attributes to Müllenhoff a connection between the phrase *þrygvar brendu*, “three times [they] burned [her]”, and the way that gold was “fired” (1978: 43). Sigurður suggests that the Old Norse terms *brennt silfr* and *brennt gull* (i.e. “burnt” or “pure” silver and gold?) operate as evidence in support of this (1978: 43). Further research is needed in order to determine what exactly is meant by “purified” or “burnt” silver and gold (cf. Cleasby-Vigfusson 1957: s.v. *gull*, *silfr*; Fritzner 1954: s.v. *gull*, *silfr*; ONP 2010: s.v. *brennt-silfr*, *gull*, *silfr*). The extant attestations show that *brennt gull* refers to a qualitative standard of purity, but it is unclear what sort of burning process or metallurgical characteristics this relates to. It is also necessary to determine how the gold alloys in use in early medieval Scandinavia would have responded to heat treatment. It has been suggested that most alloys of gold in use during this period would respond quite poorly to heat treatment (Nerman 1982: 33). Further research in this area is necessary. It remains, of course, speculative that *brennt gull* was understood in any relation to the burning of Gullveig.

It is in McKinnell’s interpretation that I see the most valid way of interpreting Gullveig as a smithing motif. McKinnell makes an attractive (and speculative) interpretation of Gullveig as a figure that is somehow similar to Freyja and Þorgerðr Hǫlgabráúðr (2001b: 408-412). He points out that Freyja is closely associated with gold, treasure and *seiðr*, “sorcery”. Similarly, Þorgerðr is associated with shrines, sorcery¹⁸⁵ and offerings of gold. According to McKinnell, Gullveig is a parallel figure to Freyja and Þorgerðr. Gullveig is associated with shrines, sorcery and the link between sacral gold artefacts (i.e. *guldgubbar*) and sacral spaces (McKinnell 2001b: 409-413). In stanza 21 it is clear that Gullveig is likely

¹⁸⁵ One of the forms of Þorgerðr’s title is *Hǫrgatröll*, “troll of the shrines” (McKinnell 2001b: 408).

inside Óðinn's hall (Sigurður Nordal 1978: 42). This is likely an aristocratic, ceremonial hall with some sort of sacral space either inside the hall or nearby. McKinnell also parenthetically observes that the use of spears to support or buttress¹⁸⁶ Gullveig is suggestive because spears are “the weapon of the rival cult of Óðinn” (2001b: 412). So, according to McKinnell's interpretation, we can speculate about stanza 21 as a representation of a ritualistic opposition between mythical figures and groups, i.e. Óðinn the spear god of the Æsir versus Gullveig the gold-figure of the Vanir.¹⁸⁷

Some of this speculation can, however, be avoided if the correlation between metals or metal objects and particular mythological figures and groups is set aside. Gullveig may have been understood as belonging to the Vanir, but we cannot know this for certain. If we set this aside, however, it is nonetheless clear that stanza 21 portrays spears (presumably of iron) surrounding if not also piercing/cutting Gullveig, who may be either made of or closely associated with the metal gold. Just as Gullveig somehow survives three burnings, it is also clear that items of gold (not iron) show resilience over long periods of time and through fire in *Völuspá*.¹⁸⁸ For example, the select Æsir who survive the apocalyptic burning of the world once again find the gold gaming pieces from *Vsp* 8 (61.2-3). The gold-thatched hall at Gimlé also appears unscathed after this universal burning (64.1-4). Gold appears to function as a remarkably unchanged archaeological find in the narrative of *Völuspá* just as it does in modern archaeological finds from early medieval Scandinavia. Unlike these golden game pieces, the presumably iron tools that the Æsir shape in 7.7-8 are not mentioned in stanza 61 after the world has been burned. Moreover, out of the nine references to iron or iron-related

¹⁸⁶ For the interpretation of *styðja* see Sigurður (1978: 42). The implication appears to be an attack (again, it is difficult to say conclusively what is meant) and it seems that Gullveig is surrounded by spears such that she is supported on all sides by them.

¹⁸⁷ In part of his work on the *Myth and religion of the North: the religion of ancient Scandinavia*, Gabriel Turville-Petre examines Óðinn's role as a ritualistic figure particularly associated with animals (1975: 56-61), runic knowledge (1975: 70-1), war-making (1975: 50-6), and the spear:

The spear was Óðinn's favourite weapon, and already the poet Egill called him 'Lord of the spear' (*geirs dróttinn*). He was owner of the spear Gungnir, which according to Snorri, was forged by dwarfs. In a verse ascribed to Bragi, Óðinn was called 'Gungnir's shaker' (*Gungnis váfaðr*). In the *Ynglinga Saga* (Ch. IX), where Óðinn is described as a mortal king of the Swedes, it is said that before he died in his bed, Óðinn had himself marked with a spear-point believing that he would go to the world of gods (*Goðheimr*). (Turville-Petre 1975: 43)

Turville-Petre also highlights the recurrent motif of “giving” or “pledging” a victim to Óðinn via the gallows or at spear-point (1975: 45-6). He is also often described as the patron and protector of legendary heroes, teaching them strategy and making them invulnerable to steel (1975: 56-61).

¹⁸⁸ While iron can “burn” if exposed to heat in certain conditions, gold also has a much lower melting point than iron and objects made of gold would not necessarily survive unchanged in a fire of sufficient temperature.

objects in *Völuspá*,¹⁸⁹ six are references to weapons¹⁹⁰ and a total of seven appear in contexts of battle, strife and general destruction.¹⁹¹ The different qualities of these two metals (how they do or do not oxidize over time in hoards and react to heat in pyres or hall-burnings) and the cultural significance of the objects they make may be part of a thematic opposition in *Völuspá*. Stanza 21 may exhibit a similar oppositional pattern between gold (Gullveig) and iron (spears).

In summary, Gullveig most literally means “gold-drink” or “gold-liquor.” Of the speculative and contextual interpretations surveyed here, McKinnell’s is the most pertinent and attractive in relation to smithing motifs: a “female figure made of gold, wearing or possessing gold” who is possibly associated with military strength (McKinnell 2001b: 407). It is possible that Gullveig was understood in relation to the significance of the metal gold in sacral spaces. It is clear that stanza 21 exhibits an opposition between iron (spears) and gold (Gullveig). This opposition may be related to how the fundamental qualities of these metals were understood as distinct: iron readily oxidizes and is used to make weapons of strife and destruction, whereas sacred objects of gold (may) survive untarnished through fire and over long periods of time. Further research is needed to determine whether or not the metallurgical processes and qualities implicit in *brennt gull* might provide pertinent information for the interpretation of Gullveig’s burning.

¹⁸⁹ 7.7-8, 21.3-4, 36.1-4, 40.1-8, 45.7-8, 50-51, 52.3, 55.7

¹⁹⁰ 21.3-4, 36.1-4, 45.7-8, 52.3, 55.7

¹⁹¹ 21.3-4, 40.1-8, 45.7-8, 50-51, 52.3, 55.7

Chapter 2: Járnvíðr and *Völuspá* 40

In this chapter I examine the significance of the mythological toponym Járnvíðr in relation to smithing motifs. First I examine the textual evidence relating to Járnvíðr. Second, I analyze the different derivatives of the name in both literary and toponymic contexts, and I evaluate previous scholarly interpretations of Járnvíðr. Third, I examine the role of bog iron deposits in toponymic and settlement concepts from Viking-age Scandinavia. I then compare this evidence with toponymic, archaeological and geological interpretations of the area around the Schlei inlet on the southern Jutland peninsula.

2.1 Textual and literary details of *Völuspá* 40

Vsp. 40 presents *in aldna*, “the old one” (feminine singular), as the name of a female creature. *In aldna* resides in a place called Járnvíðr, “Iron-wood”. Much like Gullveig in stanza 21, *in aldna* appears only in this stanza and in the quotation of this stanza in chapter 12 of *Gylfaginning* (Faulkes 2000: 14). The *Codex Regius* manuscript presents the stanza from *Völuspá* as follows:

Austr sat in aldna í Járnvíði
ok fæddi þar Fenris kindir;
verðr af þeim öllum einna nokkurr
tungls tjúgari í trolls hami (40.1-8)

In the east sat the old one in Iron-wood and gave birth to the relatives of Fenrir there; a certain one of them all in [the] shape of a troll will become destroyer of [the] heavenly body.¹⁹²

The *Hauksbók* manuscript presents only three minor variants. In the first half-line H has *byr*, the third-person present tense of *búa*, “to live, dwell, reside”,¹⁹³ while R has *sat*, the past-tense of *setja*, “to sit” (Neckel and Kuhn 1962: 9).¹⁹⁴ In the third half-line H has the verb *fæða* (“to bear or give birth to”¹⁹⁵ to raise, bring up”, “to feed, give food to”, “to give birth

¹⁹² *Tungl* translates literally as “heavenly body” and generally refers to either the moon or the sun, in many cases the moon (La Farge and Tucker 1992: s.v. *tungl*; Fritzner 1957: s.v. *tungl*; Cleasby-Vigfusson 1954: s.v. *tungl*; LP 1931: s.v. *tungl*). Sigurður and La Farge and Tucker suggest that *tungl* here refers to the sun (Sigurður 1978: 80; La Farge and Tucker: 1992: s.v. *tungl*). Hermann points out that in “*Gylfaginning* ch. 12, the destroyer of the moon is called Mánagarmr” (1996: 81). Thus Hermann suggests “moon” as a translation of *tungl* here. I choose to use the more general “heavenly body” in my translation.

¹⁹³ Fritzner 1954: s.v. *búa*; Cleasby-Vigfusson 1957: s.v. *búa*.

¹⁹⁴ Fritzner 1954: s.v. *setja*; Cleasby-Vigfusson 1957: s.v. *setja*.

¹⁹⁵ La Farge and Tucker make this specific suggestion for the meaning of *fæða* in *Vsp* 40 (1992: s.v. *fæða*). They also note other meanings of *fæða* from the *Poetic Edda*, including “to feed”, “to live on (i.e. in) too deep sorrow”, “to nurture, rear, bring up”, “to be brought up”, “to be born”, “to father, beget” (1992: s.v. *fæða*).

to”)¹⁹⁶ in the present tense (*fæðir*) while R has this verb in the past tense (*fæddi*). In the eighth half-line H has *trølls* instead of *trolls* (Neckel and Kuhn 1962: 9).

In the prose of *Gylfaginning* chapter 12 the verse from *Völuspá* 40 is paraphrased by Hár as follows: ‘*Gýgr ein býr fyrir austan Miðgarð í þeim skógi er Járnviðr heitir. Í þeim skógi byggja þær tröllkonur er Járnviðjur heita. In gamla gýgr fæðir at sonum marga jötna ok all í vargs líkjum, ok þaðan af eru komnir þessir úlfar*’ (Faulkes 2000: 14). “‘A certain giantess lives to the east of Miðgarðr in that forest which is named Járnviðr. In that forest live those troll-women which are called Járnviðjur. The ancient giantess breeds as sons many giants and all in wolf’s forms, and from that origin these wolves are descended.’” After this prose paraphrase of *Völuspá* 40, *Gylfaginning* then presents the verse in its entirety, changing the tense of the verbs in lines one and three and following the variants from H in half-lines one, three and eight:

*Austr býr in aldna
í Járnviði
ok fæðir þar
Fenris kindir.
Verðr ór þeim ǫllum
einna nokkurr
tungls tjúgari
í trølls hami.* (Faulkes 2000: 14)

In the east dwells the old one in Járnviðr and gives birth to the offspring of Fenrir there. A certain one of them all in [the] shape of a troll will become destroyer of [the] heavenly body.

Gylfaginning 12 interprets the “troll shapes” in R and H as wolf shapes. Rather than following R, the tenses of *Gylfaginning*, along with other variants, appear to correspond to H here. Ursula Dronke has suggested this shift in tense in *Gylfaginning* is intentional on Snorri’s part. Snorri, Dronke claims, “is not regularizing the tenses [...] just for regularity’s sake, he is building up a didactic scenery, *in the present*, of the world’s structure, of heaven and hell” (Dronke 1997: 69). It is unclear what evidence there is to support this attribution of intentionality to Snorri. H presents similar tense changes, and in both cases it is difficult to determine whether the scribe is regularizing tenses, or if this tense shift occurs for some other reason. Shifts in tense occur in both Old Norse prose and poetry.

¹⁹⁶ Fritzner 1954: s.v. *fæða*; Cleasby-Vigfusson 1957: s.v. *fæða*.

2.2 Smithing motifs in *Völuspá* 40

The key term of interest in the current study is Járnvíðr, a masculine, singular, dithematic toponym. The basic question about this toponym is whether or not we are justified in interpreting it as a smithing motif, association or allusion. In order to determine whether or not this is the case I will start by examining the derivatives of Járnvíðr, first in literary and then in historical contexts. I will examine the literal meaning of these names and then examine scholarly interpretations of these names. In particular, I will examine the possibility that Járnvíðr may be related to topographical concepts of bog iron resources and processing in the Migration Period and Viking Age.

2.3 The forms of Járnvíðr: literary

The first element of Járnvíðr, *járn*, is a neuter noun and sometimes appears with alternate spellings in Old Norse sources, e.g. *ísarn* or *íarn* (de Vries 1977: s.v. *járn*). *Járn* generally refers to “iron”. It can also metonymically refer to items made of iron, e.g. “weapon”, “sword”, “shackles” (La Farge and Tucker 1992: s.v. *iárn*; Fritzner 1954: *járn*; Cleasby-Vigfusson 1957: s.v. *járn*). *Viðr* is a masculine noun referring to “wood”, “forest”, “tree” (La Farge and Tucker 1992: s.v. *viðr*; Fritzner 1954: s.v. *viðr*; Cleasby-Vigfusson 1957: s.v. *viðr*).¹⁹⁷ The compound Járnvíðr may be translated literally as “Iron-wood”, “Iron-tree” or “Iron-forest.”

Járnvíðjur is an Old Norse derivative of Járnvíðr in the feminine plural. Járnvíðjur appears in the prose paraphrase of *Vsp* 40 from *Gylf* 12 (see page 164 above). In this context it is stated that ““a certain giantess lives east of Miðgarðr in a forest which is named Járnvíðr. In that forest live trollwives called Járnvíðjur.”” This implies some sort of association between the toponym Járnvíðr and the creatures that live there, which are apparently female giants or trolls known as Járnvíðjur, i.e. “Iron-wood-lings”, or “Ironwoodites” as John Lindow suggests (Lindow 2002: 205).

The feminine singular Járnvíðja (i.e. “Iron-wood-ling”) appears in *Háleygjatal* verse two.¹⁹⁸ As part of a description of the birth of Óðinn’s son Sæmingr, Eyvindr skáldaspillir

¹⁹⁷ *Viðr* can on rare occasion contextually refer to small twigs or withies of wood or metal wires (Cleasby-Vigfusson 1957: s.v. *viðr*; Finnur 1931: s.v. *viðr*).

¹⁹⁸ Russell Poole points out that *Háleygjatal* is only partly preserved and that the sequence of the extant stanzas is unclear. In his 2007 article Poole designates this excerpt as stanzas 3 and 4, following Finnur Jónsson’s organization of the stanzas in *Skj*. (1967: AI, 68, 1973: BI, 60). In his edition of this poem for the *SPSMA*, Poole

makes poetic reference to Járnvíðr as a region associated with female giants and, in this case, one giantess in particular. Þjazi's daughter Skaði, through union with Óðinn, gives birth to Sæmingr:

*Þann skjaldblætr
skattfæri gat
ása niðr
við jarnviðju;
þás þau mær
í Manheimum
skatna vinr
ok Skaði byggðu
sævar beins,
ok sunu marga
Qndurdís
við Óðni gat. (SPSMA 2001-2010: Eyv Hál 2)*

The descendant of the Æsir, shield-worshipped, begat the earl [bringer of tribute = Sæmingr?] with the giantess [denizen of Ironwood], when that couple, renowned, – the friend of men and Skaði – dwelt in Jötunheimar [the home of the maid / of the stone < ‘bone of the sea’]; and Skaði [the lady of the ski] had many sons with Óðinn. (Poole 2007: 162 with modifications)

Eyvindr is a tenth-century skald. This verse appears in three manuscripts of *Heimskringla*, one dating from the early fourteenth century and two from the seventeenth and eighteenth centuries. All these manuscripts are transcripts of lost medieval vellums. Substantive variants are noted by Russell Poole (2007: 161 n.37, 166).

In *Skáldskaparmál*, Járnvíðja, in the feminine singular, is also included as a name for a troll-wife in the fourth stanza of the anonymous *Pulur* or list of names for *Trollkvenna*, “Troll-wives” or “Troll-women.” This list not only contains the name Járnvíðja, but also several other names for female trolls that may be suggestive of smithing activities or associations:

*Qflugbarða
ok Járnglumra,
Ímgerðr, Áma
ok Járnvíðja,
Margerðr, Atla,
Eisurfála,
Leikn, Munnharpa*

revises this and designates this entire excerpt as stanza 2. I follow the numbering of the SPSMA edition and emend Poole's earlier translation according to his more recent work.

ok Munnriða. (Faulkes 1998a: 112)

As I have noted, the two elements of Germanic dithematic names do not usually refer to one another. Several of these names for troll women are an exception to this rule. Motz suggests (and I agree) that several names for giantesses (i.e. troll women) are true compounds, meaning that “the parts of a name seem to be in definition of one another” (1981: 498).¹⁹⁹ This is certainly the case with toponyms like Járnvíðr, and it is also the case in poetic circumlocutions or kennings. The interpretation of these names is somewhat speculative, particularly if attempts are made to explain a connection between female trolls and Járnvíðr. In the “Excursus” that follows the conclusion to this chapter I suggest some possibilities for how the names in *Trollkvenna* stanza 4 might be interpreted in relation to general metalworking motifs.

2.4 The forms of Járnvíðr: toponymic and other parallels

Several scholars have noted that Járnvíðr appears to be related to a pair of toponyms from the Schleswig-Holstein region of what is now Northern Germany. Járnvíðr appears to be cognate with the toponym Jarnwith. Additionally, the first element (*járn-*) of the toponyms Járnvíðr and Jarnwith also appears to be cognate with the first two syllables of the toponym Isarnho, which also appears in the Schleswig-Holstein region (Cleasby-Vigfusson 1957: s.v. *járn*; de Vries 1977: s.v. *Járnvíðr*; Müllenhoff 1891: 122). Moreover, both Jarnwith and Isarnho may be equivalent in meaning to Járnvíðr (“Iron-wood”)²⁰⁰ and these toponyms have a long history in the Schleswig-Holstein region. Tracing this history and the history of other toponyms in this area is, however, difficult. This area has been contested between Denmark and Germany for many centuries. After 1864 the area became part of Germany, but some old “Danish” toponyms persist in the region of southern Jutland. During the medieval period, this region on the southern Jutland peninsula was also a frequently contested borderland occupied by a diverse group of peoples, including the Frisians, Saxons, Danes, Angles, Franks, Swedes and Slavs (Crumlin-Pedersen 1997: 32-42).²⁰¹ Because of this diverse background of different languages and territorial interactions, many of the toponyms in the area have changed or been lost (Brink 1999: 425). Jarnwith and Isarnho have only barely survived, and

¹⁹⁹ See also Clunies Ross for a discussion of the role of poetic names, categories and *heiti* more generally in Old Norse poetic traditions that may date as early as the eleventh century (Clunies Ross 1987: 81-2).

²⁰⁰ I examine the semantic meaning of these and related toponyms in detail below.

²⁰¹ For a succinct summary of the role that the Schleswig-Holstein wars of 1848-51 and 1864 had in the history of Anglo-Saxon scholarship, see Michael Kightley’s dissertation on *Racial Anglo-Saxonisms* (2009: 14-5).

it is difficult to place them in a precise historical and topographical context.

In his citation on the etymology of Járnvíðr, de Vries points out that both Jarnwith and Isarnho refer to a forested border region between the Schlei and the Trave in what is now Northern Germany (1977: s.v. *Járnvíðr*; cf. Udolph 1984: 506-7).²⁰² The Schlei is an inlet of the Baltic Sea that extends more than thirty kilometres inland, terminating near the Viking-age complex at Hedeby in the southern region of the Jutland peninsula, i.e. the region of Schleswig-Holstein in modern-day Germany just south of Flensburg. The Trave is a navigable river some 120km long located about 100km southeast of the Schlei inlet and Hedeby. This is a large area, and it may or may not be coincidental that it corresponds roughly to the *Limes Saxoniae*: the *Limes Saxoniae* was in part established along impassable topographic features, including rivers, tracts of swampland and dense woodlands (Goetz 2001: 80; Hardt 2001a: 224-6; Hardt 2001b: 442-5; Udolph 1984: 506-7; Wolfram 2001: 239).²⁰³ Some of the dense woodlands that came to be associated with the *Limes Saxoniae* may correspond to this tract of dense forest that de Vries identifies as Jarnwith and Isarnho (Crumlin-Pedersen 1997: 34; Degn 1994: 24, 154).

de Vries suggests that Járnvíðr is closely related to a group of toponyms that appear to have equivalent meanings, i.e. Old Germanic *Eisenwald*, Old Danish *Jarnwith* and Old Saxon *Isarnho* (1977: s.v. *Járnvíðr*). The *Nordisk tidsskrift for oldkyndighed* corroborates that this forest was called *Isarnho* in Old Saxon and *Jarnwith* in Old Danish (1832: 272). During the tenth century, the toponym *Jernwith* referred to a political and administrative district immediately south of Eckernförde (Degn and Muuß 1966: 42). The southern boundary of *Jernwith* corresponded to the most northern boundary of the *Isarnho* district. In turn, the *Isarnho* district extended to the south, encompassing Kiel and following the western side of the *Limes Saxoniae* (Degn and Muuß 1966: 42).²⁰⁴ The toponym *Jarnwith* has also been

²⁰² “Name eines grenzwaldes, eig. ‘eisenwald’; adä Jarnwith ‘wald zwischen der Schlei und der Trave’, vgl. d. *Isarnho* (Müllenhoff DA 5, 122)” (de Vries 1977: s.v. *Járnvíðr*). de Vries cites Müllenhoff’s *Deutsche Altertumskunde* (Vol. 5).

²⁰³ It is also worth noting here that “Denmark (Danmark) contains the word *mark* ‘dividing forest’ and the name of the people *Danir*. Traditionally the name is understood as a *pars-pro-toto* name, originally denoting the forest that divided the people from the Saxons in southern Schleswig. The meaning of the name of the inhabitants, *Danir*, is obscure and still much debated” (Brink 2008: 60).

²⁰⁴ Adam of Bremen describes this area in some detail and the geographical boundaries that separated the various groups and regions: *Hanc autem Daniam a nostris Nordalbingis flumen Egdore dirimit, quod oritur in profundissimo saltu paganorum Isarnho, quem dicunt extendi seens mare barbarum usque ad Sliam lacum* (Adam 1876: 153), “Now, this Danish land is separated from our Nordalbingians by the river Eider, which rises

documented as referring to a thirteenth-century political and administrative region that corresponds to the Danish Wohld, a toponym that survives into modern times, e.g. German *Dänischer Wohld* (Degn 1994: 154; Heydermann and Müller-Karch 1980: 2). The history of the toponyms Jarnwith and Isarnho in the region immediately south of Eckernförde, as it is identified by de Vries, appears to go back to the Viking Age.

The form and meaning of the modern Jarnwith and the tenth-century *Jernwith* are clearly parallel to Járniðr. These toponyms translate roughly as “Iron-wood.” The Old Saxon *Isarnho* uses a variant spelling of *járn*. This variation is one of several different but widely testified usages and it still clearly refers to “iron” (de Vries 1977: s.v. *járn*). The terminal *-ho* of *Isarnho* is, however, not cognate with the Old Norse *viðr*. It is perhaps possible that *-ho* is the result of attrition from the Old Norse *holt* or *holz*, “forest”, but this would be a drastic change. I have not found any commentary upon this difficulty in the scholarship on these particular toponyms. The terminal *-ho* element in *Isarnho* may be cognate with Old Norse *haugr*, Old Swedish *hög*, Old Danish *høi* and *hoe*, meaning “hill” or “burial mound” (Fritzner 1954: s.v. *haugr*; de Vries 1977: s.v. *haugr*). If this is the case, the Old Saxon toponym *Isarnho* would not have a basis in the same semantic elements as the Old Danish *Jarnwith* or the mythological Old Norse toponym Járniðr, “Iron-wood”. Rather, *Isarnho* would in this case mean “Iron-burial-mound” or “Iron-hill.” Since the two types of toponyms (i.e. both *Jarnwith* and *Isarnho*) do appear to be associated with slightly different political boundaries, it is possible they were originally two separate but related toponyms, or that one root form of these now distinct toponyms underwent a change due to a politico-linguistic barrier in this area.

The toponym Itzehoe, about sixty kilometres south-southwest of the Danish Wohld, exhibits a similar final syllable to *Isarnho*. Dieter Berger traces Itzehoe back to documents from the early ninth century with three different historical spellings, *Idzehoe*, *Ezeho*, *Ekeho* (1993: 145). Berger claims that the name itself cannot be clearly explained. The first element (*Itze-*, *Idze-*, *Eze-*, *Eke-*) appears to come from the root form for German *eiche*, Old Norse *eik*, “oak” (Berger 1993: 145). The second element, *-ho*, would once again appear to most closely resemble Old Norse *haugr*, “hill” or “burial mound”, and its various spellings, particularly Old Danish *høi* and *hoe*. The Germanengrab burial mound (also known as the

in the densely wooded highland of the pagans, called Isarnho, which, they say, extends along the Barbarian Ocean as far as the Schlei Sea” (Adam 1959: 186).

Galgenberg burial) is located in Itzehoe and dates to the Bronze Age (1500-1300 BC) (Haseloff 1938: 58-62; Müller 2010: 19-20). Without explanation, however, Berger identifies this second syllable as somehow referring either to a forest or a promontory of land by a river (1993: 45). The latter suggestion may relate to the Anglo-Saxon *hóh*, which usually means “heel” but has been documented in toponyms referring to “a point of land, formed like a heel, or boot, and stretching into the plain, perhaps even into the sea”, i.e. “a promontory” (Kemble qtd. in Bosworth-Toller 1954: s.v. *hóh*; Toller 1955: s.v. *hóh*; Campbell 1972: s.v. *hóh*). Itzehoe was, until the nineteenth century, based on a sheltered island formed by a pronounced oxbow of the Stör river with projections of land on either side of the island (Degn 1994: 158). This location is appropriate to the interpretation “oak-promontory” or “promontory with/beside oak forest”. North of Itzehoe is the *Itzehoer Klosterforst*, “Itzehoe Monastery Forest” (ADAC Verlag 2004: 339; Militärgeographisches Amt 1963: L 2122). Particular regions at the edge of this forest are referred to as *-hölz*, “forest”, e.g. *Klosterhölz*, *Lübuscheshölz* and *Vorderhölz* (ADAC Verlag 2004: 339; Militärgeographisches Amt 1963: L 2122). It is perhaps possible that *holz* or *holt* underwent attrition to form *ho* and *hoe*, but it would seem unusual (though not impossible) to have contemporary toponyms in the immediate area that retain the complete *holz* form. It is preferable to interpret *-ho* as referring to a point of land associated with a forest, i.e. *eiche*, “oak.” The root *haugr* is also plausible and testified in other toponyms, and it is entirely possible that toponyms ending in *-holz* would be located alongside toponyms ending in *-ho* or *-haugr*. Regardless of such difficulties, there appears to be a close relation semantically, topographically and historically between the two toponyms Jarnwith and Isarnho, even if the second element of Isarnho does not refer to a forest.

The terminal element *-ho* appears in another toponym from the Schleswig-Holstein region. Jerrishoe is located about forty to sixty kilometres northwest of the area associated with the Danish Wohld and the toponyms Jarnwith and Isarnho (Degn and Muuß 1966: 211). Jerrishoe may appear to be a distinct toponym from Jarwith, Isarnho and Járniðr, but Wilhelm Clausen suggests that the three syllables of Jer-ris-hoe correspond to the Old Norse words *járn-hrís-haugr*, “Iron-wood-mound” (1980: 374).

Clausen presents the history of documented spellings for the Jerrishoe toponym as

follows: *Ernohög* (1196), *Jerisho* (1483), *Jernshøj*²⁰⁵ (1499), *Jürgeshøj* and *Jirrigshøj* (1652), *Jyrrifshoi* and *Jyrrishoe* (1688), *Jörrichshoe* and *Erichshoe* (1794) (Clausen 1980: 374). The first of these attestations is from a document dated 21 March 1196 in which King Canute VI confirms his ownership of the monastery at Guldholm on Langsee lake, about ten kilometres north of Schleswig (Clausen 1980: 375). This declaration also includes an estate named *Ernohög*. Next, a Schleswig taxation account from 1483 mentions property in *Jerisho* that was sold to the Archdeacon of the church in Schleswig (Clausen 1980: 375). Finally, another Schleswig taxation account from 1499 mentions individuals with royal connections residing in *Jernshøj* (Clausen 1980: 375). These accounts, as well as the later accounts which I will not examine in detail here, clarify that the history of the toponyms *Ernohög-Jerisho-Jernshøj* is localized to the north of Schleswig and to the south of Flensburg in the centre of the Angeln region.²⁰⁶ There are, however, several challenges to identifying the historical location and literal meaning of these toponyms. The meaning of *Ernohög-Jernshøj-Jerisho*, as Clausen acknowledges, cannot be determined for certain (1980: 374). It is also uncertain whether all these toponyms pertain to the same location. *Ernohög* appears to be a different word than *Jerisho*. Furthermore, *Ernohög* also appears to be mentioned in close relation to the area around Langsee, which is about ten kilometers east of the area associated with modern-day Jerrishoe. I will now discuss the interpretation of each element of Jerrishoe, *Ernohög* and the related toponyms.

It has been suggested that the toponym Jerrishoe originates with an estate owned by someone named Erich or Jürgen (Clausen 1980: 374). Two of the later attestations (*Jürgeshøj* from 1652 and *Erichshoe* from 1794) support this interpretation. Brink points out that “the man’s name *Erik* [...] seldom seems to be found in prehistoric place-names (Brink 1999: 431). The possibility cannot be entirely ruled out that the toponym may, in some period, have been associated with an individual’s proper name. At the same time, however, the general history of the name before and after the seventeenth and eighteenth centuries suggests a different set of associations than those that might originate with an individual’s proper name. Furthermore, the appearance of several other toponyms in the area that closely correspond to Jerrishoe reinforce that this toponym is part of a larger pattern of

²⁰⁵ Clausen’s document presents the toponyms dating from 1499 through to 1688 with this velar nasal IPA symbol, and I reproduce according to Clausen.

²⁰⁶ Sometimes referred to as Anglia, the modern district of Angeln encompasses Flensburg, Schleswig and Eckernförde.

geographical/topographical associations, one that is not likely restricted to the ownership of just one estate. Clausen points out, for instance, that the toponym Jerrishoe is associated with another toponym some distance away from Jerrishoe but still within this defined area northwest of Schleswig. The first two syllables, *Jerris-*, of the modern toponym Jerrishoe correspond to the toponym Jerrisbek which is the name of a creek that runs through this area, originating from smaller tributaries in the north, both east and west of Jerrishoe, and running south into the Treene near Jerrisbek village (ADAC Verlag 2000: 21; Degn and Muuß 1966: 211; Militärgeographisches Amt 1963: L 1320, L 1520).²⁰⁷ These locations and features are close to the western bank of the Treene river, which runs roughly north-northeast to south-southwest through this area, ultimately flowing into the Eider much farther southwest.

Following the Treene north from Jerrisbek to Jerrishoe, the villages of Eggebek and Keelbek are also situated very close to the Treene and within ten kilometres of Jerrishoe and Jerrisbek (ADAC Verlag 2000: 21; Militärgeographisches Amt 1963: L 1322). The suffix *-bek* likely comes from the Old Norse *bekkr*, a masculine noun that refers to a “brook” or “bank [of a river]” (de Vries 1977: s.v. *bekkr*).²⁰⁸ *Bekkr* may have referred to the Jerrisbek creek, the Treene river, the banks of either of these waterways, the lowland bogs in the area, or to all of the above.

While Berger does not comment upon the history of Eggebek, he does suggest that the first syllable of the toponym Eggenfelden originates in a personal name, *Eto* or *Etto* (1993: 86). Alternatively, the first syllable of Eggebek may be associated with the Old Norse feminine noun *egg*, “edge” (Fritzner 1954: s.v. *egg*; Cleasby-Vigfusson 1957: s.v. *egg*). *Egg* predominantly refers to the cutting edges of axes and swords (*ONP* 2010: s.v. *egg sb. f.* 1), or more generally to the axes and swords themselves (*ONP* 2010: s.v. *egg sb. f.* 2). Several usages, however, apply to topographical features (*ONP* 2010: s.v. *egg sb. f.* 4). On its own,

²⁰⁷ A municipality named Jersbek is located some one hundred and forty kilometres south-southeast of Jerrishoe, just north of Ahrensburg (ADAC Verlag 2000: 64; Militärgeographisches Amt 1963: L 2326). I have not been able to access historical studies of this village directly, but I have learned indirectly from their municipality website that the village was called *Yrekesbeke* in Latin documents dating from 1310 (*Die Geschichte der Gemeinde Jersbek* 2010: n.p.). This early fourteenth-century form of the toponym seems to suggest some association between an estate and the proper name of its owner, i.e. *Erik*, rather than an association with *Járn*. The municipal history, however, also includes reference to a small village named *Felsenschmiede*, which may translate roughly as “rock” or “cliff” and “smith” or “forge.”

²⁰⁸ *Bekkr* also has early Indo-European roots, with a form from Old Slavonic referring to a “bog” (de Vries 1977: s.v. *bekkr*). The Old Slavonic meaning may have been pertinent in the Schleswig area during the Migration Period and Viking Age: Slavs were one of the many groups inhabiting this region (Crumlin-Pedersen 1997: 32-42; Roesdahl 2008: 652).

egg may be used to refer to a cliff-top or mountain ridge, whereas a compound like *fjallsegg* refers to the ridge of a mountain (Cleasby-Vigfusson 1974: s.v. *fjallsegg*). There are no prominent mountain ranges on the southern Jutland peninsula. As will be discussed shortly, however, this region near Jerrishoe corresponds to a transitional zone in the topography of southern Jutland. Jerrishoe, Jerrisbek, Keelbek and Eggebek are all located in the transition between the eastern landscape of hills and the central and western formation of slightly raised plains (known as Geest) (Heydermann and Müller-Karch: 1980: 2). This transitional zone also happens to correspond to the major north-south trading route (now a major highway, but historically known as the “Army Road”) in the region (Wiechmann 2007: 29), which has been active since the medieval period (Degn 1994: 81, 89). Thus, Eggebek may refer to some sort of topographical boundary zone in association with the body of water or bog indicated by *-bek*, e.g. “brook [at the] edge”.

The toponyms Jerrisbek, Eggebek and Keelbek²⁰⁹ thus have a history going back to the Viking Age with associations to the river Treene and related tributaries and wetlands. Eggebek may also exhibit associations to other topographical features in this specific area. Jerrishoe appears to be part of this larger network of topographical associations. In contrast to these toponymic associations, Janneby, i.e. “Johanne’s residence”, is just west of Jerrishoe and does not exhibit any other toponyms in association with such a broad region: there is no Jannebek, despite the fact that Janneby is located just as close to the estuaries associated with the names Jerrisbek, Eggebek and Keelbek.

According to Clausen’s hypothesis the first element of *Ernohög-Jernsho-Jerishon* (i.e. *ern-*, *jern-*, *jer-*), corresponds to the Old Norse neuter noun *járn*, “iron.” There is one problem with this interpretation. The terminal *-n* appears at the end of *járn* in the multiple attested spellings for *járn* in Old Norse compounds (Fritzner 1954: s.v. *járn*). This terminal *-n* also appears in many cognate forms of the word *járn* in other languages, both medieval and modern (*eisen*, *éarn*, *íarn*, *ísarn*, *ísern*, *järn*, *jern*, *íren*, *írsen*, *ísan*, *eisarn*) (de Vries 1977: s.v. *ísarn*, *járn*). If the root of the first syllable of *Jerisho* is indeed a form of the word

²⁰⁹ Determining the origins of the first syllable of Keelbek is more difficult. The first syllable may correspond to the same root as Kiel, a harbour town south of Eckernförde. Berger suggests that *Kiel* comes from a root form referring to the inner, narrow tapered end of a fjord (1993: 150-1). While Kiel is located immediately on a harbour and inlet, Keelbek is not. The first syllable, *keel-*, could be a form of the Old Norse *keila*, a feminine noun referring to a fish (Fritzner 1954: s.v. *keila*). Alternatively, *keel-* could originate with the root of the Old Norse noun *kjóll*, referring to a “long ship”, or *kjǫlr*, “keel” (La Farge and Tucker 1992: s.v. *kióll*; de Vries 1977: s.v. *kjǫlr*). The *OED* suggests that *kjóll* should not be confused with the Old Norse *kjǫlr*, meaning “keel” (*OED* s.v. *keel*, *n*²). The two words were originally distinct but have been combined since the sixteenth century.

járn, then it is necessary to explain how or why the terminal *-n* is dropped in the majority of the later attestations for the toponym Jerrishoe. Only the first attestation, *Ernohög*, and the third, *Jernshøj*, retain the terminal *-n*.

The majority of the documented forms of Jerrishoe (which comes from *járn-hrís-haugr* according to Clausen) exhibit an elision of the /h/ in /R̥hR/, that is, between *járn* and *hrís*. This results in the later forms like *Jerisho* and the modern Jerrishoe. If we consider the difficulty of enunciating the hypothetical original form *járn-hrís-haugr*, it is likely that some compression would have occurred over the history of this toponym. It makes sense that compression would occur between the /R/ of *járn* and the /hR/ of *hrís*, resulting in the elision of the terminal /n/ from *járn*. Similar sound combinations appear in compounds like *járnhringr* (Fritzner 1954: s.v. *jarnhringr*) or *Járnhrygg* (Cleasby-Vigfusson 1957: s.v. *járn*). For example, as Fritzner illustrates, *járnhringr* has simplified to *jernring* in Modern Danish (Fritzner 1954: s.v. *jarnhringr*). Moreover, the first syllable of the modern Norwegian toponym Jarfjorden, in southern Varanger, has been compressed from *jarn*: *Jarnfjorden* (Sandnes and Stemshaug 1980: s.v. *Jarfjorden*). Similarly, in England, *iren* was reduced to *ire* and *yre* in southern dialects of early Middle English, while in northern dialects *iren* was compressed into *irn*, *yrn* (OED s.v. *iron*, n.¹). Although there is no space here for a comparative analysis of dialectical shifts in southern England and southern Jutland, it is significant that these changes in southern England are roughly contemporary and parallel to the changes illustrated by the extant attestations *Ernohög-Jernshøj-Jerisho* from 1196 to 1499. The shifts in southern Middle English dialects testify that in some contexts the /n/ component was dropped from *járn/ísarn/iren/isen*. Furthermore, Henning Kaufmann notes that some older forms of the Modern German *eisen* survive without the /n/ in modern toponyms along the Rhine, particularly *Eisholz* or *Ißholz* near Leverkusen (1965: 96). These toponyms also appear to mean “Iron-wood.” This evidence and logic is not conclusive in the evaluation of Clausen’s hypothesis. It is possible that the first syllable of Jerrishoe does not represent ON *járn*, “iron.” However, the evidence also clearly illustrates that a hypothetical original form of the toponym *Járn-hrís-haugr* could have compressed into Jerrishoe.

Clausen suggests that the second syllable of Jerrishoe is the word *ríss*, “bush” (Clausen 1980: 375). This corresponds to the Old Norse *hrís*, a neuter noun referring to “shrubs”, “bushes”, “forest” (de Vries 1977: s.v. *hrís*). This element may also be preserved in

another nearby toponym. Görrisau appears in the immediate area of Jerrishoe, about eight kilometres due south of Jerrishoe (ADAC Verlag 2000: 21; Militärgeographisches Amt 1963: L 1522). The second syllable of Görrisau appears to preserve the same *hrís* element as Jerrishoe. The first syllable of Görrisau is borrowed from Western Slavic *zgorēti*, “roast” (Berger 1993: 114). The last syllable of Görrisau, *-au*, is a suffix that appears in other modern German toponyms. It refers to areas close to bodies of water or rivers (Berger 1993: 42). It also shares a common root with the Old Norse *á*, “river” (de Vries 1977: s.v. *á* 1 f.). The toponym Görrisau corresponds to a river that flows from the east, entering into the Treene just south of where Jerrishoe enters the Treene (ADAC Verlag 2000: 21; Militärgeographisches Amt 1963: L 1522). Hence, *Gör-ris-au*, “Roast-forest-river.” If the second element of these two toponyms may be interpreted as sharing a root with the Old Norse *hrís*, then it supports Clausen’s interpretation of these toponyms being related to prominent geographic features (brooks, forests, mounds) in the area rather than the proper names of estate owners.

The immediate problem with this suggestion is that the first attestation for Jerrishoe, *Ernohög*, has *o* as the second syllable, and it seems impossible to confuse this syllable with any form even remotely related to *hrís*. Clausen offers no explanation for this, nor does he note it as a problem. One possible explanation is that the 1196 attestation *Ernohög* is a mis-transcription from dictation or the result of some other error in transmission, or perhaps even a mistake due to unfamiliarity with the toponyms. I cannot, however, think of any hypothetical forms that could lead to such a mistake, and the vowel-shift from /i/ to /o/ also does not conform to a logical pattern here. This may, nonetheless, be a mistake.

It should also be pointed out that *Ernohög* may refer to another locality, distinct from Jerrishoe. The statement confirming Canute’s ownership focuses upon the parish at Guldholm by Langsee. The information we have on parish boundaries from the fourteenth century suggests that Guldholm was a distinct parish from the region associated with *Jerisho* (Degn 1994: 137). Information from the eleventh century, however, identifies Guldholm and Flensburg as the closest monasteries to the Jerrishoe region (Degn 1994: 136). It is not impossible that the region of Jerrishoe to the northwest would be a part of the landclaim associated with Guldholm, but perhaps a more proximal site is being referred to.

Finally, Clausen notes the various historically documented spellings of the final syllable of Jerrishoe: *-hn*, *-hoŋ*, *ho*, *hoe*, *hoi*, *hun* and *-hög* (1980: 374). As I have already

reviewed in some detail, these can all clearly be associated with the word for a hill or burial mound, in Old Norse *haugr*, Old Swedish *hög*, Old Danish *høi* and *hoe* (de Vries 1977: s.v. *haugr*). Clausen suggests that *die letzte Silbe [...] bezeichnet unzweifelhaft ein Hünengrab, von denen auf der Feldmark mehrere vorhanden gewesen sind* (1980: 374), “the last syllable [...] undoubtedly means a chamber-grave, several of which were present in the Feldmark.” This is an attractive interpretation. Several burial mounds are located on the peninsula just south of Eckernförde, in the Danish Wohld (ADAC Verlag 2000: 33). Estimates suggest that on the Jutland peninsula and throughout Denmark and northern Germany about twenty thousand megalithic tombs were built in the middle of the fourth millennium BC (Milisauskas and Kruk 2002: 226-7; Hansen 1997: 179). Younger mounds (1700-1000 BC) also appear in the area of Jerrishoe, such as the famous burial of the Skydstrup woman near Flensburg (Breuning-Madsen *et al.* 2000: 2). As many as 600 burial mounds may have existed in the Angeln district alone (Heldt 1998: 11). Burials of similar age (1700-1000 BC) also appear as far south as Bornhöved, near Neumünster (Dreibrodt *et al.* 2009: 487). It should also be noted that *-ho* may share an origin with the Anglo-Saxon *hóh*, in the sense of “a point of land”, “a promontory” (Bosworth and Toller 1954: s.v. *hóh*; Toller 1955: s.v. *hóh*; Campbell 1972: s.v. *hóh*). There are many elevation changes in this area, some quite pronounced, and there are many tributaries (Militärgeographisches Amt 1963: L 1120, 1122, 1320, 1322, 1324, 1522, 1524, 1724). Although several scholars suggest that *-ho* means “forest”, I have found no valid explanation of this and I suggest that the explanations outlined above are preferable.

In review, although it is difficult to conclusively determine what *Ernohög*, *Jerisho*, *Jernshøj* and the modern toponym Jerrishoe may have meant, the translation “Iron-forest-mound” is a defensible interpretation of most of the extant attestations. The earliest attestation, *Ernohög*, appears to retain the *járn*, “iron”, and *haugr*, “mound”, components, but the middle *o* component is difficult to explain. Despite these and the other difficulties cited above, the toponym *Jerisho*-Jerrishoe exhibits strong associations with particular topological features, especially raised hills or large burial features and forests or shrubs. The first syllable of Jerrishoe may or may not preserve the element *járn* that appears in Jarnwith, Isarnho and Járniðr. Related toponyms in the area also suggest a network of topographical associations, including hills, escarpments or other topographical transitions. *Jerisho*-Jerrishoe appears to have been a part of this network. To the southeast, in the Danish Wohld region, Jarnwith and

Isarnho also appear to correspond to a similar morphological and semantic pattern of associations between “iron” and “wood” or “iron” and “mound.” The mythological toponym Járniðr, “Iron-wood”, conforms to this pattern of associations as well.

2.5 Scholarly interpretations and definitions of Járniðr

Many scholars have presented interpretations of Járniðr. Fritzner (1954) and La Farge and Tucker (1992) do not offer definitions for the toponym Járniðr. Several other scholars do, however, offer definitions for Járniðr, and these range from extremely literal to historically and culturally specific (cf. Udolph 1984: 506-8). Cleasby-Vigfusson suggests the name Járniðr refers to a particular type of forest, a “mythical wood with iron leaves” that is “peopled by *ogresses*” that are, as the inhabitants of that location, called Járniðjur (Cleasby-Vigfusson 1957: s.v. *járn*; cf. *LP* 1931: s.v. *járniðja*, *Járniðr*). Citing the *Nordisk tidsskrift for Oldkyndighed* (1832: 272), Cleasby-Vigfusson also identifies Járniðr as cognate with the local name for a wood in Holstein, near modern day Hamburg: the German *Isarnhow* or, in Danish, *Jarnwith* (Cleasby-Vigfusson 1957: s.v. *járn*). Unusual though it may seem to consider a forest that literally has iron leaves, the mythology contains other features that can seem equally unusual. This explanation cannot necessarily be ruled out simply because it seems unusual. This is, however, an extremely literal interpretation of a mythic text. Cleasby-Vigfusson presents no other evidence of a “mythical wood with iron leaves” in the Norse tradition.

LP interprets Járniðr as a toponym that refers to *store, tætte og mørke skove*, “large, dense and dark forests” (1931: s.v. *Járniðr*; cf. Udolph 1984: 506-7). This suggestion is unusual in that it seems to implicitly construe *járn* in this dithematic name as referring to dark (*járn* = black or grey?) and impenetrable qualities. Relative to Cleasby-Vigfusson’s suggestion, *LP* seems appealing in that it is not so extremely literal. Large forests are often darker than, for instance, open heaths, and forests can contain dense foliage or underbrush. There is also evidence to suggest that there was a dense tract of forest in the *Jarnwith-Isarnho* region during the Viking Age (Degn 1994: 24, 154; de Vries 1977: s.v. *Járniðr*). The interpretation in *LP* may perhaps be valid contextually but it is vague in its reference to the meaning of the individual components of Járniðr. *LP* does not cite any instances in which *járn*, either on its own or in a compound word, denotes or connotes darkness, density

or largeness. I have not been able to find any such examples in Fritzner, Cleasby-Vigfusson or La Farge and Tucker.

Two recent interpretations offer a more concrete and specific explanation for *Járnviðr*. Terje Gansum interprets *Járnviðr* as suggesting a “close connection between the production of iron [i.e. smelting] and wood [i.e. as a fuel resource] in the mythology as well as technology” (2004: 46). Similarly, Russell Poole suggests that *Járnviðr* means a “forest [with resources of] iron”, i.e. a forest within or near which iron ore or bog iron is present:

Vsp 40 represents *Járnviðr* as a forest in the east where a trollwoman gives birth to wolves; in *Gylf* ch. 12 the forest is described as lying east of *Miðgarðr* and as inhabited by trollwomen (Simek 1993, 179). Possibly signified by this distinctive name is a forest where native iron ore occurred. Bog iron, the staple source of ore in the Viking Age, is typically found in localities where streams rise in mountains (cf. the notion of *Skaði* as residing in the mountains) and run through a nearby peat bog. According to *Egils saga* (ch. 30), *Skallagrímur Kveldúlfsson* set up his smithy by the bog at *Rauðanes*, *rauði* meaning ‘(bog) iron’. (Poole 2010: pers. comm.)²¹⁰

Any bog iron deposits and iron ore deposits that oxidize in the atmosphere are readily identifiable by reddish brown pigments (Breuning-Madsen *et al.* 2000: 3) and/or iridescent oily films on the surface of the water, which are called *jarnbrák* in Icelandic (Short 1996-2010: n.p.). Iron ore could also be extracted from the earth or sand, through a similar process to bog iron extraction. In all these cases, regardless of how the ore was initially found, the iron ore had to be roasted and powdered before it could be smelted (Perkins 1969: 94; Evenstad 1790 [2010]: n.p.).²¹¹ Both before and after this roasting, the ore is identifiable by its red or reddish-brown pigmentation. Hence the term *rauði* that Poole mentions, referring to “red earth”, i.e. *haematite* and/or other forms of iron oxide accumulations (Cleasby-Vigfusson 1957: s.v. *rauði*).²¹²

²¹⁰ Poole’s comment here comes from an email exchange in March 2010 and may be included as a note to *Hálegjatal* in a forthcoming edition from *SPSMA*. See also Udolph’s note, in which he also suggests a possible connection to prehistoric bog iron ore processing (1984: 506-8).

²¹¹ Ole Evenstad’s late eighteenth-century manuscript is one of the best sources of information on this method of processing bog iron. Espelund discusses it in some detail but he does not cite it extensively (1997: 47-58). As part of her work on the L’Anse-aux-Meadows site, Birgitta Wallace has translated several key passages of Evenstad’s work. These translations are available online through the *Canadian Mysteries* website, a joint project through Canadian Heritage and the University of Victoria:

<http://www.canadianmysteries.ca/sites/vinland/lanseauxmeadows/ironworking/4248en.html>

²¹² R.F. Tylecote and R.E. Clough have studied the composition of Scandinavian bog iron finds and published analyses of the smelting of bog iron (1983: 115-18).

2.6 *Rauði*, “bog iron”: toponymic patterns and settlement contexts

The inclusion of *rauði* in settlement contexts introduces another level of toponymic and socio-historical considerations to the analysis of Járnvíðr. Could Járnvíðr somehow be related to bog iron deposits or toponymic patterns associated with iron ore and smelting activities? Poole notes that the toponym Rauðanes exhibits a conceptual link between *rauði*, “bog iron” (Fritzner 1954: s.v. *rauði*; Cleasby-Vigfusson 1957: s.v. *rauði*), and *nes*, “a ness”, i.e. a projection of land into the sea (Cleasby-Vigfusson 1957: s.v. *nes*). Rauðanes means “Ness [with resources of] bog iron.” The literary and historical evidence for this concept of bog iron resources in relation to Rauðanes demands further investigation before any parallel examination of Járnvíðr is broached.

The history of Rauðanes exhibits several different representations of a specific concept of cultural geography, i.e. the associative link between geographical features and iron ore resources in settlement patterns. Although the toponym includes no element that makes reference to a woodland or forest, in the context of *Egils saga* it clearly exhibits a cultural history of conceptually linking a particular geographical feature (a ness) with convenient access to two natural resources, bog iron and wood for fuel.

Before quoting the complete passage from chapter 30 of *Egils saga* it is necessary to explain that in the *Möðruvallabók* manuscript (AM 132 fol.) for *Egils saga*, Rauðanes actually appears as Raufarnes (ÍF 2 1988: 78). For some time now Raufarnes has been thought to be a misspelling of the toponym Rauðanes, which refers to a headland southwest of Borg in Iceland (Finnur 1894: 93 n.17; Geodætisk Institut 1947: *Aðalkort blað 2. Miðvesturland*). From 1908, the *Árbók hins íslenska fornleifafélags* presents the following explanation behind the toponymic history of this headland:

Nafn nessins og bæjarins hafa sumir haft: Raufarnes. En Rauðanes er vissulega hið rétta. Í sjávarhömrum blasir þar hvervetna við lag af rauðleitri bergtegund undir blágrýtislagi, sem víða hefir líka rauðleitan blæ. Sumstaðar vella ‘járnláarvatns’ -uppsprettur út úr berginu. En mest ber á því í bergsbrúnni, sem bærinn stendur á. Við þenna rauða lit er nesið án efa kent. Að vísu er sams konar rautt berglag undir blágrýtinu í Digranesi (nú Borgarnesi) og viðar á Mýrunum. En í Rauðanesi blasir það hvað bezt við augum. (Árb. Fornl. 1908: 21)

Some people have had the name of the headland and the farm: Raufarnes. But Rauðanes is certainly the correct [name]. In

rock-faces everywhere a layer of reddish rock is absolutely clear under a basalt layer, which widely also has a reddish look. In some places iron-laden-springs [i.e. springs of water carrying iron] well up out from the rock. But most is brought out beside the edge of the rock, where the town stands. The headland is without doubt known after that red colour. In fact the same sort of red rock-layer is under the basalt in Digranes (now Borgarnes) and more widely throughout the Mýr. But in Rauðanes it is most clear to [the] eyes.

This description shows that there is good reason for the promontory to be known as *Rauðanes* and associated both with the colour red and with iron deposits. Sigurður Nordal states that the name Raufarnes must be a mutation of Rauðanes (ÍF 2 1988: 78 n.1). Raufarnes and Rauðanes, and other toponyms incorporating the *Raufar*- and *Rauða*-elements, appear elsewhere in Iceland (particularly in the northeast) and show a similar tendency towards confusion or mutation (cf. ÍF 1 1986: 340-1, 492). The meaning of Raufarnes (from the feminine noun *rauf*, “rift, hole”, hence “ness of [the] rift”) may not be unrelated to the various cliffs and layers of rock that are described above and are clearly associated with the geology and hydrology of iron deposits (Cleasby-Vigfusson 1974: s.v. *rauf*). The exact reasons or factors involved in the prevalence of both Raufarnes and Rauðanes remain unknown, but both toponyms are (at least on Borgarnes) clearly associated with iron depositions.

The following passage from chapter 30 of *Egils saga* also shows that the toponym Rauðanes (or Raufarnes as the manuscript would have it)²¹³ is associated with bog iron smelting and blacksmithing:

Skalla-Grímr var járnsmiðr mikill ok hafði rauðablástr mikinn á vetrinn; hann lét gera smiðju með sjónum mjök langt út frá Borg þar sem heitir Raufarnes; þotti honum skögar þar eigi fjarlægir. En er hann fekk þar engan stein þann er svá væri harðr eða sléttr at honum þætti gott at lýja járn við – því at þar er ekki nema malargrjót; eru þar smáir sandar allt með sæ – þat var eitt kveld þá er aðrir menn fóru at sofa at Skalla-Grímr gekk til sjóvar ok hratt fram skipi áttæru er hann átti ok reri út til Miðfjarðareyja; lét þá hlaupa niðr stjóra fyrir stafn á skipinu. Síðan steig hann fyrir borð ok kafaði ok hafði upp með sér stein ok færði upp í skipit; síðan fór hann sjálfr upp í skipit

²¹³ Following the example of many editors and translators, I do *not* correct Raufarnes to Rauðanes in this excerpt from *Egils saga*. From now on I will, however, use only Rauðanes in my own analysis and discussion of this region and its history.

ok reri til lands ok bar steininn til smiðju sinnar ok lagði niðr fyrir smiðjudyrum ok lúði þar síðan járn við. Liggr sá steinn þar enn ok mikit sindr hjá ok sér þat á steininum at hann er barðr ofan ok þat er brimsorfit grjót ok ekki því grjóti glíkt qðru er þar er ok munu nú ekki meira hefja fjórir menn. Skalla-Grímr sótti fast smiðjuverkit, en húskarlar hans vönduðu um ok þótti snimma risit; þá orti hann vísu þessa:

*Mjök verðr ár, sás aura,
ísarns meiðr at rísa,
váðir vidda bróður
veðrseygjar skal kveðja;
gjalla lætk á golli
geisla njóts meðan þjóta,
heitu, hrærikytjur
hreggs vindfrekar, sleggjur. (ÍF 2 1988: 78-9)*

Skalla-Grímr was a great iron-smith and used to do a lot of bog-iron-smelting during the winter; he had a smithy built near the sea well away from Borg in that place called Raufarnes; it seemed to him the forest was not so far away there. But he could get no stone in that place which would be hard or level enough so that it seemed to him good to hammer iron upon – because in that place there is nothing except beach pebbles; there are fine sands all along the sea – that was one evening when other men went to sleep that Skalla-Grímr went to the shore and launched the eight-oared ship he owned and rowed out to Miðfjarðareyjar; he let drop then a stone anchor from [the] bow of the ship. Then he stepped overboard and dove down and brought up with himself a stone and loaded it up into the ship; then he went up into the ship himself and rowed to land and carried the stone to his smithy and put it down before the doors of the smithy and he hammered iron with that there afterwards. That stone still lies in that place and a great amount of slag alongside it and it can be seen that the stone has been hammered on top and that it is a surf-worn rock and there is no other rock like it there and a greater weight cannot now be lifted by four men. Skalla-Grímr was very eager about work in the smithy, but his farmhands complained about that and thought the time to rise in the morning was early; then he [Skalla-Grímr] composed this verse:

Very early must the tree of iron [blacksmith] rise, he who shall demand wealth from the wind-sucking clothes of the brother of the sea [smith's bellows]. I make sledge-hammers ring on the hot gold of the enjoyer of the beam [glowing iron], while the wind-

greedy moving hovels of the wind [smith's bellows]
howl.²¹⁴

The toponym Rauðanes and the term for the process of smelting bog iron (*rauðablastr*) are morphologically parallel in construction. These compound words establish the cultural landscape of smithing in settlement-period Iceland. The smithy is located some distance away from the main settlement complex. The smithy is established so that it is close to a source of fuel: wood from the forest must be baked in large volumes to produce the amounts of charcoal necessary for smelting procedures. As the toponym Rauðanes suggests, the smithy is also close to lowlands rich in *rauði*, “bog iron”, deposits. The narration emphasizes that the lasting evidence of blacksmithing work functions as an important, even monumental, feature in the historically situated cultural geography of this region.²¹⁵ This excerpt from *Egils saga* demonstrates that iron smelting practices were a prominent feature in the cultural landscape. Skalla-Grímr's activities literally shape the landscape in terms of monumental and archaeological imprints in the landscape over time, and these imprints are evidence of a cultural geography that connects bog iron resources to wood (fuel) resources.

Moreover, evidence from literary, historical and archaeological sources shows that there is clearly a history of social networking in relation to these geographical associations and bog iron resources. According to the *Melabók* manuscript of *Landnámabók*, a man is nicknamed Rauða-Björn because he *blés fyrstr manna rauða á Íslandi* (ÍF 1 1986: 87n.), “was the first of men in Iceland who smelted bog iron.” Rauða-Björn is a Norwegian who establishes his family in Iceland early in the settlement period. He buys land from Skalla-Grímr (ÍF 1 1986: 88-90), which suggests a close interaction between two renowned early settlers who are also skilled bog iron smelters and blacksmiths. That the first instance of smelting bog iron is a noteworthy and networked historical event in *Landnámabók* speaks to the significance of this practice as something that shaped the cultural geography of medieval Scandinavia (cf. Smith 2005: 184, 187).²¹⁶

²¹⁴ I have followed Bjarni Einarsson's translation of this verse closely, with some modifications (cf. Bjarni 2003: 42n).

²¹⁵ Writing in 1933, Sigurður Nordal echoes the phrase from the saga itself (quoted above), observing once again that evidence of bog iron smelting can still be found on Rauðanes (ÍF 2 1988: 78 n.1).

²¹⁶ Furthermore, Skalla-Grímr is also transplanting into the new Icelandic society the social organization and work ethic that his father successfully demonstrated in Norway: at the outset of the saga we are told that Kveld-Úlfr (Skalla-Grímr's father) was rich in both goods and lands, a figure of great authority and an exceptionally able farmer. Kveld-Úlfr is not a smith, as is obviously the case with Skalla-Grímr, but Kveld-Úlfr is said to have been in the habit of rising very early in the morning in order to look over his cattle and cornfields, as well as the activities of his labourers (*sýslumaðr*) and skilled craftsmen (*smiðir*) (ÍF 2 1988: 1). Kveld-Úlfr is an exemplary

Furthermore, Kevin Smith's studies of the farmstead at Háls in Iceland show that bog iron was collected, roasted, stored and smelted on a farmstead that was occupied from the late ninth century (Smith 2005: 188). This farmstead is in the Brogarfjörður district associated with the extensive land claim made by Skalla-Grímr (Smith 2005: 203). Smith's dating of the site corresponds to the ninth- and early tenth-century settlement period and the dating of the events described in both *Egils saga* and *Landnámabók*. However, Háls is not likely to correspond to Skalla-Grímr's own metalworking site, for Rauðanes appears to have been located farther southwest, closer to Borg, near Leirulœkr on the Borgarfjörður inlet (ÍF 1 1986: "Landnám Skalla-Gríms"; Landnámssetur Íslands 2010: "Egils Saga Revealed"). Rauða-Björn's land claim corresponds more closely to the inland area associated with Háls (Smith 2005: 203; ÍF 1 1986: "Landnám Skalla-Gríms").

Yet another influential smith is mentioned in *Landnámabók*. Chapter 328 describes a man who is suggestively called Hrolfr höggvandi, or Hrolfr "The Striker" (ÍF 1 1986: 328). Hrolfr once farmed at a place called Moldatún in Norway. His sons are called Vémundr and Molda-Gnúpr, and they were renowned in Norway, before they moved to Iceland, as *vígamenn miklir ok járnsmiðir*, "great fighters and blacksmiths" (ÍF 1 1986: 328). The genealogical influence of this family is strong in Iceland, and it is ultimately said to contribute to the Sturlung family (ÍF 1 1986: 329), one of the major families in power in thirteenth-century Iceland. Vémundr, like Skalla-Grímr, also recites a verse when he is in the smithy:

*Ek bar einn
af ellifu
bana orð.
Blástu meir! (ÍF 1 1986: 328)*

I, just by myself, became the bane of eleven [men]. Blow harder!

This verse clearly comes across as a threatening imperative to pump the bellows harder or die. Vémundr presents a fearsome figure both in the smithy and at battle. It is nonetheless clear that this blacksmith is an influential figure in society and history, working in his smithy and community by coordinating (and motivating) a workforce.

figure with respect to the agrarian multi-functional central-place complex and aristocratic associations of the work of skilled craftsmen. Skalla-Grímr is a similarly impressive and influential figure. He is an *iðjumaðr mikill*, "a great hard-working man", a *skipasmiðr mikill*, "a great ship-builder", and a *járnsmiðr mikill*, "a great iron-smith" (ÍF 2 1988: 75, 78). For Skalla-Grímr, his work ethic and skills as an iron-smith are part and parcel of his role as a successful leader of an early settlement and as a manager and coordinator of a workgroup.

Another key instance of the cultural geography of smithing resources and the use of the term *rauði* appears in the thirteenth-century *Konungs skuggsjá*, a treatise written for the education of Magnús lagabœtir (b. 1238 d. 1280), the son of King Hákon Hákonarson. In the father-son dialogue of this treatise, the father describes the bog iron resources that abound in Iceland:

Á því landi er málmr sá mikill, er járn skal af gera, ok kalla menn þann málrm rauða eptir mállýzku sinni, ok sva kalla menn hér með oss. En sá málmr hefir verit ærinn einn dag fundin, ok menn hafa ætlat at búa annan dag ferð sína þangat, ok blása þar ok gera járn af, þá hefir sá rauði horfit svá í brott, at engi maðr veit hvar hann kom niðr, ok er þat kallat á því landi rauða-undr. (Keyser et al. 1848: 37)

In that land that ore is abundant, which iron is made out of, and people there call that ore bog iron according to their language, and so people call it here amongst ourselves. When enough of that ore has been found one day, and people have planned to prepare the next day for their journey thence, and to smelt in that place and make iron out of [it], then has that bog iron withdrawn away, such that no one knows from where it comes below, and this is called in that land the bog-iron-marvel.

This passage emphasizes the importance of identifying geographical locations that are rich in bog iron. It also, however, characterizes these deposits as sometimes fleeting or unstable. The human impact on the landscape following settlement in Iceland actually increased the number of wetlands and thus also, in some areas, may have increased the presence of bog iron (Smith 1995: 334-9). This *rauða-undr* phenomenon may suggest that the human impact on the landscape (and/or other factors) made some bog iron deposits less stable and more fleeting, perhaps also increasing the awareness of the need to manage resources like woodlands (McGovern *et al.* 2007: 45-6; Smith 1995: 339).

Furthermore, as Rauða-Björn's Norwegian extraction and expertise shows, these practices were not limited to Iceland. Arne Espelund's research identifies the long history of bog iron processing throughout Scandinavia from medieval times through to the end of the pre-industrial era (Espelund 1997: 47-57). Just as Skalla-Grímr's work is seasonal, so too the Norwegian word *jernvinna* refers to seasonal iron-smelting activities that took place at more than one hundred sites from at least c. 1455 to c. 1645 (Espelund 1997: 47-8). There is also evidence of bog iron processing at L'Anse-aux-Meadows in Newfoundland, showing that

these techniques were highly portable and that their historical usage corresponds to the dates and events of *Eiríks saga rauða* (Wallace 2006: 59-63).

Flóamanna saga preserves another piece of literary and historical evidence that this topographic concept of bog iron resources and processing techniques traveled with the Scandinavians. This saga appears in two key redactions. The shorter redaction appears in several late paper manuscripts, while the longer redaction is only preserved in the vellum manuscript AM 445 b 4^{to} and a copy of this vellum, AM 515 4^{to} (Perkins 1969: 93). According to Guðbrandur Vigfússon and Frederick York Powell (1905: 630-1), Björn Sigfússon (1958: 429-51) and Richard Perkins (1969: 93), the longer redaction of *Flóamanna saga* represents a more original form of the work than the shorter paper manuscripts. According to both redactions, Þorgils Ørrabeinsstjúpr is shipwrecked on the coast of Greenland with his companions. After being forced to spend two winters there, Þorgils's slaves murder his wife and escape with the boat that Þorgils has been building. After spending a third winter at the same site, Þorgils and his companions escape in a skin boat and the longer redaction includes a brief and enigmatic account from their journeys that is not preserved in the shorter redaction. Perkins interprets this account as describing Þorgils and his companions discovering an inscribed verse upon an object (perhaps an oar) left behind by the escaped slaves (1969: 93).

*Vaskat ek dasi,
er ek þessa dró
opt ósjaldan
ár at borði;
sjá gerði mér
sára lófa,
meðan heimdragi
hnauð at rauða.* (ÍF 13 1991: 291-2)

“I was no laggard when I pulled this oar, again and again, at the ship's (boat's) side. It gave me sore palms, while the stay-at-home beat at bog-ore.” (Perkins 1969: 95)²¹⁷

Finnur Jónsson identifies this verse as belonging to the tenth century, probably around the year 987 (1967 AI: 185). Perkins points out that the verse, as interpreted, juxtaposes “two descriptions of rhythmical motions: the pull of the sailor's oar in the first six lines is set against the beating of the stay-at-home's hammer in the last two” (1969: 96). He argues that this verse may originally have come from an oral tradition of rhythmical chants associated

²¹⁷ See Perkins for a detailed analysis and documentation of how the verse is interpreted (1969: 93-95).

with particularly repetitive activities, like rowing and smithing (e.g. beating metal, pumping bellows) (Perkins 1969: 96-101). The verse does not appear in a context that would suggest iron smelting in Greenland, but it does provide further evidence that knowledge of bog iron processing traveled with the Scandinavians during this period. It also suggests there was a history of associations between *rauði*, “bog iron”, and the processing of this resource in particularly fixed geographical locations as part of relatively indoors or local way of life. In contrast to the man who rows a boat (perhaps to catch fish or trade), the man who works on bog iron is the *heimdragi*, the one who stays at a farmstead complex situated close to fire, shelter and the resources needed for harvesting and processing the ore.

Jørn Sandnes and Ola Stemshaug’s *Norsk Stadnamleksikon* (1980) identifies several Norwegian toponyms that also preserve the element *rauði*, “bog iron”, which is now called *myrmalm* in Modern Norwegian. Rauda, “red river”, and Rauland (from *Rauðaland*, “land of bog iron”) both appear in the Telemark area and are related to ON *rauði*, “bog iron” (Sandnes and Stemshaug 1980: s.v. *Rau(d)a*, *Rauland*; cf. Olsen 1926: 110, 204). The element *rød-* appears in numerous toponyms throughout Norway and in some cases appears to come from ON *raud*, adj. “red”, but in others it appears to come from ON *rauði*, m. “bog iron” (Sandnes and Stemshaug 1980: s.v. *Rødberg*, cf. *Rødungen*). Sandnes and Stemshaug also note that the element *jarn-* appears in many Norwegian toponyms and is regularly associated with rivers that carry substantial amounts of iron in their water as well as locations where bog iron smelting took place (1980: s.v. *Jarn-*, *Jarfjorden*).

In addition to these Scandinavian contexts, several toponyms in Nottinghamshire, Bedfordshire, Oxfordshire, Yorkshire and Northumberland also incorporate derivatives of Old Norse *rauðr*, Old English *rēad* or Old Saxon *rōd* (de Vries 1977: s.v. *rauði*, *rauðr*; *OED*: s.v. *red*; Smith 1970: s.v. *rauðr*). In these cases *rauðr* is usually an “allusion to the colour of the soil”, and several instances are also clearly associated with iron deposits and early medieval iron working (Smith 1970: s.v. *rauðr*). Unless otherwise noted, all the following toponyms are documented in the Domesday Book (c. 1086). Watts (2004) succinctly documents the history of forms for all these toponyms:

- Radcliff, Ratcliffe, Rawcliffe, “red cliff or bank” (Lewis 1845: 614, 618; Mills 1991: s.v. *Radcliffe*, *Rawcliffe*; Smith 1961b: s.v. *Rawcliffe*; Watts 2004: s.v. *Radcliff*, *Radclive*, *Ratcliffe*, *Rawcliffe*).²¹⁸
- Radford, “red ford” (Watts 2004: s.v. *Radford*; Watts 2004: s.v. *Radford*; Whyne-Hammond 2007: 209-10;).
- Radley, “(the settlement at the) red wood or clearing” (Watts 2004: s.v. *Radley*).²¹⁹
- Radway, “(the) red way” (Watts 2004: s.v. *Radway*).²²⁰
- Radwell, “red spring or stream” (Mills 1991: s.v. *Radwell*; Watts 2004: s.v. *Radwell*).
- Rathmell, “red sandbank” (Lewis 1845: 614; Mills 1991: s.v. *Rathmell*; Smith 1961c: s.v. *Rathmell*; Watts 2004: s.v. *Rathmell*).
 - The Old Icelandic toponym Rauðamelr has been noted as a parallel here (Smith 1961c: s.v. *Rathmell*). In *Landnámabók*, Rauðamelr refers to the landclaim of the *hǫfðingi mikill*, “great chieftain”, Þorir Grímsson, which is located near two red-coloured sand dunes about forty kilometres north-northwest of Skalla-Grímr’s farmstead and smithy at Rauðanes (cf. ÍF 1 1986: 96-8, “Landnám Skalla-Gríms”). While there is no mention of iron smelting in association with Rauðamelr, *Landnámabók* does recount a curious story of Þorir, as an old blind man, going outside one evening and having a vision of a great and evil-looking man rowing up the river in a

²¹⁸ Charles Whyne-Hammond notes that Radcliffe on Trent, along with much of Nottinghamshire, “has an interesting geology, successive bands of sedimentary rock running north to south: sandstone, clays, limestones. These two villages stand on the keuper marl plateau, which gives a red clay soil.” (2007: 209-10). Lewis also notes that, “near the village [of Ratcliffe on Trent] is a perpendicular cliff of red clay, from which the parish took its name” (Lewis 1845: s.v. *Ratcliffe-on-Trent*). Not far from Radcliffe on Trent is the toponym Worksop: “The prefix here derives from *weorc*, but whether this was a personal name, or referred to a building is not known. The suffix is from the Saxon word *hop* meaning a small narrow valley. In the Domesday Book the place was called *Werchesope*” (Whyne-Hammond 2007: 210). About ten kilometres from Ratcliffe (near Coniston Water in Cumbria), Tylecote notes that “red hematite, charcoal” and “typical bloomery slag” have been found along with the remains of four furnaces (Tylecote 1986: 185). This evidence corresponds to estimates of thirty similar sites around Coniston, likely dating to the thirteenth to sixteenth centuries (1986: 185).

²¹⁹ The earliest record for Radley is from c. 1180 (Watts 2004: s.v. *Radley*).

²²⁰ “The reference is to an ancient trackway running from Brailes below Edge Hill to Knightcote [...] and to the red colour of the earth” (Watts 2004: s.v. *Radway*).

járnþökkvi, “iron-boat” (ÍF 1 1986: 97-8). This man digs at the gate to a sheep pen, and that night a lava eruption begins where he was digging.

- Rawmarsh, “red marsh” (Mills 1991: s.v. *Rawmarsh*; Smith 1961a: s.v. *Rawmarsch*; Watts 2004: s.v. *Rawmarsh*).²²¹
- Rotherham, “homestead or estate on the Rother river” (Watts 2004: s.v. *Rotherham*).²²²
- Rothbury, “(the settlement at) the red fortification” (Watts 2004: s.v. *Rothbury*).²²³

²²¹ There is “red earth [...] everywhere about Rawmarsh” and this is thought to “have given occasion to the name” (Smith 1961a: s.v. *Rawmarsch*). Samuel Lewis notes that following 1066 the estate of Rawmarsh was divided into three manors, Rawmarsh, Whetecroft and Kilnhurst (1845: 619). He notes that Rawmarsh is particularly known for excellent coal mines and excellent earthenware and clay, as well as a tradition of processing iron at Kilnhurst manor. Lewis describes the landscape and activities around the Kilnhurst manor, on the river Don:

The surface is diversified with hill and dale, and the soil is generally fertile; the substratum abounds with coal, of which there are mines in operation, and also with clay of excellent quality for earthenware and pottery. [...] The village stands on the ridge of a hill rising from the valley of the Don, and on the road to Pontefract; it is neatly built, and the inhabitants are employed in the neighbouring collieries, and in the manufacture of steel and iron, for which there are extensive works in the hamlets of Kilnhurst and Park-Gate. There are likewise some large potteries for the manufacture of white and coloured earthenware. The North-Midland railway passes through the parish. [...] The church, an ancient structure in the Norman style, was taken down, with the exception of the tower, and rebuilt in 1839. (Lewis 1845: 618)

²²² There are several possible interpretations of the root form and semantic meaning behind the three different rivers named *Rother* (Gover, Mawer and Stenton 1933: 118-9; Lewis 1845: 670-5; Watts 2004: 509). While the exact meaning of the root form of these names is a matter of some debate, it is clear from Lewis’s observations that the area around Rotherham (west riding of York), has a long history of activities related to iron ore processing: “the district abounds in mineral wealth; and coal and iron ore are found in great fusion, and have been wrought from a very remote period. The town was formerly celebrated for its manufacture of edge tools; and in 1160, there were mines of iron-stone, smelting-furnaces, and forges in the neighbourhood” (Lewis 1845: 672).

²²³ Rothbury is also subject to the debate noted above (cf. footnote 222 immediately above). Tylecote notes the evidence of an ore-roaster and furnace in Minepit Wood, Rotherfield (Sussex), dating to at least the fourteenth century (Tylecote 1986: 179, 182-3). Describing the village of Rothbury (Northumberland) Lewis notes possible associations to the colour of the water in the river Rother, the colour of the riverbed itself and the fish in the river (i.e. ON *rauði* as an appellative of trout, “the red one”). Finally, Lewis also notes that this “wide and airy” town

consists of three streets irregularly built, diverging from the marketplace; the inhabitants are supplied with water from several springs. The parish contains an abundance of limestone, sandstone, and iron-stone, and though there are no mines at present worked, yet from the large accumulations of scoria, it is evident that they must have been extensively wrought at a very ancient period, and most probably by the Romans: in many parts of the parish, the water is so strongly impregnated with iron as to be used medicinally. The ancient Forest of Rothbury, occupying a tract seven miles long and five broad, has been divided under the authority of an act of parliament passed in 1831. (Lewis 1845: 670-1)

Thus, associations with iron are distinctly possible in the history of Rothbury. Lewis also notes that several ancient defensive embankments surround Rothbury at distances of one or two miles, and that “the plan of one of the serpent temples of the Druids may clearly be traced” (1845: 671). The village, although in a state of disrepair during Lewis’s time, was clearly a prominent trading centre and production centre in earlier times.

- Roxby, “farmstead or village of a man called Rauðr” (Mills 1991: s.v. *Roxby*; Watts 2004: s.v. *Roxby*).²²⁴

While these are not all allusions to iron ore in the form of bog iron deposits, in most cases they do clearly refer to red-coloured earth, stone or water in areas where local deposits of iron ore have been found in the form of “ironstone”²²⁵ and processed during the medieval period.²²⁶

This information from the sagas and other Old Norse texts and contexts suggests that bog iron processing was a key aspect of settlement society in Iceland and throughout Scandinavia and the British Isles. Smith’s analysis in particular emphasizes the conceptual and social importance of bog iron resources and processing. Drawing upon the information presented in *Völuspá* 7 and *Gylfaginning* 14,²²⁷ Smith suggests that

a paradigm is established that ties metalworking and skilled crafting to the creation of new societies and identifies these technological and aesthetic endeavors as gifts from the gods, equal in importance to, and essential for supporting the establishment of governments, domestic units, and religious institutions.

[...]

As a critical resource with limited distribution and an ideological charter linking its production to the realm of the gods, iron could potentially have been monopolized by Icelandic chieftains. (2005: 184, 187)

This interpretation of an ideology behind the conceptualization of bog iron resources is plausible. However, the basic evidence for such suppositions must be the prominence of suggestive toponyms, historical events and settlement patterns in the literature and archaeology. That these resources were of great importance is shown by the networks of associations that relate to instances like Skalla-Grímr’s seasonal smelting practices on

²²⁴ “In the north of England the remains of Iron Age furnaces have been found at Roxby (Cleveland) and at West Brandon in Durham” (Tylecote 1986: 140)

²²⁵ “Ironstone” may refer to several slightly different forms of iron ore, but in several of these localities in England it appears to refer to “clay-ironstone”, which is usually found in association with coal deposits and shale layers (Tylecote 1986: 124, cf. 126, 139). In some areas this ironstone has been exposed and weathered into forms of limonite, magnetite or hematite (Tylecote 1986: 124). Tylecote discusses in more detail the types of iron ores and the localities in which these ores have been historically identified and processed in the British Isles (1986: 124-7).

²²⁶ I will also note here Tylecote’s survey of iron ore and iron ore processing in the British Isles from the Roman Iron Age and throughout the Medieval Period (1986: 124-8, 136-42, 179-201).

²²⁷ See *afl* 13. (page 56 above), and the conclusions to Chapter 1, specifically pages 126 and following and 153 and following.

Rauðanes in *Egils saga*. On the whole, this evidence suggests that there were commercial, political, ideological and practical forces driving the social construction of a geography that was, in part, identified through relation to signs of bog iron deposits from streams and bogs as well as convenient access to woodlands as a source of fuel specifically for smelting operations.

2.7 Returning to Járnvíðr: toponyms and settlement contexts

This evidence raises the question of whether or not we are justified in interpreting the toponym Járnvíðr as referring to a similar set of associations between bog iron deposits, woodlands and the settlement areas where smelting (and living) took place. Before the mythological context can be examined directly, the toponymic evidence of smithing sites from Scandinavia, particularly forms that are morphologically or semantically similar to Járnvíðr, must be examined in relation to concepts of spatial networks in specific geographical locations. Do these toponyms (Jarnwith, Isarnho, Jerrishoe) show a history of associations with pre-historic settlement contexts, and, if so, do these contexts have anything to do with metalworking, particularly the smelting of bog iron? Stefan Brink's influential work on toponymic evidence of prehistoric central-place complexes in Scandinavia is a key resource in this area of study. With a particular focus on the area of southern Jutland that is associated with Jarnwith/Isarnho, I will examine some archaeological evidence of prehistoric smelting sites and the geographic and geological features associated with the resources used at these sites.

The toponymic evidence in the region associated with Jarnwith-Isarnho-Jerrishoe is in some ways more difficult to study than the material that Brink uses to illustrate his theories about central-place complexes during the Late Iron Age and early Viking Age. Brink focuses mostly upon evidence from districts in Sweden because this is "where we have a rich source material. In Denmark it is not so easy to pick out such clear structures as in Sweden; obviously many of the Danish prehistoric place-names have been replaced and lost" (Brink 1999: 425). Despite the fact that toponymic evidence is more sparse and fragmentary in Denmark and Northern Germany, the region surrounding modern Schleswig and Flensburg does contain toponyms that may correspond to Brink's rubric for the identification of prehistoric central-place complexes. According to Brink,

The main ingredients of this *Late Iron Age central-place complex* are a coherent settlement district, normally in a

communicative strategic position for the larger *land*, province or region. In several cases, a bay or an inlet leads into this settlement district, where it widens to become a lagoon-like bay or a lake. In a strategic position near the mouth of this inlet, very often a supposedly chieftain's farm is situated, normally with a name in *-tunar* or *-salir*, sometimes in *-husar*. Very often we have in the vicinity a *Husaby* or a *Bosgården*, which hypothetically may be understood as a later administrative centre belonging to the Middle Ages (and maybe the Late Viking Age). In this settlement district, scattered around, we find the site of the retinue (*karlar*, *rinkar*, etc.), often the farm of a smith (*Smedby*), an elusive place-name *Gillberga* (sometimes *Gilleby*), not yet convincingly interpreted, indications of an assembly- and *thing*-site (*Hög*, *Ting*-, etc.), several pagan cult sites and groves (*Frösvi*, *Torshunda*, *Odensåker* etc.). Often the toponymic evidence may be coupled with extraordinary monuments, such as rudiments of hall buildings, large mounds, cult houses or cult sites. (Brink 1999: 434-5)

The Schlei clearly operates as a highly sheltered waterway with a broad inlet farther inland. The strategic role of the Schlei and this region in transportation and trade (both from east and west and north and south) has already been discussed in relation to the history of the settlement at Hedeby during the seventh to eleventh centuries (see page 92 above). Along the length of the most eastern stretch of the Schlei toponyms like Gunneby, Sieseby, Guckelsby, Karby, Kopperby, Grödersby, Ketelsby and Bösby appear, each suggesting a farmstead complex. On the northern side of the Schlei, immediately south of Süderbrarup, is an area of less than one square kilometre associated with the element *Ul-*, including Ulsnisland, Ulsnis, Ulsnishöh, Ulsnisfeld (ADAC Verlag 2000: 22; Militärgeographisches Amt 1963: L 1524). This *Ul-* element dates back to tenth century toponyms in this area (Berger 1993: 261-2). Brink identifies this *Ul-* element as the name of the pagan god *Ullr*, suggesting that these toponyms may reflect a prehistoric cult site that functioned “within a settlement district or region” (Brink 1999: 425, 428; cf. Brink 2008: 62-3).²²⁸ This small area around Ulsnis also includes the toponyms Gunneby, Schmedeland and Gallberg, suggesting that this was once a settlement district with its own farmsteads, smithing sites and cult sites, all within less than one square kilometre. About five kilometres west of this region is a complex of toponyms (Tolk, Tolkschuby, Tolkwad) that reflect the Old Norse word *tolkr* or *túlkr*, “spokesman”

²²⁸ Alternatively, *Ul-* and particularly *Ulsnis-* may share origins with the Old Norse *úlfr*, “wolf”, and *nes*, “headland” (de Vries 1977: s.v. *nes*, *úlfr*).

(*OED* s.v. *tulk*; de Vries 1977: s.v. *tulkr*; ADAC Verlag 2000: 22; Militärgeographisches Amt 1963: L 1522). This may refer to a settlement associated with a retinue serving a particular function, as with *Karlaby* and *Rinkaby* in Brink's studies (1999: 424-5, 434-5). Immediately south of Tolk is Gammeltoft. In his studies of toponymic and geographic information systems around Ladby, east Funen (Denmark), Peter Steen Nielsen identifies *toft* as meaning "'the area outside the common land which was available to every farmer in a village for building, etc.'" These areas are usually situated in direct connection with individual farms" (Nielsen 1999: 491). Nielsen also points out that "the field name 'Gammel Toften' meaning 'former toft'" is also associated with prehistoric settlements. "In several cases," Nielsen observes, "this [Gammel Toften] has been documented to indicate the locus of an older settlement – usually from the Viking Age or earlier" (1999: 491-2). These toponyms clearly characterize the Schlei region as a rich area for prehistoric central-place complexes, including specific localities associated with smithing activities, e.g. Schmedeland (< *smíð*).

More evidence abounds in the region associated with the Schlei and Flensburg inlets. Several suggestive toponymic networks correspond to the north-south trade route in this area (Wiechmann 2007: 29; Degn 1994: 81, 89). Indications of an assembly site may be found in the toponym *Tinglev* (< *Ping*, i.e. assembly),²²⁹ located twenty kilometres northwest of Flensburg and about twelve kilometres northwest of Smedeby (Geodætisk Institut 1978: 1211 IV). Ten kilometres northeast of Smedeby is Tørsbøl (Geodætisk Institut 1978: 1211 I, 1211 IV).²³⁰ The first syllable of Tørsbøl appears to be derived from the god Þórr and this toponym may refer to a cult site. Immediately southeast of Tørsbøl is Rinkenæs (< *rinkar*), a small projection of land that enters the Flensburg Förde (Geodætisk Institut 1978: 1211 I). Five kilometres southwest of Smedeby is Frøslev (< *Freyr*), another toponym that is suggestive of a cult site (Geodætisk Institut 1978: 1211 IV). Brink points out that the element *-lev/-löv* in Scandinavia toponyms is never found in the British Isles: this "must indicate" that this toponymic element "ceased to be productive in the Viking Age, and hence must be older" (Brink 2008: 58).²³¹

²²⁹ cf. Brink (1999: 426-7)

²³⁰ Brink suggests that the Scandinavian toponymic element *-böle* likely dates to c. 1000-1500 and may mean "farm" (2008: 59-60). I am not sure that the *-bøl* element in *Tørsbøl* corresponds to *-böle*, particularly since Brink clearly refers to *-böle* in the context of northern Sweden (2008: 60).

²³¹ C. T. Smith suggests that this *-lev* element must either date to Anglian settlements of the fourth century in Jutland and Sweden, or to some point later than the seventh or eighth centuries in these same areas (Smith 1978:

If we follow the trade route farther south, to the region directly between Flensburg and Schleswig, another highly suggestive toponym appears. Süderschmedeby is situated some fourteen kilometres south of Flensburg and some twenty kilometres north of Schleswig and Hedeby (ADAC Verlag 2000: 21; Degn and Muuß 1966: 211; Militärgeographisches Amt 1963: L 1322). Süderschmedeby is immediately to the east of the major north-south highway, which corresponds to the trading route used since medieval times (ADAC Verlag 2000: 21; Degn 1994: 81, 89; Militärgeographisches Amt 1963: L 1322; Wiechmann 2007: 29). The toponym Süderschmedeby is related to smithing activities and can confidently be separated into three Old Norse words, *suðr*, “south” (cf. de Vries 1977: s.v. *suðr*), *smið*, “forge work, smithing” or “smithy” or “forge” (cf. de Vries 1977: s.v. *smið*), and *bær*, “house, courtyard, farm” (cf. de Vries 1977: s.v. *bær*). Brink suggests that toponyms like Schmedeby likely indicate a farmstead complex where “the smith, most probably the smith *par préférence*, lived” (Brink 1996: 241-2; cf. Brink 1999: 425, 433-4).²³² Süderschmedeby, thus, translates roughly as “Southern-Smithing-House”, “Southern-Smithing-Farm” or “Southern-Smithing-Courtyard.” Moreover, this toponym is likely the southern counterpart to the more northerly Smedeby (Geodætisk Institut 1978: 1211 IV). Immediately east of Süderschmedeby is Torsballig (*Tor*- < *Pórr* —*ballig* < ?),²³³ another toponym that is suggestive of a cult site. Three large burial mounds have been found in the immediate vicinity of Torsballig, one of which (according to legend and local folk song) belongs to King Frode (Heldt 1998: 11).²³⁴ These mounds are c. 3000 years old and while there are only three preserved today there used to be a group of seven mounds at this location (Heldt 1998: 11). Immediately west of Süderschmedeby, only three or four kilometres away on the western side of the trade-route and the Treene, is Jerrishoe and its associated network of toponyms.

128). Brink suggests that the element *-lev/-löv* along with several other Scandinavian toponymic elements “fairly securely date to the Roman period (c. 0-400)” (2008: 58).

²³² Brink suggests that the Scandinavian toponymic element *-by* (like *-stad* and *-land*) likely dates to c. 500-1100 (2008: 58).

²³³ Jürgen Udolph outlines the prevalence of toponymic elements that appear to be related to a root form **balg-* (1994: 21-4). It has been hypothesized that the element *-ballig* is related to this root and may have once referred to a hill, an increase in elevation, or a clearing in a forest (Udolph 1994: 22-3; Heldt 1998: 16). Udolph claims, however, that Torsballig is a false *ballig*-name and is not actually related to these meanings (1994: 23). Nonetheless, as Heldt points out, the *Pórr/Tor*- element appears in numerous toponyms in the Angeln district and these areas are clearly associated with cult activities and burial mounds (Heldt 1998: 16).

²³⁴ My thanks go to S. Jäger for helping with access to the chronicle of Havetoftloft and Torsballig.

Farther to the southeast, in the Danish Wohld associated with the toponyms Jarnwith and Isarnho, are a collection of *Hünengraber* burials and the toponym Hohenstein (ADAC Verlag 2000: 33; Militärgeographisches Amt 1963: L 1526). Brink suggests that the terminal *-stein/-sten* element may be interpreted as a reference to a raised runestone or other stone monument (1999: 426-7; de Vries 1977: s.v. *steinn*).

This toponymic evidence suggests that there were prehistoric multi-functional central-place complexes in this area, and that these complexes included settlements that were particularly associated with smithing activities.

2.8 Archaeology and geology of Jarnwith-Isarnho-Jerrishoe

The geology of the Jutland peninsula is a major determining factor in the historical accessibility of resources like bog iron, woodlands as well as arable lands. As I have mentioned above, there is evidence for a longitudinal tract of dense forest in this region of the Jutland peninsula during the Migration Period and Viking Age. This tract of forest appears to have been one part of a pattern of four general types of topographical regions in southern Jutland, arranged roughly from east to west along a similarly longitudinal orientation. The central and most dominant geological part of the southern Jutland peninsula is composed of a formation known as the Geest. During the periods in question this Geest was covered in elevated plains and heaths (Crumlin-Pedersen 1997: 33-4; Heydermann and Müller-Karch: 1980: 2; Mikkelsen 1999: 188; Nørbach 1999: 240-6; Wegener 1850: 9; Wiechmann 2007: 34).²³⁵ To the west of the Geest were lowland marshes; to the east of the Geest was a hilly lowland area; throughout portions of the hilly-land was a densely forested borderland (Crumlin-Pedersen 1997: 33-4; Heydermann and Müller-Karch: 1980: 2; Mikkelsen 1999: 188; de Vries 1977: s.v. *Járnviðr*; Wegener 1850: 9; Wiechmann 2007: 34).²³⁶ Dorte Kaldal

²³⁵ See the footnote 130 (page 92 above) for more information on the toponym Hedeby/Haithabu meaning “settlement at the heath.”

²³⁶ The geological transitions between three general types of geological deposits and topography are clearly apparent from north of Flensburg, through Schleswig and down to Neumünster. First, to the west, is the elevated Geest. This Geest demonstrates several areas of steep inclines that connect to the second and central feature, i.e. the sandy and marshy lowlands. Third and most eastern is another area with steep hills composed of glacial deposits of gravel and sand descending into lowlands of clay and boulder depositions. The transition zones between these formations clearly correspond to the main north-south trade route near Schleswig/Hedeby and the networks of toponyms associated with smithing, i.e. Süderschmedeby, Smedeby, Jerrishoe, Joldelund, Jarnwith/Isarnho, etc. A detailed topographical overlay and analysis of this information and the corresponding smelting sites, of the sort that Nørbach demonstrates for northern Jutland (1999: 244, Fig. 8), would prove most useful in producing more definitive and accessible data on the specific correlation between locations and formations. The *Deutsche Landschaften – Bau und Formen* geological maps (Institut für Landeskunde 1970) in

Mikkelsen's study of settlement structures in Denmark from the Iron Age through to the Medieval Period shows that these topographical patterns of Geest, lowlands and forests are not restricted to southern Jutland, but continue throughout northern Jutland as well (1999: 188). The longitudinal orientation of this pattern is, however, more pronounced in the southern parts of Jutland and overlaps with the north-south and east-west trade routes that cross at Hedeby, the Danevirke and the Schlei inlet.

Several scholars have shown that the transitional zones between the Geest and the lowlands appear to have been focal points for settlement activities. These areas frequently had access to nearby arable lands, woodland, tributaries, bogs and wetlands, all within a relatively small area. In particular, Dorthe Kaldal Mikkelsen and Lars Christian Nørbach have shown that small areas of arable land were particularly focused immediately to the east of the Geest and the woodland (Mikkelsen 1999: 188; Nørbach 1999: 240-6). The Geest that composes the gravel and sand base for the elevated heath is formed of the remnants of the glacial moraines that were created during the Weichselian Ice Age (Breuning-Madsen *et al.* 2000: 2; Nørbach 1999: 242). Nørbach's research shows that iron-smelting sites correspond closely to locations near the edge of the Geest and near woodland. These sites with evidence of iron production also extend into the northern Jutland peninsula, following the peripheries of glacial moraines in close association with tributaries and woodlands (Nørbach 1999: 240-6).

There are several reasons behind this structural organization of the settlement and smelting activities on the Jutland peninsula. The hills to the east of the Geest are also the result of glacial activity. During the last glacial period, western Jutland and Norway were the only areas of mainland Scandinavia that were not under a glacier (Nørbach 1999: 242; Ahlmann 1976: 20). Areas rich in bog iron deposits tend to correspond to the transitional zones at the edges of this Geest. There are several reasons for this. It is clear that the sand and gravel composition of the Geest allowed for the glacial waters to erode mineral deposits, transporting iron in the tributaries and concentrating it in lowlands. Even long after the glacier receded, bog iron ore continued to accumulate in the lowland bogs of this area because the previous glacial run-off had reduced the calcium content of the sediments and created an environment in which iron oxides may more readily form nodules of bog iron

combination with the Militärgeographisches Amt series of topographical maps (1963) show a clear, if general, correspondence.

(Nørbach 1999: 242). Many of the estuaries in these areas flow down from the elevated Geest and other elevated hills in the eastern areas, depositing bog iron ore in the lowlands (Nørbach 1999: 242). Nørbach's study shows that the close association between settlement patterns and iron ore extraction sites from the Viking Age extends into northern Denmark at sites like Varde, Snorup and Drengsted. Nørbach also notes that some sites show no evidence of smelting at all, despite the fact that bog iron is known to have been locally abundant (1999: 242-4). The lack of iron smelting at these sites, Nørbach suggests, "must be explained by the absence of an adequate supply of fuel (wood) to maintain a large-scale iron production" (1999: 244). This suggests a strong correlation not only between the topographical features that lead to accumulations of bog iron ore,²³⁷ but also to the topographical areas that correspond to accessible tracts of dense forest.

Immediately before and throughout the medieval period, there were several sites at which bog iron was smelted in the area surrounding the Flensburg, Schlei and Eckernförde inlets. A few key archaeological sites have been excavated in this area, especially Süderschmedeby, Handewitt, Flensburg, Joldelund and Neumünster. Hans Hingst, for instance, has done several studies of smelting sites in this area. He offers a precise topographical description of an archaeological smithing site associated with Süderschmedeby:

In den Waldstreifen und auf den Ackerflächen vor dem Ostrand der Treene Niederung zwischen der Gemeindegrenze Tarp und der Europastraße 3 befinden sich zahlreiche Spuren vorgeschichtlicher Eisenverhüttungsplätze. (Hingst 1973: 249)

In the strips of forest and the arable land located on the eastern edge of the Treene lowlands between the municipal boundary of Tarp and European Highway 3 there are many traces of prehistoric smelting sites.

²³⁷ Curiously, research on burial mounds on the Jutland peninsula (particularly Egtved and Gadbjerg) from the Early Bronze Age (1700-1000 BC) shows that the anaerobic, acidic and percolating environment immediately surrounding oaken log coffins is conducive to the formation of bog iron deposits (Breuning-Madsen *et al.* 2000: 1-9). These accumulations form pan-shaped features underneath and sometimes overtop of burial deposits, "encapsulating" the buried remains. Chemical analysis of these accumulated "iron pans" shows that they are similar in composition to bog iron deposits in the region (Breuning-Madsen *et al.* 2000: 1). The mounds that show these particular accumulations tend to correspond geographically to the "main stationary line (the ice limit) of the Weichsel Glaciation" (Breuning-Madsen *et al.* 2000: 2). If there is any way to determine whether these deposits might have been used for smelting this could prove a fascinating area of further study, particularly into potential associations between smithing, elevated mounds, death and the supernatural (cf. Larsson 2005: 99-124; see also the discussion of Larsson and Gansum on page 137 above).

The *Europastraße 3* is the major current north-south highway through this region, and (as I have noted before) it corresponds to the medieval north-south trade route (ADAC Verlag 2000: 21; Degn 1994: 81; Militärgeographisches Amt 1963: L 1322). This clearly situates the finds at Süderschmedeby in the topographic transitional zone between the elevated plains and heath of the Geest and the hilly lowlands to the east, with convenient access to this trade route.

The Süderschmedeby site itself is characterized as a terraced workplace, with a substantial change in elevation (Hingst 1973: 249). At this site an anvil stone was found with three flat stones, all of which were set upon a layer of settlement sediments some twenty centimetres thick (Hingst 1973: 249). This clearly establishes that the flat stones and anvil stone were intentionally placed here after a preceding period of settlement activities. The remnants of at least nine bloomery furnaces and a great quantity of iron slag and charcoal were found nearby. Estimates suggest that several tons of slag have been deposited here (Hingst 1973: 249). Depositions of slag and waste are quite deep, sometimes up to two metres, suggesting that smelting activities took place here for an extended period of time. Finds date to the Late Roman Iron Age (AD 200-400) and early Migration Period (AD 300-550) (Hingst 1973: 249-50).

Handewitt is about twelve kilometers north of Jerrishoe (ADAC Verlag 2000: 21; Militärgeographisches Amt 1963: L 1320, L 1322). In a forest area here a mound of iron slag was found about seven metres in diameter and ninety centimetres in height (Hingst 1974: 152). Hingst suggests the finds indicate that bog iron was roasted and smelted at this site (1974: 153). Pit kilns were found, suitable for charcoal production, and they contained shards of pottery vessels, suggesting that they may also have been used for roasting bog iron. Fifty metres north of the slag mound the remains of several medieval bloomery furnaces were found (Hingst 1974: 153). Hingst does not outline information on the status of a settlement associated with this location.

About six kilometres east of Handewitt another iron smelting site has been excavated near modern-day Flensburg. In a forested region the remains of at least nine distinct furnaces have been found along with several slag heaps measuring in total nearly fifty square metres (Hingst 1969: 429). Activity here dates from the Pre-Roman Iron Age through to the High Middle Ages (Hingst 1969: 430). Several similar sites have also been excavated near Neumünster, about thirty kilometres south of the Eckernförde peninsula associated with the

toponyms Jarnwith-Isarnho (Hingst 1970: 423-52; Militärgeographisches Amt 1963: L 1924).

More recent archaeological work has been done at Joldelund. This site is located about fifteen kilometres due east of Jerrishoe, about twenty kilometers southwest of Flensburg and thirty kilometers northwest of Schleswig and Hedeby/Haithabu. The Kammborg hill in Joldelund was the site of an iron-processing settlement during the fourth and fifth centuries. The spatial extent of the settlement site during Late Roman Iron Age and early Migration Period appears to have been at least eight hectares, or almost one square kilometre (Jöns 1999: 255). In “the low-lying areas adjacent to several streams which run close to this site, the remains of bog iron ore deposits have survived to the present day” (Jöns 1999: 255). The excavation of Kammborg at Joldelund is partial. Although the finds show convincing evidence of an established settlement with extensive activities in iron processing, there is insufficient information to determine the communal structure of this settlement and the spatial and communal relations between the smithing activities and the spaces that may have had aristocratic and sacral functions (Jöns and Heinrich 1997: 186). There are, however, several areas of ritual deposition. Many, but not all, of these occur in open spaces between settlement buildings and in areas where no other discernible activities took place, i.e. no smelting or crafting or otherwise (Jöns and Heinrich 1997: 162-7).

Evidence on two excavation sites at Kammborg shows postholes for some fifteen structures ranging in size from about five to ten square metres to over one hundred and twenty square metres (Dörfler and Wiethold 2000: 224-5). There is extensive evidence that about five hundred bloomery furnaces were used on these sites over a period of about one hundred and fifty years in the late Roman Iron Age and early Migration Period (Erlenkeuser and Willkomm 1997: 212-5). The bloomery furnaces appear in concentrated areas in the northwestern and southeastern corners of the settlement area (Jöns 1999: 256). Some furnaces appear in clusters of up to twenty, while others appear rather isolated or in groups of two to six (Jöns 1999: 256). Jöns suggests “the preparatory operations of the actual smelting-process took place at Joldelund too”, and there is evidence that there were designated areas for roasting bog iron ore, creating charcoal and storing both charcoal and roasted iron ore (Jöns 1999: 256). Although there is not yet any direct evidence of smelting at these sites during the Viking Period, there is clear evidence of charcoal kiln activity on these sites throughout the Viking Period (Erlenkeuser and Willkomm 1997: 202). There is evidence of

several specific blacksmithing workshops, where the iron blooms produced from smelting procedures would have been worked into wrought iron ingots for further production and/or trade (Jöns 1999: 257). Thus, “the craftspeople were not only responsible for the working of the obtained iron by forging but also for the execution of the smelting-processes” (Jöns 1999: 257). Whereas iron processing at other sites was sometimes an isolated and seasonal activity without associations to agrarian complexes and economic complexes, iron processing at Joldelund was part of a larger economical and social network:

It seems that the iron-working of Joldelund had been run by specialists within a rural community. This is confirmed by the evidence of at least one smithy. The workshop, which had probably been shifted repeatedly, had been built jointly with several typical Roman Iron Age and Migration Period enclosed farmyards comprising aisled long-houses, outbuildings and granaries around a communal ground. (Jöns 1999: 257)

The many scholars involved in investigating the Kammerberg site at Joldelund appear to agree that iron processing at this location had an important role during the Late Roman Iron Age and early Migration Period. It is likely that the production primarily satisfied the needs of the immediate community and of “neighbouring farms or settlements. In accordance with this, the investigation of botanical remains has shown that the iron production was an incorporated part of the settlement structure and that it did not entail significant deforestation in the environs of the site” (Jöns 1999: 258).

The evidence suggests several morphological, semantic and conceptual similarities between the mythological toponym *Járnviðr* and the historical toponyms *Jarnwith*, *Isarnho* and *Jerrishoe*. The first syllable of all of these toponyms refers to “iron”.²³⁸ The elements *–viðr* and *–with* and *–ris* also all refer to a woodland or forested area. The elements *–ho* and *–hoe* may refer to a hill, a burial mound, or perhaps to a promontory or even to a forest, although this last possibility is without clear linguistic explanation. The toponyms, when considered together, suggest a close topographical association between iron and woodlands, elevated hills or mounds, and possibly also promontories. The topography of the area around the Flensburg, Schlei and Eckernförde inlets is and was (during the Migration Period and Viking Age) composed of an extensive and elevated heath to the west and lowlands with

²³⁸ It should be kept in mind that, in comparison to *Jarnwith* and *Isarnho*, it is less certain that the first element of *Jerrishoe* corresponds to ON *járn* (see discussion above on pages 170-177).

many hills and some ancient burial mounds to the east near the coast.²³⁹ These lowlands were also associated with a large tract of dense forest extending roughly from north to south along the edge of the elevated heath. Topographical maps confirm that the area is composed of lowland marshes and pastures with drastic changes in elevation due to hills and the Geest formation to the west. Thus, all the elements of these toponyms correspond to the topography of the area, both modern and medieval.

The “iron” element in these toponyms also clearly corresponds to the processing of bog iron deposits in this area starting, at the latest, during the Pre-Roman Iron Age and continuing into the High Middle Ages. Settlements where bog iron was smelted frequently tend to be associated with areas that provide convenient access to multiple resources (Nørbach 1999: 244). Similarly, the toponymic, literary and historical information from other Old Norse sources reinforces that the processing of bog iron was an important practice in the settlement context or the central-place complex. Although it is only partial, the toponymic and archaeological evidence from the area around the Flensburg, Schlei and Eckernförde inlets also suggests that this concept of a central-place complex applied in these areas and that there were settlements particularly associated with smithing activities in general if not also smelting procedures in particular. These sites include Smedeby, Süderschmedeby, Jerrishoe, Joldelund, Handewitt, Flensburg, Jarnwith and Isarnho, all of which are found within an area that extends roughly one hundred kilometres from north-northwest to south-southwest and about fifteen kilometres from east to west. Concentrations of evidence focus particularly on the area around Jerrishoe, including Handewitt and Flensburg to the north, Süderschmedeby to the west and Joldelund to the east, all within a ten to fifteen kilometre radius around Jerrishoe. All these locations are situated on the eastern edge of the elevated Geest formation with the coastal inlets and major trading ports situated just a bit farther east.

Similarly, as Poole points out, according to *Vsp* 40 and *Gylf* 12 Járnvíðr is a forest located in the region east of the major settlement centre at *Miðgarðr* which is likely located on the *Iðavöllum* plain. This concept of topographic associations within central settlement complexes is clearly important in the mythological tradition. The toponymic and archaeological evidence from the southern region of the Jutland peninsula suggests that the historical “iron-wood” was a forested borderland situated to the east of the Geest, an elevated

²³⁹ For a brief discussion of some of the over 600 burial mounds that were once prominent in the Angeln district, see Heldt (1998: 11-16).

central plain and heath (Crumlin-Pedersen 1997: 33-4; de Vries 1977: s.v. *Járnviðr*; Wegener 1850: 9; Wiechmann 2007: 34). Both the historical and the mythological toponyms operate within a network of topographical associations, particularly between plains and woodlands. These geographical relations appear to correspond to the limited information presented about the relative location of *Járnviðr* and *Miðgarðr* in *Völuspá* and *Gylfaginning*.

This evidence shows that the historical toponyms Jarnwith, Isarnho and Jerrishoe correspond semantically, culturally and topographically to settlement complexes where bog iron was smelted from roughly c. 100 to c. 1100. There is, thus, good reason to believe that the mythological toponym *Járnviðr* also represents a concept of a settlement location where bog iron could be (or once was) processed. Essentially, this toponym may confidently be understood as meaning “woodland with or near bog iron resources.”

2.9 Conclusion

At this point three separate and possibly related conclusions may be stated. First, the toponym *Járnviðr* operates as part of a central-place complex geographically situated in both a historical context (on the southern Jutland peninsula) and in a mythological context (in as much as *Járnviðr* is in the east relative to the settlement known as *Miðgarðr* on/near *Iðavöllr*). Second, the toponym *Járnviðr* exhibits a conceptual association between two important resources in smithing practices, namely bog iron and wood or fuel. This semantic association is parallel to the settlement activities and topographic associations connected to the historical toponyms Jarnwith, Isarnho and Jerrishoe. Third, according to *Vsp* 40 and multiple corroborating sources the *Járnviðr* site is somehow associated with female denizens, or *vice versa*, one of whom is responsible for the creation or fostering, birth or raising, of a specifically destructive type of being *í trollz hami*, “in [the] shape of a troll” (*Vsp* 40.8). In conclusion, the mythological toponym *Járnviðr* is both part of a generally Norse concept of bog iron processing in settlement contexts and it is also part of an eminently local tradition of bog iron smelting and other crafting and trading activities on the southern Jutland peninsula around Hedeby.

2.10 Excursus: what do troll-women have to do with *Járnviðr*?

I will now examine the significance of the *Trollkvenna* 4 stanza in relation to smithing motifs. Before starting, however, I should note that the evidence informing the interpretation of these names is not necessarily conclusive. My examination here is relatively

equivocal as to the various possible interpretations of each name. Where the evidence is more convincing (but still generally speculative) is in the consistent association to iron artefacts and/or crafting actions in most, if not all, of the possible interpretations of several of these names.

There are at least three distinct possibilities for the meaning of Qflugbarða. First, the name may be representative of the general antagonism between the giants and the gods. Second, the name may refer to the typical Scandinavian battle axe. Third, the name may refer to axes that were used as tools.

The first component word of Qflugbarða is the adjective *qflugr*,²⁴⁰ “strong”, “mighty” and the second component, *-barða*, could correspond to the adjectival preterite form of the verb *berja*, “to beat, strike, smite” (Cleasby-Vigfusson 1957: s.v. *berja*). If this is the case, then Qflugbarða may mean “powerfully beaten [i.e. by Þórr]”. This could serve as an appropriate name for a giantess, given Þórr’s propensity for beating these creatures with his hammer. Thus, it is possible that Qflugbarða reflects the general antagonism between the gods and the giants.

Alternatively, *-barða* may be a feminine noun referring to a “bearded axe”, perhaps a battle axe or a tool used as a hammer or club in carpentry or to kill fish (Fritzner 1954: s.v. *barða*; Cleasby-Vigfusson 1957: s.v. *barða*; Motz 1981: 500; de Vries 1977: s.v. *barða*). Andy Orchard suggests Qflugbarða may translate as “mighty striker” (Orchard 2002: 278), but it more literally means something like “Mighty clubbing/hammering axe”, “Mighty axe [used for] clubbing/hammering.” These definitions clearly suggest two types of axe, the battle axe or the axe used as a tool in various contexts. In an explanation in *Skáldskaparmál* of how skalds should refer to weapons, it is made clear that the names of troll-women can be used to refer to axes. Moreover, this explanation also presents a distinction between axes associated with blood or bones and axes associated with wood or trees: *Sverð heita Óðins eldar en øxar kalla menn tröllkvinna heitum ok kenna við blóð eða benjar eða skóg eða við* (Faulkes 1998a: 67), “Swords are called Óðin’s fires, and people call axes by names of troll-women, and refer to them in terms of blood or wounds or forest or tree” (Faulkes 2001a: 118). The sword is a weapon expressly designed to kill humans, and *Skáldskaparmál* gives

²⁴⁰ de Vries suggests that this word is cognate with Old Norse *afl* 1. “strength, power” (1961: s.v. *qflgast*).

only one option as to how it can be poetically named.²⁴¹ The axe, however, can be both a weapon and a tool, depending on how it is designed. The *Skáldskaparmál* guidelines appear to reflect this distinction between the sword and the axe while also reinforcing that the names of troll-women may be used to refer to axes that may be either tools or weapons.

In several contexts, as Lotte Motz points out, “skaldic poets closely link the battle axe with the female trolls” (1981: 497). The term *gýgr*, for instance, is used to refer to a troll-woman (cf. *Vsp* 42.3). *Rímmu-gýgr*, “war-giantess”, is also a circumlocution used to refer to a battle axe (Cleasby-Vigfusson 1957: s.v. *gýgr*). *Gýgr* also appears on two occasions in *Skáldskaparmál*, once as a name for an axe and once as a term referring to the female troll *Gríðr* (Faulkes 1998a: 24, 121; Faulkes 1998b: s.v. *gýgr*; c.f. Fritzner 1954: s.v. *gýgr*; c.f. de Vries 1977: s.v. *gýgr*).

Einar Skúlason’s *Qxarflokkr*, “*flokkr* [poem] of the axe”, presents several different examples of how more of these circumlocutions can work.²⁴² As Kari Ellen Gade points out, Einarr’s poem seems to praise “a gift of more than one weapon” and it is clear “that the weapons were precious commodities encrusted with gold and silver – in one instance (st. 10) Einarr mentions that dragons or serpents were engraved on the blade of the axe” (Gade: in press). Gade also observes that Einarr

draws on Old Norse myth and legend when describing the gold encrustations on the weapons, such as the goddess Freyja weeping tears of gold (sts 1-3, 9) and the giantesses Fenja and Menja grinding gold (sts 3, 6) and he also uses a series of

²⁴¹ The *prosopopeia* of the Anglo-Saxon riddles portrays a curious paradox in the character of swords. Riddle 18 describes the sword as a *wulderlicu wihte* that seems to be just as much a product of the smith as an agent that brings home the *hondeweorc* of smiths in the form of booty after a day of victorious battle (Williamson 1977: ll. 1, 7). The sword is an entity that is shaped in strife: *on gewin sceapen* (Williamson 1977: ll. 1). Its identity is torn in a paradoxical strife between the extremes of a loyal retainer and a treacherous outlaw. The sword is honoured with gifts and a subject of public discourse and praise, as though it were a glorious and triumphant retainer in the meadhall (Williamson 1977: ll. 9-12). In Riddle 76 we also see the sword (or perhaps the scabbard, the sheathed and less threatening garb of the sword) described as *æðelinges eaxlgestealla* (Williamson 1977: ll. 2), a phrase that Davidson compares to the role of Æschere as Hroðgar’s most trusted and intimate advisor in *Beowulf* (Davidson 1962: 156; *Bwf* ll. 1326). But, as Riddle 20 demonstrates, the sword is also an outlaw, hated in wide regions (*fah eom ic wide*) and accursed among weapons: *wæpnum awyrgeð* (Williamson 1977: ll. 16-17). It is the only weapon originally designed, as Davidson points out (1962: 152), not for the hunt, but precisely to kill fellow men.

²⁴² I quote verses from this poem, as well as the prose order and translations, from Kari Ellen Gade’s edition of the text for *SPSMA*. I give my thanks to Gade for providing access to her article, which is currently in press. The full poem may be accessed in *Skj* (1967: A1 477-9) and *SPSMA* (ESk *Øxf^{III}*). Gade’s edition for the *SPSMA*, following Jón Sigurðsson (1848-87: III 364-5), uses the title *Øxarflokkr* to refer to a poem by twelfth-century skald Einarr Skúlason (Gade: in press). This title is applied to a series of verses collected from throughout *Skáldskaparmál*. Gade clarifies that the title is applied for “the sake of convenience”, maintaining that “it must be emphasized that the existence of this poem is dubious at best” (Gade: in press).

ofljóst ‘too transparent’ constructions to refer to the *hnoss* ‘treasure’ he has received (sts 3-5) (*Hnoss* is also the name of Freyja’s daughter). The word order in this poem is unusually convoluted and uncharacteristic of Einarr’s poetry, and the stanzas contain many inverted kennings as well as examples of tmesis. (Gade: in press)

In the last half of stanza six Einarr uses the name of the giantess Fenja to describe the gold inlay on an axe:

*Mjúks (bera mínar øxar
meldr þann við hlyn feldrar)
konungs dýrkar fé (Fenju
fögr hlýr) bragar stýri.
[...]
Fé mjúks konungs dýrkar stýri bragar; fögr hlýr øxar mínar,
feldrar við hlyn, bera þann melldr Fenju.*

[...]

The wealth of the kind king extols the controller of praise [POET]; the fair cheeks of my axe, attached to the shaft, bear that flour of Fenja <giantess> [GOLD]. (Gade: in press)

Einarr’s description clearly refers to an ornately inlaid prestige gift. This axe likely corresponds to something like the silver-inlaid axehead found in a grave at Mammen, Jutland,²⁴³ dating to c. 971 (Hall 2007: 178). This battle axe is a late example of an exceptional tradition in Scandinavian weapons. Before “the ninth century and earlier”, Callmer explains,

general Continental trends in weaponry are well reflected in the Scandinavian material and there are large numbers of imported weapons from Continental workshops. The relatively great importance of the axe as an offensive weapon in Scandinavia, however, shows the relative independence and originality of Scandinavian combat techniques. (2008: 447)

Moreover, Motz also categorizes the name *Qflugbarða* as one of several names for troll-women that are “traceable to words for warlike temperament or warriors’ equipment” (1981: 500). Motz places *Járnsaxa*, “iron (short-)sword”, *Atla*, “fierce, quarrelsome”, and *Ímgerðr*, “fight enclosure”, in this category (1981: 500). While there remain alternative interpretations for many of these names, this evidence testifies to the insular character of the battle axe in early medieval Scandinavia and the skaldic practice of using the names of female trolls or

²⁴³ This is in northern Jutland, between Århus and Aalborg.

giants as kennings for battle axes specifically as well as other types of battle gear and fighting temperaments.

Several of these female trolls have names that are more generally associated with both axes and other tools used in woodworking and metalworking. The name Gríðr is one such example. For instance, shortly following the above citation from *Skáldskaparmál* (Faulkes 1998a: 67), the last stanza of Einar Skúlason's *Qxarflokkr* is quoted:

*Sjá megu rétt, hvé, Ræfils
ríðendr, við brá Gríðar
fjǫrnir fagrt of skornir,
foldviggs, drekar liggja.*

*Megu sjá rétt, hvé drekar, fagrt of skornir, liggja við brá
Gríðar fjǫrnir, Ræfils foldviggs ríðendr.*

They can rightly see how dragons, beautifully engraved, lie near the eyelash of the Gríðr <troll-woman> of the helmet [AXE > AXE-BLADE], riders of the horse of Ræfill's <sea-king's> land [(lit. 'riders of Ræfill's land-horse') SEA > SHIP > SEAFARERS]. (Gade: in press)²⁴⁴

As above, Einarr uses the name Gríðr here to refer to a rather prestigiously engraved battle axe. Similarly, Grettir Ásmundarson also uses the name Gríðr to designate an axe (perhaps not as prestigious as Einar's) via the circumlocution *gunnar Gríði*, "battle-giantess" (ÍF 7 1936: 47; Cleasby-Vigfusson 1957: s.v. *gríðr*, *gunnr*).²⁴⁵ The name Gríðr also appears in the story of Þórr's journey to face the giant Geirrðr and his daughters: *Þórr kom til gistingar til gýgjar þeirar er Gríðr er kǫlluð* (Faulkes 1998a: 24), "Þórr went and lodged for the night with a giantess who is called Gríðr" (Faulkes 2001a: 82).²⁴⁶ In this case, Gríðr helps equip Þórr for battle against the giant Geirrðr (in his smithy-like hall) and his daughters by giving the god her own *meGINGjarðar*, "girdles of might", *járnGREIPR*, "iron-grips", and her *stafr*, "staff", which is named *Gríðarvǫlr*, "Gríðr's pole" (Faulkes 1998a: 25). One might well wonder what a giantess is doing with these items and whether this in itself is suggestive of connections between some giantesses and smithing activities. As it is, we hear nothing else of Gríðr, but Þórr does use all these items in his suggestively smith-like exchange with the giant Geirrðr. The climax of the fight involves Geirrðr throwing a hot iron ingot at Þórr:

²⁴⁴ Citing verse 471, line 4, as evidence, Faulkes suggests that "*fjǫrnir* perhaps means shield rather than helmet; the axe as enemy of the shield is also a more usual image" (1998a: 196 n. "Verse 245/3").

²⁴⁵ A more literal interpretation of *gríðr* would suggest *gunnar gríði* translates as "frantic eagerness of battle", which is a suitable name for a battle axe.

²⁴⁶ Note the use of *gýgr* here to refer to the troll-woman Gríðr (see above).

‘En er Þórr kom í hollina gagnvart Geirrøði þá tók Geirrøðr með tång járnsú glóanda ok kastar at Þór, en Þórr tók í móti með járngreipum ok færir á lopt síuna, en Geirrøðr hljóp undir járnsúlu at forða sér. Þórr kastaði síunni ok laust gognum síluna ok gognum Geirrøð ok gognum vegginn ok svá fyrir útan í jorðina.’ (Faulkes 1998a: 25)

‘And when Þórr came into the hall opposite Geirrøðr then Geirrøðr with tongs took hold of a glowing lump of red-hot iron and threw it at Þórr, but Þórr caught it with [the] iron-grips, and raised into the air the glowing lump, and Geirrøðr ran under an iron pillar to protect himself. Þórr threw the glowing lump and struck it through the pillar and through Geirrøðr and through the wall and thus beyond into the ground outside.’

Similar smithing motifs appear in the tenth-century skald Eilífr Guðrúnarson’s *Pórsdrápa*, which follows this prose paraphrase in *Skáldskaparmál* (see *afl* 22. on pages 59-62 above). Clearly the giantess Gríðr not only has a name that can be used to refer the products of smithing activities (e.g. axes), but she also appears to be closely associated with the paraphernalia appropriate to smithing activities (e.g. iron-grips = tongs? gloves?). This body of evidence suggests associations between names for female trolls or giants (particularly Gríðr) and battle axes as well as, in at least one case, some tools associated with smithing.

It is difficult to determine what exactly *Qflugbarða* might refer to. To reiterate, the name may mean “mighty clubbing/hammering axe”, “mighty axe [used for] clubbing/hammering”, or “powerfully beaten [by Þórr, or someone/something]”. The semantic range of the name appears to suggest some sort of hammering or clubbing surface, perhaps in addition to or instead of a cutting surface. In the verse cited above from *Grettis saga*, Grettir also uses a similar circumlocution, *hamarrqoll*, to refer to the same axe discussed above.²⁴⁷ *Hamarr* tends to mean “hammer” in Old Norse (frequently referring to Þórr’s hammer), but it can also refer to the back of an axe, if the axe in question has pounding surface, e.g. *qxarhamarr*, “the back of an axe” (Cleasby-Vigfusson 1957: s.v. *öx*; Fritzner 1954: s.v. *hamarr*).²⁴⁸ Some battle axes from this period had spikes on the back or

²⁴⁷ Metaphorically *hamarr* can refer to a crag, i.e. the wedge-shape left by an axe (cf. Cleasby-Vigfusson 1957: s.v. *hamarr*; Fritzner 1954: s.v. *hamarr*). Thus, *hamarrqoll* may mean “crag-troll” i.e. another name for a giant or giantess and, in this case, an axe (Cleasby-Vigfusson 1957: s.v. *hamarr*). *LP* suggests that Grettir’s meaning here is rather to refer to “a troll with a (iron) neck”, by which I suppose the “neck” of the axe is meant (*LP* 1931: s.v. *hamarrqoll*).

²⁴⁸ Consider, for instance, the axes and adzes found in the Mastermyr chest, which appear to have been used for ship building and other woodworking (Arwidsson and Berg 1983: 34, Pl. 12 “Axe no. 62”).

points that would be partly destroyed if used as a hammering surface.²⁴⁹ However, the term *q̄xarhamarr* refers to axes that had a blunt end opposite the blade, rather like a splitting wedge. The earliest prose attestation for *q̄xarhamarr* comes from *Grágás* and states that it is considered a homicide (*dráp*) if a man kills another man with an *q̄xarhamarr* (*ONP* 2010: s.v. *q̄xarhamarr*). Although such carpentry and pounding axes appear to have been intended as tools they were also used on occasion (seemingly with some stigma) as weapons (*ONP* 2010: s.v. *q̄xarhamarr*; ÍF 12 1954: 417). The axe that Grettir’s verse describes, for example, is one which Grettir uses to kill a man, and this leads to Grettir’s outlawry.

Despite the fact that such axes could clearly be used as weapons, the notion of an axe having a “hammer” on its back, or a pounding surface, is suggestive of axes that were designed to work as tools. These hammers could be used in conjunction with hammers for working in wood, e.g. for splitting wood and bringing down trees. Similarly, such axes might be used in metalworking and in the kitchen (cf. *ONP* 2010: s.v. *q̄xarhamarr*; Jón and Guðbrandur 1858: 601).²⁵⁰ Some of these more domestic axes have been found in female graves (Pedersen 2008: 205-6). Other axes are associated with ship-building. In the thirteenth-century *Konungs skuggsjá*, for example, the father advises the son that whatever tools might be found in a good ship-building workshop should also be taken with one on board a ship during journeys, including *smiðar q̄xar, scolpa oc nafra, oc q̄ll onur þau tol er til scipsmiðar þarf at hava* (Holm-Olsen 1945: 130), “smith’s axes, turner’s chisels and augers, and all those other tools that are for a ship-builder useful to have.” Considering the reference in *Skáldskaparmál* to kennings for axes that incorporate, on the one hand, allusions to *blood* and bones²⁵¹ and, on the other hand, allusions to wood and trees, *Q̄flugbarða* might belong (at least as far as designated purpose) to the latter group. Both *hamatröll* and

²⁴⁹ The Mammen axe, for instance, has finely wrought decorative patterns on the back of its head (Hall 2007: 178). This was clearly not intended as a pounding surface or as a tool.

²⁵⁰ Tylecote notes that, “after smelting, the bloom would be cut up, first with an axe and later with a chisel to give smaller pieces” (1986: 191; cf. Tylecote 1987: 175). This cutting was also essential to determining the quality of the iron that had been produced (Tylecote 1986:191). Hall shows a small photo of an iron bloom recovered from Øyane, Telemark (Norway), which appears to have had a roughly triangular section removed from it (Hall 2007: 44). The same page features a photo of the tools of the Mastermyr chest, including several hammers and small axes or chisels with a pounding surface. The facing page shows the kitchen equipment and other tools from the Oseberg burial of c. 834, including an axe with pounding surface on a long wooden handle (Hall 2007: 45). Significantly, axe-shaped currency bars of iron were also particular to Scandinavia (Tylecote 1986: 191-2).

²⁵¹ It should also be noted that an axe used in association with preparing game or meat might easily be associated with both bones and blood, yet not necessarily with battle. See, for instance, *Eyrbyggja saga*, where axes featuring a blunt end are used to portion whale meat but also, inappropriately, to strike men in the head (Scott 2003: 271).

Qflugbarða clearly exhibit pounding and beating actions that would be appropriate of an axe with a pounding surface (e.g. a splitting wedge), likely an axe that was used for crafting or for activities apart from battle.

These three possibilities remain open for debate. Qflugbarða may be evocative of the general antagonism between the gods and the giants: “powerfully beaten [by Þórr]”. The name may refer to a battle axe, since there was clearly an established skaldic practice of using the names of troll-women to refer to ornate and prestigious battle axes. The archaeological evidence also testifies to the specifically Scandinavian tradition of fighting with large battle axes. Finally, the semantic meaning of the name Qflugbarða seems particularly appropriate to an axe that was designed with a pounding surface (*øxarhamarr*), i.e. an axe meant as a tool of some sort rather than a weapon or prestige gift. Of course such tools can be used as weapons, and these various interpretations are not necessarily mutually exclusive.²⁵² It is, for example, possible that the beating motif apparent in this name is connected to both Þórr’s mythological hammer-smiting activities as well as to the real-world activity of splitting wood or metal with an axe and/or a hammer. Likewise, Þórr’s beating of female giants might be understood as parallel to using a sledge hammer to strike the hammer-end of a “giantess”, i.e. an axe or wedge tool used to split wood or, possibly, to split consolidated iron blooms into individual currency bars.

Járnglumra consists of the neuter noun *járn*, “iron”, and the verb *glumra*, “to make noise” “to rattle” (Fritzner 1954: s.v. *glumra*; Cleasby-Vigfusson 1957: s.v. *glumra*) or “to cry, roar, reverberate” (de Vries 1977: s.v. *glumra*). So Járnglumra may translate as “Iron-rattle” or “Iron-noise” or “Iron-roar/reverberate.” *LP* suggests “Iron-rattling” (1931: s.v. *Járnglumra*). The verb *glumra* appears in stanza five of *Hákonarmál*:²⁵³ *glumruðu gylfringar / í gotna hausum*, “swords resounded in [the] skulls of men” (*SPSMA* 2001-2010: Eyv *Hák*¹; *Skj.* 1973: BI 57).²⁵⁴ The context here is battle. This quotation also suggests that the first element, *járn*, of the name Járnglumra might be interpreted as referring to a sword, and that the whole name could be interpreted as “the resounding noise of the sword.” Indeed, Motz notes that this may be a true compound, i.e. one component qualifies the other (1981: 503).

²⁵² It should be noted, however, that the battle axes that Einarr Skúlason describes are clearly prestige gifts and not to be confused with the axes that would have been used by average farmers and workers.

²⁵³ *Hákonarmál* is attributed to the tenth-century skald Eyvindr skáldaspillir Finnsson.

²⁵⁴ *ONP* lists attestations for *glumra* that also apply to swords or gold rings, and one attestation describes thunder (*ONP* 2010: s.v. *glumra* vb.).

LP suggests that the giantess name *Glumra* means “the noisy one”, and Motz places both *Glumra* and *Járnglumra* in a category with other names for troll-women that similarly suggest “noise (especially of beasts and battles)” (*LP* 1931: s.v. *Glumra*; Motz 1981: 503).

Elsewhere, the verb *glymja*, which is closely related to *glumra* (de Vries 1977: s.v. *glymja*, *glumra*), is used in several skaldic stanzas to refer to the noise of battle (*LP* 1931: s.v. *glymja*). In particular, in *Skáldskaparmál*, *glymja* refers to the noise of several metal artefacts, including armour as it is put on (Faulkes 1998a: 81 v288.1) and to the rattling of a weathervane on a ship (Faulkes 1998a: 93, v346.4). The noun *glymr* appears in a kenning for the roar of battle (Faulkes 1998a: 67 v225.1) and the noisy-wind (storm) of battle, i.e. the noise of metal in battle (Faulkes 1998a: 67 v222.1). There is, thus, a good deal of evidence to reinforce the interpretation of *Járnglumra* as a circumlocution for “resounding sword” or “roaring of swords”, i.e. the noise of battle.

While these interpretations make sense and have skaldic evidence to support them, there are another three possible interpretations that, although speculative, should nonetheless be noted. First, *Járnglumra* could refer to the noise of pounding iron, i.e. the hammering work of the blacksmith. Certainly this was not a quiet occupation. Second, it is possible that *Járnglumra* might refer to the noise of a hammer pounding nails. The thirteenth-century skaldic poem *Líknarbraut*, “The Way of Grace”, celebrates Christ’s passion (Tate 2007: 228). In stanza sixteen the noise of the hammers nailing Christ to the cross is described: *Glymr varð [heyrðr] hár af hömrum*, “High clanging was heard from hammers” (cf. Tate 2007: 247). Returning again to Eilífr Guðrúnarson’s *Þórsdrápa*, the verb *glymja* is part of a suggestively smith-like description of the noise of Þórr banging his *hlymbél*, “clanging-file”, against stones that are referred to as *Feðju steði*, “anvil-stone of Feðja (a river, i.e. rocks pounded in a river)” (Faulkes 1998a: 27). To my knowledge, these are the only attestations of *glymr*, or any related word, that refers to noise in association with pounding hammers or other smithing tools (*LP* 1931: s.v. *glaumr*, *glumr*, *glymr*, etc.). Thus, while it is plausible that *Járnglumra* might refer explicitly to the noise of a hammer rather than an axe or sword, the evidence for this is limited to only a few examples. In comparison, the body of evidence that relates this name to the noise of swords in battle is much more extensive.

Third, Neil Price presents a thorough examination of the rods or staffs that have been found in several female burials from Viking-age Birka and across all of Scandinavia. Drawing on numerous references to staffs or rods in textual sources, Price identifies these

rods as *seiðstafr*, staffs used in the practice of Norse *seiðr* or sorcery (2002: 175-204).

Several of the metal staffs are quite complex in their construction, showing that the smith who made them had advanced skills in welding, forming geometric shapes and small but detailed wolf-heads and miniature halls. Both textual and archaeological sources show that several of these staffs are made of wood. Staffs made of iron and dating to the Viking Age have also been found throughout Scandinavia (e.g. Birka, Klinta, Fyrkat, Gävle), and the term *járnstafr* appears at least twice in the textual sources, both times in relation to supernatural giants (Price 2002: 177, 181-85, 189, 193).²⁵⁵

Several of the staffs that have been recovered from burials have metal amulet rings attached to them. The staff from Gävle, for instance, has a ring affixed to the end of it with several iron amulets on the ring: it is, essentially, an iron “rattle” (Price 2002: 189). The staffs from Myklebostad, Søreim and Veka also have rings affixed to the handles (2002: 193, 194, 196). Price also examines several similar amulets that are not attached to staffs. These amulets are composed of bronze, silver or iron rings with metal pendants in various shapes that have been strung onto the rings (2002: 204). The shapes of these pendants have been interpreted as referring to various deities: miniature swords (Óðinn), miniature staffs (symbolic of *seiðr*-staffs themselves?), miniature spears or spear-heads (Óðinn) and hammers (Þórr). Price concludes that,

when we have any human context for the staffs, they are found associated with women. Their meaning is of course uncertain, but the link to the various kinds of *seiðr*-staffs is suggestive. This is strengthened by their association with other ‘amulets’ that can be connected to Óðinn. It may also be significant that the staffs never appear on the same ring as Þórr’s hammers – a clear suggestion that they are unconnected with this god. It appears that the staffs [...] may have formed part of the ‘tool-kit’ of Viking Age sorceresses. (Price 2002: 204)²⁵⁶

Might *Járnglumra* refer to such staffs and/or amulets and the rattling noises that they make? Could this name mean “a rattle made of iron” or “the rattling iron [staff/amulet]”? This is possible, but perhaps unlikely given that *járnstafr* is already a testified term referring to these items. I have not found any use of *glumra* or words of similar meaning in association with the textual references to these staffs, but the material objects certainly suggest that they

²⁵⁵ In the summary of *Þórsdrápa* in *SnE*, Gríðr’s staff (*Gríðarvqlr*) which she loans to Þórr, and the smithing and iron motifs associated with it should also be noted here.

²⁵⁶ See also Monica Fjaestad’s article for details on the discovery of the Birka artefacts (1995: 98-106).

would have made noise and that, as a tool of the *seiðkona*, this noise would have been one defining characteristic of the *járnstafr*. As the word *járngerðr* shows, these compounds may refer both to individual females (*Járngerðr* is the name of several women in, for instance, *Landnámabók*) and to metal artefacts (*járngerð* refers to an iron girdle) (Cleasby-Vigfusson 1957: s.v. *járn*). So it is perhaps possible that *Járnglumra* refers to these iron staffs with rattling amulets, and/or to the amulets themselves. The evidence for battle noises is, however, a more dominantly testified association with *glumra* and related verbs.

Ímgerðr and Eisurfála are enigmatic but seem to share some similarities. The first element *ím-* may consist of the neuter noun *ím*, “dust, ashes, embers, soot” (Cleasby-Vigfusson 1957: s.v. *ím*; Motz 1981: 505; de Vries 1977: s.v. *ím*). Gerðr is often the name of a goddess or woman (Cleasby-Vigfusson 1957: s.v. *Gerðr*). Motz points out, however, that Gerðr also has Indo-European roots in words that mean “to enclose”, as in the ON masculine noun *garðr*, “enclosure”, e.g. *Miðgarðr* (1981: 500). *Eisur* could be interpreted as the plural form of the feminine noun *eisa*, “glowing embers, ashes, fire” (Fritzner 1954: s.v. *eisa*; Cleasby-Vigfusson 1974: s.v. *eisa*; Motz 1981: 505; de Vries 1977: s.v. *eisa*). The verb *eisa* means “to rush, shower down embers, proceed dashingly” (Motz 1981: 503). *Fála* may refer to female trolls (Fritzner 1954: s.v. *fála*) as well as giantesses and high-spirited or rude women (Cleasby-Vigfusson 1957: s.v. *fála*). Motz suggests that *fála* also has Indo-European roots in verbs meaning “to cover”, hence ON *fela*, “to conceal” (1981: 500). Motz categorizes Eisurfála as one of several names that suggest speed or movement, including Brana, “to rush, advance with the speed of fire”, and Geysa, “to rush furiously, gush” (1981: 503). In this category Motz also situates Munnriða and Myrkriða, which have the verb *riða*, “to ride”, as their second components. Drawing on the alternative meaning of *fála*, “to conceal”, Motz also categorizes Eisurfála with Ímgerðr as names that “show giantesses as secret beings, hidden from the view of men by cowls, hoods, or the walls and fences of their dwelling place” (1981: 500). Ímgerðr, if interpreted as “enclosure of ashes/embers”, might be a reference to a forge or furnace. Similarly, Eisurfála, if interpreted as “concealing of embers/fire”, could also suggest a forge or furnace. There is, however, no other evidence to reinforce this interpretation conclusively and it is speculative to make such suggestions. Unlike the poetic categories for axe, sword, shield, etc. in *Skáldskaparmál*, there are no such categories for furnaces and forges.

Áma may be related to the adjective *ámur*, “black, loathsome” (Motz 1981: 503).²⁵⁷ Margerðr²⁵⁸ and Atla²⁵⁹ do not appear to contain any elements related to metalworking, metal or fire (Fritzner 1954: s.v. *mara*; Cleasby-Vigfusson 1957: s.v. *mara*; de Vries 1977: s.v. *atla*).

Leikn is used as a name for a female ogre, troll or sorceress and seems to share a connection to *leikr*, a masculine noun meaning “game, spell” (Cleasby-Vigfusson 1957: s.v. *leikr*; de Vries 1977: s.v. *leikr*). Motz also suggests the feminine noun *leika*, “playmate” (1981: 504).

Munnharpa translates as “mouth-harp”, i.e. a cramp in the mouth, and Munnriða may translate as “mouth-ride” or “mouth-cold-fever” (Fritzner 1954: s.v. *ríða*; Cleasby-Vigfusson 1957: s.v. *ríða*; Motz 1981: 502-3).

To summarize, of the eleven names presented in this stanza of *Trollkvenna* names, five contain some element that is suggestive of fires, metal or possibly metalworking. Qflugbarða is connected to a skaldic tradition of using female troll-names to refer to axes. The explanation of this practice in *Skáldskaparmál* is particularly suggestive of connections to forests in general: “giantess-name of the forest” appears to have been a valid formula for making a kenning for an axe. Járnvíðja is also suggestive of smithing motifs, and its presence in this list is both enigmatic and suggestive. The connection between Járnvíðr and the giantesses who live in this wood may be apparent in the name Qflugbarða: axes were used for cutting down trees and splitting wood, and that wood was in turn used to power furnaces and forges (i.e. Eisurfála, Ímgerðr?). This remains speculative. This evidence does, however, clearly show that a small concentration of *Trollkvenna* names exhibit affinities to metal artefacts and, possibly, metalworking or activities related to woodworking and general crafting.

The other stanzas of *Trollkvenna* names from *Skáldskaparmál* do not appear to contain such a concentration of references to metals, features of burning or noises in direct connection to metals and/or burning. Hyrrokkin (= *hyrr* m. “embers of fire” + *rokinn* from *rjúka* v. “to emit smoke or steam”) and Járnsaxa (= *járn* n. “iron” + *sax* n. “short, heavy

²⁵⁷ Cleasby-Vigfusson suggests that *áma* could refer to red and inflamed skin due to streptococcus bacterial infection, a condition now known as *Erysipelas* (Cleasby-Vigfusson 1957: s.v. *áma*).

²⁵⁸ Motz suggests that *Margerðr* may mean “nightmare”, or the first element *mar-* may be related to the masculine noun *marr*, “sea” (1981: 501, 504).

²⁵⁹ Motz suggests that *Atla* may be related to *atall*, a. “fierce, quarrelsome” (1981: 500).

sword” or *saxa* v. “to chop, hack”) are the only two other *Trollkvenna* names that stand out as being suggestive of iron objects and/or metalworking phenomena (Fritzner 1954: s.v. *hyrr*, *rjúka*; Cleasby-Vigfusson 1957: s.v. *hyrr*, *rjúka*, *saxa*). This concentration in *Trollkvenna* 4 may suggest that Járnvíðja is part of a group of such names that have some significance in relation to metal objects and possibly smelting or forging phenomena. This evidence is, however, not sufficient to stand on its own.

It is also clear, however, that Járnvíðja and Járnvíðjur are somehow connected to the toponym Járnvíðr, and that this toponym is strongly associated with bog iron ore and smelting activities. There may be a larger network of associations here. The name Járnvíðja is itself also one of these names and may also refer to an axe,²⁶⁰ though it is unclear whether Járn could be interpreted as the name of a giantess according to the poetic formula outlined in *Skáldskaparmál*. Several of these names are part of a poetic tradition of describing iron axes by using the names of female trolls or giants. Similarly, other names for giantesses can refer to swords, the noise of swords, and other objects made of iron. This poetic tradition is also closely linked to a variety of narrative contexts in which various tools or weapons and pieces of metal are mentioned (e.g. axes, Þórr’s hammer, “iron-grips”, the exchange of the iron ingot in *Þórdrápa*, possibly iron-staffs). Thus, Qflugbarða likely refers to an axe and this name is part of a poetic tradition that is strongly associated with metalworking motifs and/or products. The giantesses of the Járnvíðr, these Járnvíðjur or “Ironwoodlings”, could be a group of circumlocutions referring to tools, weapons and activities associated with work and life in and near the “Iron-woods”, i.e. the forests near bog iron deposits where workshop settlements produced iron objects.

As one final point, it is worth reiterating that ferrous metalworking was different from non-ferrous metalworking in early medieval Scandinavia. Iron was the only metal that was refined locally from ore in the earth and transformed into finished artefacts and tools. Thus, it is valid to point out that iron tools (axes, hammers, knives, adzes, chisels, etc.), weapons (axes, swords, spears, arrows) and prestige or cultic objects (amulets, pendants, *seiðstafir*) were produced for many generations in relation to local ore deposits, topographical concepts, activities, occupations, trading relationships and stories.

²⁶⁰ An axe is basically a combination of an iron head with a wooden handle; hence iron (*járn*) and wood (*viðr*) are the constituent elements of axes.

Chapter 3: Smithing motifs in *Völundarkviða*

The focus of this chapter is an examination of smithing motifs in *Völundarkviða*. First I will examine the following features:

- the broadly artisanal and more specifically metalworking actions.
- the metallic and non-metallic artefacts that are described.
- the significance of these actions and artefacts and how descriptions of artisanal actions and relationships change over the course of the narrative.
- the significance of Völundr's artisanal revenge in relation to Germanic customs.
- the possible analogues for the transformation of skulls into drinking vessels.

Second, I will examine the poem as a performance of spatial, networked relations, once again drawing upon the theory of central-place complexes as Stefan Brink has applied it to studies of pre-historic Scandinavian settlements.

There have been many studies of the parallels, analogies and possible sources for the motifs that appear in *Völundarkviða*. Comparisons have been drawn between the motifs in this poem and motifs appearing in eighteenth-century and nineteenth-century accounts of shamanic initiation narratives in Siberia²⁶¹ and multiple early medieval and classical sources in which skulls are used as drinking vessels. In due course I will note some of these comparisons, and in some cases I will also note the arguments and interpretations of *Völundarkviða* that have been based upon such comparative approaches. For the most part, however, my aim in this chapter is not to offer another comparative study of the poem and its motifs. My primary aim is to examine the artisanal motifs of *Völundarkviða* and contextualize these motifs with respect to, on the one hand, the spatial concepts and relations that are performed by the poem itself and, on the other hand, the early medieval Scandinavian context from which this narrative comes.

²⁶¹ According to Eliade's paraphrase (1978: 83), these dream-narratives involve a spirit journey in which the initiate meets a supernatural smith figure who re-forges the initiate's skull using a special anvil, or reassembles the initiate's body using iron either in place of bone or as a connective agent between bones. These narratives involve a consistent sequence of events: 1) spiritual journey to the smith, 2) dismemberment, 3) re-integration of the body, sometimes using metal components, 4) spiritual return journey with confirmed status as shaman. The comparison of this shamanic narrative to *Völundarkviða* has led to the Yakut proverb "the smith and the shaman come from the same nest" being applied to Völundr (Dronke 1997: 257; Eliade 1978: 83). This is categorically inaccurate for several reasons (cf. Einarson 2009: 221-4; cf. Kehoe 2000). See also Kaaren Grimstad's interpretation of *Völundarkviða* as a profane and no longer understood version of a once sacral initiation rite for young warriors (1983: 203). See the discussion in the Introduction to this dissertation (page 28 above)

3.1 Broadly artisanal motifs

Before examining the more predominantly metal-oriented motifs of *Völundarkviða*, it is important to note that one of the earliest artisanal motifs in the poem is the swan-maidens spinning fine linen. In stanza one, the swan-maidens arrive on the shore of Úlfsiár and *þær á sævar strönd settuz at hvílaz, / drósir suðrænar, dýrt lín spunno* (1.5-8), “there on the shore of the lake [they] sat to rest themselves, southern ladies, [they] spun precious linen.” Weaving motifs appear in several Old Norse texts, frequently in association with overtones of the supernatural and fate (Bek-Pedersen 2009: 23-39).²⁶² Spinning may or may not be understood as a distinct activity from weaving in this instance.²⁶³

As the primary focus of the current study is smithing motifs, I will not go into the details of weaving technology in medieval Scandinavia. It suffices to briefly point out that activities in both metalworking and weaving/spinning took place simultaneously at many of the settlements and workshop communities in early medieval Scandinavia. Sigtuna, for instance, was the location of the first coin mint in Sweden (c. 995; cf. Ross 2002: 174). This mint was located in the antechamber of a building on a plot that contained four other buildings. One of the other buildings on this plot was clearly used for weaving or tapestry work (Ros 2002: 167, 173-4). This plot was likely owned by the crown (Ros 2002: 174). Bejsebakken is a settlement on the Limfjorden waterway in northern Jutland with evidence of forty-two longhouses and three-hundred and fifty pit houses, dating to c. 400-800 AD (Nielsen 2002: 187, 198, 200). Bejsebakken was likely a permanent settlement that was periodically visited by merchants and craftspeople (Nielsen 2002: 197). “Weaving weights and spinning whirles” have been found in the pit houses, demonstrating “that the pit houses were used for textile production” (Nielsen 2002: 197). A few of these pit houses differ from the others and were clearly used as smithing workshops (Nielsen 2002: 204). Near Bejsebakken, the Viking-age settlement at Sebbesund²⁶⁴ also shows evidence of both textile work and smithing (Nielsen 2008: 135-6). The site at Åhus in southern Sweden was also

²⁶² In her article on the Norns for the *Medieval Scandinavia: an encyclopedia*, Else Mundal suggests that the Norns represent the highest power in the Old Norse cosmos and that their fate-making activities are magical actions referred to either as the spinning of a thread (*Regnismál* 13, *Helgakviða Hundingsbana* 1) or as making a mark in wood (*Völuspá* 20) (Mundal 1993: 625).

²⁶³ As noted above, Neil Price offers a recent examination of several metals *seiðr*-staffs that have been found in female burials (Price 2002: 182-200). These staffs may have also been significant in relation to spinning. Eldar Heide, for example, has offered a brief, speculative study of the evidence of spinning in Norse and Sámi contexts as part of his argument that these activities may have held significance in relation to *seiðr* rituals (2006: 164-169).

²⁶⁴ Sebbesund is near Nibe, also on the Limfjorden waterway.

located on the shore of a waterway and exhibits activities in both metalworking and fine textiles (Callmer 2002: 125). Several of the crafts at Åhus were performed in close collaboration. Comb-making, for example, required close coordination between highly skilled carving and fine smithing work (Callmer 2002: 127, 142, 155).²⁶⁵ Åhus differs from other sites, however, in that it shows no evidence of a defined or distinct central hall or cult space. The plots are fairly regular and appear to have accommodated groups (possibly families) of five to ten people (Callmer 2002: 125, 127).

The evidence of multiple types of crafting at these sites is not exceptional.²⁶⁶ Metalworking did not take place in an artisanal vacuum in medieval Scandinavia. Similarly, Völundr and his brothers form family units with their wives and they live together on the shores of Úlfsiár where these swan-maidens spin fine linens and Völundr later forges seven hundred rings.

3.2 Specifically metalworking actions, artefacts and spaces

The first arguably artisanal motif that appears in *Völundarkviða* is the proper name of one of Völundr's brothers. The name Slagfiðr appears only in *Völundarkviða* (Dronke 1997: 327) and it is the only name in the poem that is particularly suggestive of smithing motifs.²⁶⁷ The first element, *slag-*, "is not a personal-name component elsewhere in Norse" (Dronke 1997: 328).²⁶⁸ It appears to resemble Old Norse *slag*, a neuter noun meaning "a blow, stroke" (Cleasby-Vigfusson 1957: s.v. *slag*).

Several scholars suggest that this first element, *slag-*, shares close affinities with Völundr's own artisanal activities (Dronke 1997: 327; Bugge qtd. in Jón Helgason 1962: 28).

²⁶⁵ Callmer also points out that several prestige artefacts may have necessitated the collaborative work of several smiths and craftspeople (2003: 347-9).

²⁶⁶ Consider also Ribe (Hall 2007: 23), Hedeby (Müller-Wille 1993: 275), Vikhögsvägen at Löddeköpinge (Ohlsson 1976: 95-6, 108-10) and Kaupang (Skre 2008: 115).

²⁶⁷ The name Völundr also suggests an association to skilled crafting. In this case, however, it seems the literal meaning of the name may be distinct from the connotations the name later became associated with. The original forms of the name may have meant something like "Battle Brave" (cf. Dronke 1997: 328; Nedoma 1988: 58-70). In later Old Norse and Old Icelandic sources, the name was also used as an appellative, meaning "a master smith, a great artist", but this meaning is distinct from the actual semantic roots of the name. This appellative usage persists into Modern Icelandic (Cleasby-Vigfusson 1957: s.v. *völundr*; Fritzner 1954: s.v. *völundr*). It is also significant that in his ninth-century Old English translation of Boethius King Alfred used Völundr's name (*Weland* in Old English) to translate the name of the hero Fabricus. Ellis Davidson suggests that Alfred's "mind seems to have jumped from the hero's name to the Latin word *faber*, 'smith', and from there again to the name which for him stood for the most famous of smiths, Weland" (1958: 145). This may suggest an earlier date for the close association between Völundr/Weland the smith and the appellative use *völundr*, "a master smith, a great artist", than the extant Old Icelandic examples. At any rate, apart from Slagfiðr and Völundr, the personal names in *Völundarkviða* do not appear to share any direct semantic connection to artisanal motifs.

²⁶⁸ Jón Helgason also notes the unique nature of the name *Slagfiðr* (1962: 28).

The verb *slá*, for instance, appears four times in *Völundarkviða*, always referring to Völundr's metalworking, and the primary sense of this verb is "to strike, beat" (Cleasby-Vigfusson 1957: s.v. *slá*; La Farge and Tucker 1992: s.v. *slá*; Fritzner 1954: s.v. *slá*). The verb *slá* is used in numerous artisanal contexts elsewhere, predominantly in relation to metalworking and blacksmithing: for example, *slá vef*, "to strike the loom", *slá sverð*, "to strike a sword", *slá þvertré af silfri í hofit*, "to forge a cross-beam out of silver in the temple", *slá saum*, "to forge nails", *slá herspora*, "to forge war-spurs/caltrops",²⁶⁹ *sleginn fram broddr ferstrendr*, "forged into a four-edged point",²⁷⁰ *slá öxar eða gref*, "to forge axes or digging tools" (Cleasby-Vigfusson 1957: s.v. *slá*). La Farge and Tucker and Fritzner suggest that the meaning of *slá* that pertains to Völundr's activities is more specifically "to hammer, forge" (La Farge and Tucker 1992: s.v. *slá*; Fritzner 1954: s.v. *slá* v. 10). In stanza 20 of this poem, *slá* is associated explicitly with the use of a hammer. In *Völundarkviða*, *slá* is also associated with the verbs *gøra*, "to make", and *lykja*, "to join the ends of, to coil", as well as the production of artefacts such as *lindbaugar*,²⁷¹ "rings", *vél*, "ingenious devices", and *brióstkringlar*, "brooches". Therefore, in this context it is likely that this first component of Slagfiðr's name is "appropriate for Völundr himself" (Dronke 1997: 327). Sophus Bugge takes this one step further, suggesting that Slagfiðr, like his brother Völundr, is also a skilled smith (qtd. in Jón 1962: 28). While the poem provides no evidence to support or refute Bugge's suggestion, hammering and forging are thematically important metalworking activities in *Völundarkviða*. The first element of the name Slagfiðr may be connected to these activities.

The second element of this name survives in two forms: *Slagfiðr* and *Slagfinnr*. In the *Codex Regius*, the second element of this name appears as *-fiðr* in the three attestations in the

²⁶⁹ cf. Cleasby-Vigfusson (1957: s.v. *her* B.), Fritzner (1954: s.v. *herspori*).

²⁷⁰ From *Egils saga*:

Þórólfr var svá búinn: hann hafði skjöld víðan ok þykkvan, hjálm á hofði allsterkan, gyrðr sverði því, er hann kallaði Lang, mikit vápn ok gott; kesju hafði hann í hendi; fjöðrin var tveggja álna löng ok sleginn fram broddr ferstrendr, en upp var fjöðrin breið, falrinn bæði langr ok digr, skaptit var eigi hæra en taka mátti hendi til fals ok furðuliga digrt; járnsteinn var í falnum ok skaptit allt járnvaft; þau spjót váru kolluð brynþvarar. (ÍF 2 1988: 136)

Þórólfr was so equipped: he had a shield broad and thick, a tough helmet on his head, girded with a sword, which he called Lang, a great weapon and fine; a thrusting spear he had in hand; the blade was two ells long and forged into a four-edged point, but above the blade was broad, the socket both long and thick, the shaft was not higher than could be grasped with hand at the socket and wonderfully thick; an iron spike was in the socket and the shaft was entirely wound around with iron; those spears were called mail-coat-piercers.

²⁷¹ It is clear these are made from *gull rautt*, "red gold."

prose prelude and the two additional attestations in stanza four. In comparison, *-finnr* appears in the only extant attestation of the name from the prose prelude in AM 748 I 4¹⁰ (Neckel and Kuhn 1962: 116). *Finnr* clearly corresponds to the masculine noun used to refer to the Sámi in the prose prelude to the poem (as elsewhere in Old Norse sources). *Fiðr* likely represents a variant form of *finnr* that also refers to the Sámi (Fritzner 1954: s.v. *fiðr*).²⁷² It is therefore possible that these two variants are not distinct in meaning. Andy Orchard focuses exclusively on this interpretation, suggesting that the name *Slagfinnr* is evocative of both “smith-craft and the magical abilities traditionally assigned to the Finns or Lapps” (2002: 330). Thus, as Orchard suggests, the name “appears to combine elements of the legendary activities of Völundr himself.”

An alternative interpretation should briefly be examined. Dronke hypothesizes that if *Slagfiðr* can be related to Old High German *slegifedera*, “a gloss for *penna*, ‘pinion’ (‘the feather that strikes the air’), we could take *-fiðr* as adjectival, from *fjǫðr*, ‘feather’, so, ‘having feathers, wings’” (1997: 327).²⁷³ The noun *fiðr* or *fiðri* (plural) tends to refer to “plumage” (in usages referring to the feathers of a bed or arrow fletching, for instance), whereas *fjǫðr* tends to refer to the “quill” or base of the feather (Cleasby and Vigfusson 1957: s.v. *fiðr*, *fjǫðr*). *Fiðri* is neuter. *Fjǫðr* is feminine. The adjectival form *fiðr* (which Dronke hypothesizes) conforms to the pattern for strong masculine adjectives, but this agrees with neither the neuter nor the feminine noun forms *fiðri* and *fjǫðr*. Furthermore, the two components of a Germanic dithematic name do not need to share any particular grammatical relationship or syntax, much less a collective semantic relationship. As I have noted before, Germanic dithematic names on the whole tend to have two distinct elements, each signifying on its own. The exceptions to this rule are toponyms and some of the names of mythological creatures, like the list of *Trollkvenna* names examined in Chapter 2. *Slagfiðr* is neither a toponym, nor the name of a mythological creature. Therefore it is best to interpret *Slagfiðr* as two independent nouns, i.e. *slag*, “smith’s hammer stroke”, and *fiðr*, “Sámi”, without any combined unit of meaning or syntactic agreement. Interpreting *fiðr* as “feathers, plumage” is grammatically problematic, and it seems more likely that this is a variant spelling of *Finnr*, “Sámi.”

²⁷² E. V. Gordon notes the phonological change whereby *-nn* followed by *-r* became *-ð*, as in *maðr* with dat. *manni* and dat. *ǫðrum* with nom. *annarr* (Gordon 1971: 280).

²⁷³ Jón Helgason explains much the same hypothesis, but concludes that support is lacking for it (1962: 28).

3.3 Völundr's independent creations

Völundarkviða contains several references to two types of metal artefacts (seven hundred rings and one sword) that were made by Völundr prior to his capture by Níðuðr. The first of these references appears in stanza five shortly after the swan-maidens have departed along with Völundr's two brothers:

*Enn einn Völundr sat í Úlfðqlom;
hann sló gull rautt við gimfastan,^[274]
lucþi hann alla lindbauga vel; (5.1-6)*

But alone Völundr sat in Úlfðalir; he forged red gold round
[the] firmly-held gem, he joined the ends of all rings well;

These rings appear again in stanzas seven and eight, when Níðuðr's men enter Völundr's hall:

*sá þeir á bast bauga dregna,
siau hundruð allra, er sá seggr átti.
Oc þeir af tóco, oc þeir á léto,
fyr einn útan, er þeir af léto. (7.5-8.4)*

They saw upon a bast rope rings strung, seven hundred in all,
which that man [Völundr] owned.

And they took them off, and put them on, except for one,
which they kept off.

The rings appear again in stanza ten, when Völundr counts them and notices that one is missing (the one which Níðuðr's men kept):

*Sat á berfialli, bauga talði,
álfa lióði, eins sacnaði;
hugði hann, at hefði Hlqðvés dóttir,
alvitr unga, væri hon aptr komin. (10.1-8)*

He sat on the bear-skin, counted rings, countryman of elves,
one he missed; he thought that [she] had [it], Hlqðvér's
daughter,²⁷⁵ [that] young alien being, [he thought that] she had
come back again.

Stanza seventeen and the prose preceding it make particular mention of the king taking two of Völundr's creations, a ring (presumably the one which Níðuðr's men kept in stanza eight) and Völundr's sword (which has not been mentioned in the poem prior to this instance):

²⁷⁴ While the *Codex Regius* MS. actually reads *gimfastan*, Neckel and Kuhn, along with many other scholars, emend this to *gimfastan* or *gim fastan* (Neckel and Kuhn 1962: 117; cf. Jón 1962: 59). As I discuss in more detail below, Dronke asserts that accent in the manuscript "is not necessarily significant" (1997: 308). I follow McKinnell's suggestion for translating the phrase *við gim fastan* (McKinnell 1990: 2; McKinnell 2003: 331).

²⁷⁵ This is Völundr's wife.

Níðuðr konungr gaf dóttur sinni, Bøðvildi, gullhring, þann er hann tók af bastino at Vølundar. Enn hann síálfir bar sverðit, er Vølundr átti. Enn drótning qvað:

*‘Tenn hánum teygjaz, er hánum er téð sverð
oc hann Bøðvildar baug um þeccir;
(Neckel and Kuhn 1962: 119; 17.1-4)*

King Níðuðr gave to his daughter, Bøðvildr, a gold ring, that which he took off the bast rope at Vølundr’s [house]. And he himself wore the sword, which Vølundr owned. But the queen said:

‘His teeth lunge themselves out, when to him sword is displayed, and he recognizes Bøðvildr’s ring.’

In stanza eighteen Vølundr speaks about both of his previous creations, which have now been taken from him:

*‘Scínn Níðaði sverð á linda,
þat er ec hvesta, sem ec hagast kunna,
oc ec herðac, sem mér hægst þótti;
sá er mér, fránn mækir, æfiarri borinn,
sécca ec þann Vølundr til smiðio borinn. (18.1-10)*

‘A sword shines upon [the] belt of Níðuðr, that [sword] which I sharpened, as I most skillfully knew how, and I hardened,²⁷⁶ as seemed to me most suitable; that has from me, glittering sword, forever been taken away,²⁷⁷ I do not see that brought to Vølundr in [the] smithy.’

Finally, in stanzas twenty-six and twenty-seven, Bøðvildr brings the ring back to Vølundr because it has been broken and needs to be repaired:

*Þá nam Bøðvildr
baugi at hrósa, er brotið hafði:
‘Þoriga ec at segia, nema þér einom.’*

*Vølundr qvað:
‘Ec bæti svá brest á gulli,
at feðr þínom fegri þiccir,
oc mæðr þinni miclo betri,
oc síálfri þér at sama hófi.’ (26-27)*

Then Bøðvildr began to praise [the] ring, which had broken: ‘I dare not tell it, except to you [i.e. Vølundr] alone.’

Vølundr said: ‘I will repair so [the] break in [the] gold, that to your father [it] will seem more beautiful, and to your mother much better, and to you yourself just as good as before.’

²⁷⁶ The same verb, *herða*, is used in *afl* 36 (see pages 72-73 above).

²⁷⁷ This translation follows La Farge and Tucker (1992: 59)

3.3-a Interpreting the rings

There are a few features about these rings that are clearly understood. According to stanza five, the material which Völundr uses to make these rings is gold, particularly *gull rautt*, “red gold”, which is a type of gold that commonly (if not exclusively) appears in Germanic legendary narratives (La Farge and Tucker 1992: s.v. *gull*).²⁷⁸ Beyond this, however, interpreting these lines becomes difficult. As Jón Helgason points out, half-lines one through four of stanza five *segir frá smíðum Völundar, en er ekki fullljóst* (1962: 59), “give an account of Völundr’s constructions, but it is not totally clear.” In other words, this seems to be a remarkably precise description, but some of the terminology remains unclear. This difficulty is mostly because *gimfastr* and *lindbaugr* are *hapax legomena*.

The term *lindbaugr* refers to the type of artefact produced. The second component of this compound is clearly the masculine noun *baugr*, “ring”, and the context further reinforces that Völundr is making rings. We know, for instance, that Völundr makes some seven hundred²⁷⁹ or more *baugar*, “rings”, at this point in the narrative. We also know that Völundr has these seven hundred “rings strung upon a bast rope”, *á bast bauga dregna* (7.5-6). The term *lindbaugr* appears to describe all these rings as one general type or design of ring. Moreover, Völundr has to count them all before he learns that one is missing,²⁸⁰ which may imply that the rings are more or less the same in appearance and construction. So the context and the second element of *lindbaugr* reinforce that a particular type of ring is being made in great number and they are strung upon a bast rope.

The first component of *lindbaugr* is, however, enigmatic. *Lind-* has been interpreted in at least two ways. First, Dronke and McKinnell suggest that *lind* refers to a rope made from the bark of a tree, i.e. a “linden-bast cord” (Dronke 1997: 308; cf. McKinnell 2001a: 331). Second, La Farge and Tucker and Hans Kuhn suggest that the first element *lind-* is

²⁷⁸ This “red gold” is possibly an alloy that includes a particular ratio of copper and silver, thereby producing a slight red coloration (Cretu and van der Lingen 1999: 119, Fig. 9).

²⁷⁹ Jón Helgason also points out that this count, *sjö hundruð*, more accurately refers to the “old hundred”, i.e. = one hundred and twenty, and therefore a total of eight hundred and forty rings (1962: 60).

²⁸⁰ Níðuðr’s men take all the rings off the rope, and put them all back on, except for one, which they take back to the king. Níðuðr then gives this ring to his daughter, Bǫðvildr. It seems likely that Völundr associates this missing ring with his wife in stanza ten, when he notices a missing ring: *hugði hann, at hefði Hlǫðvés dóttir, / alvitr unga, væri hon aptr komin* (10.5-8), “he thought that [she] had [it], Hlǫðvér’s daughter, strange young creature, [he thought that] she had come back again.” It is for this reason, and not necessarily for anything physically distinct about it, that he recognizes this ring in particular (*hann Bǫðvildar baug um þeccir*, “he recognizes Bǫðvildr’s ring”) and associates it with his wife (*Nú berr Bǫðvildr brúðar minnar – bíðca ec þess bót – bauga rauða*, “Now Bǫðvildr is wearing – I shall know no redress for this – my bride’s red ring”) (17.3-4, 19.1-4; Dronke 1997: 248).

more closely related to *linnr* or *linni*, meaning “snake” or “serpent” (La Farge and Tucker 1992: s.v. *lindbaugr*; Neckel 1968: 129).

The interpretation suggested by Dronke and McKinnell draws upon the context of these rings. Dronke presents an interpretation that “relates to the smith’s procedure: he now closes the ring’s metal circle to hang on the cord. So *lindbaugar* would mean ‘linden-rings’, ‘rings for the linden(-bast) cord’” (1997: 308). Dronke notes that *lindi*, “belt”, which appears in 18.2 of *Völundarkviða*, is “thought to be so called from the plaited linden-bast of which it was made.”²⁸¹ Dronke also notes, however, that *lind* is “not elsewhere recorded in ON” as meaning “linden-bast” (1997: 308). This lack of evidence is problematic, but McKinnell’s examination of the role of Old English vocabulary within the poem reinforces that *lindbaugr*, although “unique in ON”, means something like “rings threaded on a bark-fibre rope” (McKinnell 2001a: 331). This interpretation is both plausible and attractive.

La Farge and Tucker, however, note another possibility for interpreting the first syllable of *lindbaugr*. They cite Hans Kuhn’s suggestion that *lind-* may be related to Old High German *lint* “snake, dragon” (La Farge and Tucker 1992: s.v. *lindbaugr*; Neckel 1968: 129). According to this interpretation, the proper Old Norse form would be *linn-baugr*, “serpentine arm-ring (i.e. arm-ring coiled like a snake)” or perhaps “arm-ring shaped like a serpent biting its tail” (La Farge and Tucker 1992: s.v. *lindbaugr*). The ample archaeological evidence of rings terminating in snake-heads or dragon-heads could support this interpretation (Andersson 1995: 69-82; Magnus 1976: 112). Dronke points out, however, that Old Norse *linnr*, “serpent”, “is not elsewhere used descriptively in a ring kenning (e.g. ‘ring with a snake depicted on it’ or ‘ring like a snake’), but only as a substitute for *baugr* itself (so *armlinnr* is ‘snake of the arm’, i.e. ‘bracelet’). Jón Helgason also notes that the most prevalent explanation for *lindbaugar* has been to interpret it somehow as meaning *linnbaugar*, “serpent-rings”, despite the fact that the manuscript clearly has *lind-*, not *linnr* or *linni* (Jón 1962: 59). It is difficult to explain how a scribe would misinterpret *linnr* or *linni* and write instead the unique ON compound *lindbaugr*. McKinnell’s explanation, “rings threaded on a bark-fibre rope”, therefore remains the most cogent.

This does not, however, provide much information as to what exactly these *lindbaugar* are. A closer examination of the verbs that describe how *Völundr* makes these

²⁸¹ If, as Dronke suggests, *lind-* is related to the ON *lindi*, “belt”, then another possible translation should be acknowledged. *Lindbaugr* could more literally mean “belt-ring” or “ring strung upon a belt.”

rings may present better information. These verbs are *slá*, “to hammer, forge”, and *lykja*, “to join the ends of, to coil.”²⁸² As noted above, *slá* has the specific sense of “to hammer, forge” in *Völundarkviða* (La Farge and Tucker 1992: s.v. *slá*).

In most attestations, the verb *lykja* means “to lock, shut in, enclose, join”, and at least one attestation of the verb refers to a *kista*, “chest”, perhaps with metal locks. This usage in *Völundarkviða* 5.5 is the only attestation that explicitly refers to metalworking, and the sense appears to be “to coil” or “to weld”, i.e. to join the two ends of a ring together (Cleasby-Vigfusson 1957: s.v. *lykja*; LP 1931: *lykja*; Fritzner 1954: s.v. *lykja* v. 1.). The verb *lykja* suggests that rings of metal are being coiled into spirals or welded into complete circles. These two processes are possibly distinct in terms of the skills they entail: shaping gold into spirals does not require many of the skills used in welding or casting rings into seamless circles.

A determining factor here is that the rings are clearly threaded onto a rope. As Dronke notes, this appears to be part of *Völundr*’s procedure for finishing the rings and storing or displaying them (1997: 308). It is a necessary feature of the rings that they hang or otherwise remain securely threaded on a rope. If the rings are neck-rings or arm-rings with a permanently open space (Fritzner: 1954: s.v. *hals* m.; Magnus 1976: 112), then they might not stay on the rope. The rings should therefore be closed (either by a seamless weld, or by a flush joint) rather than being permanently *mótlauss*, “without joint” (Cleasby-Vigfusson 1957: s.v. *mót*).

If *lykja* refers to the finishing of some sort of a relatively flush joint without welding, then three possibilities should be noted.²⁸³ First, rings could be bent shut and again re-opened, if they are thin enough and if the metal is malleable enough to sustain such bending. Gold is a remarkably malleable metal.²⁸⁴ Such rings might also be securely shut with a loop and

²⁸² La Farge and Tucker: *lykia*, “to join the ends of”, “to coil” (Vkv 5) 2. “to enclose, clasp” (1992: s.v. *lykja*). See also Fritzner (1954: s.v. *lykja* v.).

²⁸³ The Historiska Museet in Stockholm has a large collection of rings from pre-historic Scandinavia on display and available for viewing through their online catalogue (“guld ring”; <http://mis.historiska.se/mis/sok/start.asp>). Kent Andersson has also done extensive studies of Roman Period rings from Scandinavia (c. 0 – AD 375). While Andersson is currently working on later examples, his work is to my knowledge the most detailed analysis of the gold rings in Scandinavia. It is helpful to consider the categories of types of rings that Andersson identifies and the corresponding sketches of each type (Andersson 1993a: 9-12).

²⁸⁴ Some of the gold rings in the Guldrummet (Gold Room) at the Historiska Museet have slightly overlapping ends and appear to have been intended as ornaments worn around the neck. These are thin enough that they could be bent easily. Similarly, Andersson’s catalogues describe several types of rings that appear to have been designed to be bent into place on the finger, arm or neck (1993a: 181 Fig. 60, 182 Fig. 61, 183 Figs. 62-3, 186

hook/knob, a latch or a non-permanent fixture of some sort (Andersson 1995: 88-91; Magnus 1976: 84-5; Webster 2006: Fig. 19).²⁸⁵ Second, both ends of a ring may be twisted together, thereby forming a relatively permanent closed loop without welding. Several silver rings that close in this manner are on display at the Vikingar exhibit in the Historiska Museet (Stockholm). The Historiska Museet database also contains several gold rings that have been closed by twisting the loose ends around the ring itself (“guld ring”).²⁸⁶

Third, the rings may be spirals. If the spirals themselves are closed (with little or no space between the coils) then it could prevent them from falling off the rope. Cleasby-Vigfusson notes that metals used to be coiled into spirals and then pieces were cut off according to payment: in these contexts, *baugr* “simply means money” and was used by “the poets in numberless compounds” (1957: s.v. *baugr*). The Vikingar exhibit at the Historiska Museet (Stockholm) has several very tight spirals of hacksilver on display,²⁸⁷ and their online database shows several examples of similarly tight spirals of gold dating to the Migration Period and Viking Age.²⁸⁸ This interpretation would mean that Völundr makes some seven hundred “currency spirals”, not necessarily items of jewellery. The implications of this interpretation need to be assessed in regards to the compound *gimfastan* in 5.4: if this word

Fig. 66, 188 Fig. 70, 202 Fig. 79, 208 Fig. 87, 212 Fig. 89, 224 Fig. 95). See also

<http://www.historiska.se/data/?foremal=109210>

²⁸⁵ The Historiska Museet in Stockholm, in the Guldrummet, has several examples of gold neck rings that close using a hook and loop fixture. It also has three gold neck-collars comprised of three to seven hollow tubes of gold. At least one of these collars is from Västergötland (fifth century) and shows an intricate fixture using six loops and a pin to securely close the ring. On the five-tubed collar, this mechanism features an intricately designed safety lock featuring a spring to apply tension. This sort of intricate device seems appropriate in comparison to the *vél* that Völundr makes for Níðuðr. The intricate patterning of these neck-collars might also be suggestive of the patterning of ropes, belts or even tree-bark, hence perhaps introducing another possible association to the element *lind-*. This is, however, rather speculative. Some detailed photos may be seen on the museum website: <http://www.historiska.se/utställningar/fastautställningar/guldrummet/> See also Nerman, Figures 3, 7, 18, 22 (1982: 69, 71, 75-6). Consider also the finely decorated hooks in Fig. 29 of Andersson 1993a (72).

²⁸⁶ The two rings in the middle of this photo demonstrate this method of closing:

<http://www.historiska.se/data/?foremal=109500>

²⁸⁷ See also Hall (2007: 57) for a photo of the silver hoard from Spillings, Othem, Gotland (c. 867), which shows several varieties of silver rings, including partly open, bent shut, spirals and finger rings.

²⁸⁸ See for example the following finds from the Historiska Museet online catalogue:

<http://www.historiska.se/data/?foremal=111213>

<http://www.historiska.se/data/?foremal=109501>

<http://www.historiska.se/data/?foremal=272206>

<http://www.historiska.se/data/?foremal=120475>

<http://www.historiska.se/data/?foremal=109733>

Kent Andersson’s studies also include documentation of the key types of rings, several of which form relatively tight spirals (1993a: 9-12, 102 Fig. 42, 110 Fig. 43, 181-96, 200, 202). While most of these finds are clearly items of prestigious jewellery, some are clearly not and may be regarded as currency spirals (Andersson 1993a: 206 Fig. 85).

incorporates the element *gimr*, m. “precious stone, jewel”, then these rings are clearly prestige jewellery that are not necessarily intended for use as currency in the sense that “currency spirals” are.²⁸⁹ Moreover, the fact that Bǫðvildr clearly wears one of these rings as a piece of jewellery suggests that these rings are generally intended as jewellery, not simply as currency.

The alternative to these three methods of joining open rings is that the rings are seamless circles. Two methods may be used to achieve this. First, the rings could be cast into a mould, thereby creating completely seamless circles.²⁹⁰ Second, the loose ends of the rings could be welded together. Depending upon the skill with which this is done, it can also produce the effect of a seamless circle (Andersson: pers. comm.²⁹¹). The verb *lykja* in stanza five suggests welding, coiling or perhaps twisting, but not casting: the process used for casting is distinct and the verbs used for casting metal tend to reinforce the liquid state of the metal and the action of heating and pouring the metal.²⁹² *Lykja* therefore rules out the possibility that these rings are cast in moulds.

The qualitative associations of Vǫlundr’s skill and knowledge likely also rule out several possibilities. In this instance, the adverb *vel* modifies the verb *lykja*. This aesthetic and qualitative description of Vǫlundr’s technique suggests that he is performing a technique that requires advanced skills. The possibility that the rings are closed simply by bending them closed (without some sort of ornately and/or skillfully formed connecting mechanism) may also confidently be ruled out.

This leaves only three likely possibilities for how the loose ends of the rings are attached. First, they may be twisted shut in a skillful manner, without necessarily welding them. Second, they may be welded together. Third, they may be joined together by latching or hooking mechanisms. Material examples of all of these possibilities suggest that each may

²⁸⁹ See, for instance, this gold ring with a ruby set in it, which dates to the Roman Iron Age and was found in Uppsala: <http://www.historiska.se/data/?foremal=110291>

²⁹⁰ Kent Andersson notes that there are many examples of cast gold rings dating from the Roman Period in Scandinavia, including all the different kinds of snake-head rings in the form of neck, arm and finger rings (Pers. comm.; cf. Andersson 1993b: 81-6).

²⁹¹ In an email to me, Andersson has said that he recalls from his examination of rings of Type 1 and 5 that some of these types appear to have been welded, although the exact technique used to accomplish this is not yet known for certain (pers. comm.; cf. 1993b: 31-5, 41-4).

²⁹² See the discussion of the verbs *steypa* and *vella* above (pages 47-49 and 77ff.).

have been considered skillful and of high aesthetic and/or technical quality.²⁹³ This helps to clarify that *lindbaugar* likely refers to three possible types of rings.

The compound *gimfastan* in 5.4 also describes a particular method and/or feature in the construction of these rings. This compound does not appear elsewhere in Old Norse. The compound contains two elements, *gim-* and *-fastan*, and each element has been interpreted in at least two ways. The first element, *gim-*, has been interpreted as the neuter noun *gim*, “fire”, which appears elsewhere in ON verse but not in prose (La Farge and Tucker 1992: s.v. *gim*; *LP* 1931: s.v. *gim*; *SPSMA* 2001-2010: s.v. *gim*).²⁹⁴ This first element has also been interpreted as the masculine noun *gimr*, “gem, precious stone”, but *gimr* appears only in compounds, e.g. *gimsteinn* “gem, precious stone” (McKinnell 1990: 2). The second element, *-fastan*, has been interpreted either as the superlative of the adjective *fár*, “brightly coloured, stained”,²⁹⁵ or as a derivative of *fastr*, adj. “fast, firm, hard” or (adv.) “fast, strongly, hard, incessantly” (Cleasby-Vigfusson 1957: s.v. *gim*; Dronke 1997: 308; La Farge and Tucker 1992: Finnur 1954: s.v. *gim*; Jón 1962: 59; *LP* 1931: s.v. *gim*; Nerman 1982: 32-3).

I will start by considering those interpretations of *gimfastan* that are based upon *gim* n., “fire”. The 1860 edition of *LP* and La Farge and Tucker speculate that *gimfastr* is one compound word meaning “fireproof” or “fire-resistant” and that this might refer to an anvil (La Farge and Tucker 1992: s.v. *gimfastr*; *LP* 1860: s.v. *gimfastr*). According to this interpretation, the phrase would read as follows: *hann sló gull rautt við gimfastan*, “he hammered red gold against a fireproof [= an anvil].” Birger Nerman rejects this interpretation because “the poem is otherwise completely devoid of periphrasis” (1982: 32). There are, however, a number of equally enigmatic compounds in the poem that appear to refer to particular techniques or products of smithing. It is perhaps more important to observe that the interpretation of *gimfastan* as a collocation for an anvil is not attractive because there is no evidence of this or similar collocations in Old Norse referring to anvils.

LP 1931 interprets *gim* as referring to the fire of a forge and the second element *-fastan* as a separate adverb, meaning “incessantly” (*LP* 1931: s.v. *gim*). According to this

²⁹³ The examples I am drawing upon here date from the Migration Period and Viking Age (Scandinavia, and in some cases Anglo-Saxon England, and the Netherlands) and can be seen in Magnus Magnusson’s monograph (1976: 84-5), Leslie Webster’s article (2006: Figs. 19-20), and at the Guldrummet in the Historiska Museet.

²⁹⁴ The results of a headword search for *gim* on the *SPSMA* website show that most usages refer to “jewel”, but a minority do refer to “fire”: <http://www.skaldic.arts.usyd.edu.au/db.php?table=lemma&id=27191&val=gim>

²⁹⁵ As I note above, the manuscript reads *gimfástan*. Editors commonly emend to *gimfastan* or *gim fastan* and I discuss the reasons for this in more detail shortly.

interpretation, 5.3-4 reads as follows: *hann sló gull rautt við gim fastan*, “he hammered red gold with fire [i.e. heated by fire] incessantly” (LP 1931: s.v. *gim*). The strength of this interpretation is that *gim* n., “fire”, does appear elsewhere in ON poetry, particularly in kennings for gold rings (LP 1931: s.v. *gim*). The key difficulty with this interpretation is the doubtfulness of *fastan* being an adverb. Dronke claims that interpreting *fastan* as an adverb “would have no parallel and would be unfitting for the making of a delicate ring” (1997: 308). While Dronke’s second statement is questionable,²⁹⁶ she is correct to point out that an adverbial form *fastan* has no parallel (cf. Nerman 1982: 33). Thus, these interpretations that are based upon *gim* n., “fire”, appear to be implausible.²⁹⁷

Several scholars have interpreted the first element, *gim*, as ON *gimr* m., “gem, precious stone.” The difficulty with *gimr* m. is that it appears nowhere else in Old Norse. *Gimsteinn* is the Old Norse compound that generally refers to “jewel” or “precious stone” (McKinnell 1990: 2). McKinnell points out that the word *gim* is used in Old English verse to mean “jewel” (McKinnell 1990: 2). As an example, McKinnell points to the Old English *Maxims II* 22-3: *Gim sceal on hringe standan*, “a gem should stand on a ring” (McKinnell 2001a: 331). As part of his argument for Old English influence on the vocabulary of *Völundarkviða* and for the Icelandic scribe’s misunderstanding of that vocabulary (1990: 4-5, 11), McKinnell suggests that the first element of *gimfastan* may be this Old English word *gim*. Thus, according to McKinnell, because the Old English simplex *gim* does not exist in Old Norse, it “seems to have been misunderstood by the scribe, who made of it *gimfastan*, a single word which fails to make any obvious sense” (McKinnell 1990: 2; cf. McKinnell 2001a: 331). This argument is attractive in that it explains not only the provenance of the

²⁹⁶ While the verb *slá* can generally mean “to forge”, it might just as well be interpreted as “to hammer” in this context. Moreover, substantial strength, force and energy may have gone into the making of such rings, and such hammering might be done with dexterity, skill and care. Interpretations of such artefacts and aesthetic impressions of delicacy and fragility need to be made with an awareness of how modern sensibilities can bias our perspective (cf. Callmer 2003: 337-41).

²⁹⁷ Nerman has also suggested that it may be implausible to interpret *gim* as n. “fire” because the purity of gold in early medieval Scandinavia was insufficient to make such heat-treatment feasible:

Gold *can* be cold-hammered if it is not quite pure. But gold *must* be cold-hammered if it is not quite pure; only pure gold can be hot-hammered. Now old Scandinavian gold was practically never quite pure; often it did not contain more than eighty per cent. of fine gold. Scandinavian gold therefore had always, or practically always, to be cold-hammered. (Nerman 1982: 33)

Nerman may be correct to rule out the possibility of *gim* n., “fire”. But I believe further research is needed to determine the specific materials and techniques used to fabricate gold rings in early medieval Scandinavia. Could *Völundr*, for example, be welding these rings shut using a soldering alloy with a sufficiently low melting point that it does not adversely affect the gold of the ring itself?

compound *gimfastan* itself, but also the confusing lack of sense in the compound as it appears in the manuscript.

If McKinnell is correct to interpret *gim-* as a misunderstood OE loanword (*gim*, “jewel, precious stone”), then all that remains is to interpret the second component, *-fastan*. Sophus Bugge and Birger Nerman interpret the manuscript reading of *gimfástan* (with an accent on *fástan*) as the superlative of the adjective *fár*, “brightly coloured, stained” (Nerman 1982: 33; Bugge qtd. in Nerman 1982: 33). Thus, the reading would be “he struck the red gold against the brightest coloured jewel” (cf. Nerman 1982: 33).²⁹⁸ Dronke, however, points out that there “is no evidence to support a reading *fástan* as superlative of *-fár*[...] There is no certain instance of the uncompounded positive adj. *fár* in ON [...], and no recorded instance of the superlative in any Gmc language” (Dronke 1997: 308). Dronke cites *liosár*, (commonly emended to *lióssar*, “shining, radiant”) in the eighth half-line of stanza five as evidence supporting this assertion that the accent in *gimfástan* is not necessarily meaningful.

The last remaining possibility is that *-fastan* is a masculine, accusative adjective, meaning “fast, firm, hard” (Cleasby-Vigfusson 1957: s.v. *gim*; Dronke 1997: 308; Fritzner 1954: s.v. *gim*; Jón 1962: 59; *LP* 1931: s.v. *gim*). Dronke identifies two possible interpretations of how OE *gim* or ON *gimr*, “jewel, precious stone”, could be described as *fastr*, “fast, firm, hard.” First, the jewel could be “fast” or “secure” “because it was tightly held by the gold hammered round it” (Dronke 1997: 308). In support of this interpretation, she quotes from the Old English poem *Elene*: “*sincgim locen ... hlafordes gifu*, ‘treasure-gem closed in (with gold) ... a lord’s gift’” (*Elene* ll. 264-5 qtd. in Dronke 1997: 308). Second, Dronke suggests that the gem might have been “made firm by resin or cement”, like garnets in cloisonné work (1997: 308).²⁹⁹ There is insufficient information to rule out one or the other of these possibilities, and both appear to be equally plausible. Thus, McKinnell’s interpretation seems the most attractive in that it is relatively inclusive. He suggests the

²⁹⁸ Bugge actually suggests “he struck the red gold against the glittering precious stone”, but this does not retain the superlative of *fár* that both Bugge and Nerman suggest (Nerman 1982: 33).

²⁹⁹ For a summary and evaluation of Nerman’s interpretation of these rings and his argument that the phrase *við gim fástan* refers to a technique known as *verroterie cloisonnée*, see Fidjestøl (1999: 145-7). Nerman suggests that this technique pertains to the period from 300-700 and he therefore makes a case for *Völundarkviða* dating to before 550 AD (Fidjestøl 1999: 145-6). As Fidjestøl points out, however,

Nerman was exceptionally well equipped, being professionally trained in philological matters as well as archaeology, and most reviewers of his work have accepted his archaeological elucidation of objects mentioned in Eddic poems with gratitude. His principal aim was to contribute to the dating of the Eddic poems, however, and in this respect his results have remained more controversial. (Fidjestøl 1999: 147)

complex *við gimfastan* should be separated into the phrase *við gim fastan*, and “the phrase should then be translated ‘to/round the firmly-held gem’” (1990: 2). Numerous examples of rings holding stones and garnet settings have been found from the Roman Period and Migration Period.³⁰⁰ While it is difficult to arrive at a conclusive interpretation of this phrase, McKinnell’s argument for the Old English influence on this and other pieces of vocabulary in *Völundarkviða* makes a plausible case for *við gim fastan* implying that Völundr affixes precious stones or garnets to these rings. Thus, these *lindbaugar* that Völundr makes are clearly prestige items of jewellery adorned with precious stones.

3.3-b Interpreting the sword

The other independent creation associated with Völundr is his sword. The descriptions of this sword provide information about Völundr’s social standing and his skills as a smith. This sword is first mentioned in stanza seventeen and the prose passage that precedes this stanza. The prose says that *hann siálf bar sverðit, er Völundr átti* (Neckel and Kuhn 1962: 119), “he [Níðuðr] himself wore the sword, which Völundr owned.” The verb *bera*, “to wear” clothes or “to carry” weapons (ONP 2010: s.v. ³*bera* vb. 2”, ³*bera* vb. 3; Cleasby-Vigfusson 1957: s.v. *bera*), is significant: it suggests Níðuðr is wearing this sword on his person in his court, displaying it as an article of clothing or jewellery might be worn. This would appear to be a prestigious sword.

The prose and verse of *Völundarkviða* differ slightly in the portrayal of Völundr’s role as a smith in relation to this sword. The initial statement in the prose preceding stanza seventeen is equivocal as to whether Völundr, in this poem, displays any skills related to blacksmithing or sword-making.³⁰¹ According to the prose, Völundr simply owned this sword, and as an aristocratic figure amongst the Sámi, it is fitting that he would own a sword

³⁰⁰ Consider Andersson, Figures 30, 32, 33, 41, 45, 52, 75, 97, 99 (1993a: 73, 83, 99, 128, 156, 196, 227, 231). Consider also <http://www.historiska.se/data/?foremal=43454>, <http://www.historiska.se/data/?foremal=43455>, <http://www.historiska.se/data/?foremal=110291>.

³⁰¹ While Völundr is characterized predominantly as a non-ferrous smith in this poem, elsewhere he is also associated with ferrous metalworking. In *Beowulf* Wēland is responsible for the making of Beowulf’s mail-shirt (ll. 455). According to chapter 67 of *Velents þáttur* in *Þiðreks saga af Bern*, Velent makes the sword Mímungr (Guðni 1961: Vol. 1, 97-9). From an archaeological and anthropological perspective, Johan Callmer points out that there “was only a small number of weapon smiths on this level in Scandinavia” (2003: 347). Callmer also suggests it is likely many of these activities (i.e. the production of a pattern-welded sword or the making of brooches from moulds) “presupposes a group of several master smiths and craftsmen working together” (2003: 347). On pattern-welded swords (which should not necessarily be confused with damascened swords) see the description in the sixth-century letter by Cassiodorus (written for Theodoric the Ostrogoth) to the king of the Varni (Brady 1979: 102), and see also Manfred Sachse (1993: 13, 19-21) and Ellis Davidson (1962: 1-40, 114-8, 130-1, 142-5).

worthy of being worn by a king. The following verse is quite clear, however, that Völundr had a hand in finishing this sword:

‘*Scínn Níðaði sverð á linda,
þat er ec hvesta, sem ec hagast kunna,
oc ec herðac, sem mér hægst þótti;*’ (18.1-6)

‘A sword shines upon [the belt] of Níðuðr, that [sword] which I sharpened, as I most skillfully knew how, and I hardened, as seemed to me most suitable;’

The verbs *hvessa* and *herða* appear in contexts that respectively refer to the processes of sharpening a blade and hardening or tempering it (Fritzner 1954: s.v. *herða* v.; Cleasby-Vigfusson 1957: s.v. *herða*, *hvessa*).³⁰² During the Viking Age in Scandinavia, swords were generally made from iron. This excerpt shows that Völundr is skilled in bladesmithing techniques, particularly tempering and sharpening blades, and it may or may not also imply that he is skilled in welding iron and smelting iron ore.³⁰³ Either way, Völundr is a remarkably skilled artisan, able to produce refined artefacts in both ferrous and non-ferrous metals. This testifies to Völundr as an artisan with “deep and exclusive knowledge” as well as the social connections and capacities of production that were “only known and mastered by a minor (often even a minimal) part of the population” (Callmer 2003: 342).

In the stanza quoted above, Völundr also conveys a sense of pride or appreciation for this particular sword because it is the result of the best of his skill and knowledge: *sem ec hagast kunna* [...] *sem mér hægst þótti* (18.4, 6). The poem clearly delineates the technical actions of the smith (*hvessa* and *herða*) as well as the body of knowledge and skill possessed only by the smith (*þykkia* and *kunna*). The poem portrays Völundr himself articulating this nuanced distinction between these two categories of the artisanal. The implication here is that the suffering and exploitation the smith endures are not simply because his sword has been taken from him, but also because *both* his skills *and* his knowledge are not being properly respected.

³⁰² See *herða* in attestation *afl* 36. in Chapter 1 (page 72 above). See also Fritzner (1954: s.v. *herða* f.).

³⁰³ In this instance, it is possible that Völundr acquired a roughly prepared sword blade and finished it, tempering and sharpening the blade as well as (possibly) adding a hilt. It is also possible that he made the blade “from scratch”, i.e. from iron ore or iron ingots. Other sources for characterizations of Völundr portray the smith as skilled at smelting iron as well as hardening and sharpening swords. See, for instance, the excerpt from *Þiðriks saga af Bern* in *afl* 4. from Chapter 1 (page 48 above), which describes Velent making completely finished, superlative swords from ground up iron filings. See Hinton for a brief discussion of Anglo-Saxon texts that describe distinctions between different smithing skills, e.g. a craftsman skilled in working with gold and gems versus a skilled bladesmith, or a smith skilled in repairing tools versus a smith skilled in repairing weapons (Hinton 2003: 263).

3.4 Völundr's creations for Níðuðr³⁰⁴

Stanzas 20-25 and 35-36 describe the items that Völundr makes for Níðuðr, Níðuðr's wife and their daughter during his enslavement at Sævarstǫð. Stanza 20 presents a general picture of Völundr's role as Níðuðr's smith:

*Sat hann, né hann svaf, á valt oc hann sló hamri,^[305]
 vél gorði hann heldr hvatt Níðaði.
 Drífo ungir tveir á dýr siá,
 synir Níðaðar, í sævar stǫð. (20.1-8)*

He sat, he did not sleep, continuously, and he forged with hammer, he made ingenious devices rather quickly for Níðuðr.
 Two young ones raced to look on [the] riches, sons of Níðuðr, in [the] landing-place of [the] sea.³⁰⁶

The key verb here is once again *slá*, “to hammer, forge”, as is also the case in 5.3, 25.7 and 36.3. In this instance at 20.2, however, *slá* appears in combination with a *hamarr*, “hammer”, as a tool. In this context it is clear that *slá* implies a hammering action rather than the more general creative metalworking action implied by “forge” (La Farge and Tucker 1992: s.v. *slá*). The other verb that appears here is *göra*, “to make, build, prepare, produce” (Cleasby-Vigfusson 1957: s.v. *göra*; La Farge and Tucker 1992: s.v. *göra*; Fritzner 1954: s.v. *göra*). This same verb is used to describe the creation of tools in *Völuspá* 7.8 and the building of Níðuðr's smithy in *Völundarkviða* 34.2. These creative verbs are associated with two artisanal productions. First, *vél*, “ingenious devices”, is the term used to generally describe Völundr's creations once he is enslaved. As La Farge and Tucker suggest, the term is ambiguous but generally carries overtones of guile and deceit.³⁰⁷ Second, in stanza twenty the sons of Níðuðr hurry for the first time to Völundr's smithy to see *dýr*, “costly, precious objects”.³⁰⁸ The verbs *slá* and *göra*, as well as the *vél* and *dýr* that Völundr makes, are all

³⁰⁴ *Fen fiqturs*, “fen of [the] fetter” (24.3, 34.7), has an important role to play in the smithing workshop and this is where Völundr places the headless bodies of Níðuðr's sons. The discussion of *fen fiqturs*, however, has little to do with my current discussion of the objects Völundr makes for Níðuðr. For the sake of maintaining a fluid discussion of the objects Völundr makes for Níðuðr, my discussion of *fen fiqturs* appears in Appendix 1 (see page 279 below).

³⁰⁵ This is the only instance in the *Poetic Edda* in which *hamarr* does not refer to Þórr's hammer (La Farge and Tucker 1992: s.v. *hamarr*).

³⁰⁶ *Sævar* = gen. sing. *stǫð* = “shore, landing place” (La Farge and Tucker 1992: s.v. *sær*, *stǫð*). Therefore it is literally “in landing place/shore of sea.”

³⁰⁷ La Farge and Tucker suggest that *vél* may imply “to scheme against [Níðuðr]” (1992: s.v. *vél*).

³⁰⁸ La Farge and Tucker suggest that *dýr* means a “costly, precious object”, although they do acknowledge that no other such usage exists and *dýr* regularly refers to an animal, especially deer (1992: s.v. *dýr*). Dronke explains that scholars have “commonly taken [*dýr* in this instance] as a nonce substantival use of the neut. pl. of adj. *dýrr*, ‘precious (things)’”, acknowledging that this “remains somewhat suspect” (1997: 316).

understood in direct relationship to Níðuðr, for whom all these artisanal actions and productions are accomplished.

Stanzas 21-23 describe more products associated with Völundr's work. At the smithy there is a *kista*, "chest" with *lucklar*, "keys" (21.1-2, 23.5-6).³⁰⁹ Within this *kista* are three items: *menia*, "torques, necklaces, precious objects",³¹⁰ *gull rautt*, "red gold",³¹¹ and *gørsimar*, "precious objects, treasures".³¹² The second time that the boys go to the smithy they exclaim to each other, '*Gøngom baug siá!*' (Neckel and Kuhn 1962: 121), "'Let's go see rings!'" Thus there are evidently torques, necklaces, rings and other precious objects of red gold at the smithy. Völundr is presumably responsible for the fabrication of these items. There is, however, no explicit description of him making these objects in these stanzas, as is the case in stanzas 5 and 20, and the nouns used to describe these items are more specific than those used in stanza 20.

Upon the return of Níðuðr's sons, Völundr begins his artisanal revenge. First, he makes two *skálar*, silver drinking vessels, out of the skulls of Níðuðr's sons. Second, he makes *iarnasteinar*, "precious stones", out of the boys' eyes.³¹³ Finally, he makes *brjóstkringlar*, "brooches", out of the boys' teeth.³¹⁴ Stanzas 24-25 and 35-36 contain the

³⁰⁹ Locks and keys are common finds from Viking-age Scandinavia and are associated with several lockable chests that have been found, some containing tools (Arwidsson and Berg 1983: 7; Haywood 2000: 123).

³¹⁰ La Farge and Tucker (1992: s.v. *men*).

³¹¹ La Farge and Tucker (1992: s.v. *gull*).

³¹² La Farge and Tucker (1992: s.v. *gørsimi*).

³¹³ *Iarnasteinn*, as McKinnell points out,

appears in Old Norse verse only here and in *Guðrúnarkviða I* 18 and *Guðrúnarkviða III* 9, in both of which it is used in a vague way to describe a rich and exotic jewel; both may be derived from *Völundarkviða*. OE *eornastan* appears in *Elene* 1024 and five other instances, in one of which, *Psalm Gloss C* 118: 127 (Wildhagen 1910: 316), it glosses Latin *topazion*; the word does not appear in Old Saxon. (McKinnell 1990: 4)

³¹⁴ *Brjóstkringla* is yet another *hapax legomenon*. The first component of the compound, *brjóst*-, clearly corresponds to ON *brjóst* n., "breast, chest". The second component, *-kringla*, clearly corresponds to ON *kringla* f., "disk, circle, orb" (ONP 2010: s.v. *brjóst*; Fritzner 1954: s.v. *brjóst*, *kringla*; Cleasby-Vigfusson 1957: s.v. *bjróst*, *kringla*). *Brjóst* appears in a few compounds referring to jewellery and other garments associated with the chest: *brjósbúnaðr*, "breast ornament, brooch", *brjóstreip*, "breast-rope, girdle". Although these compounds are only sparsely attested (*brjósbúnaðr* appears only twice, and *brjóstreip* just once), they do clearly establish a pattern for referring to ornaments or garments of the chest. *Brjóstkringla* conforms to this pattern. Dronke points out that *kringla* "is not elsewhere recorded of jewellery" (1997: 319). The prevailing interpretation is that *brjóstkringla* refers to something circular that was worn upon the chest as a decoration (Fritzner 1954: s.v. *brjóstkringla*; Jón Helgason 1962: 72; Dronke 1997: 319). Dronke speculates that the "making of brooches out of human teeth is not unrealistic (though I have not found instances of it)" (1997: 267). Jón Helgason notes that some scholars have speculated that a circular form of ornament could be made by joining two jaw-bones together, and that the teeth could be replaced with beads (1962: 72). I am not aware of any instances in which this sort of ornament is described. An additional difficulty with this last interpretation is that ON *tönn/tönn* f., "tooth", clearly refers to the teeth themselves, either human or animal, not to *kjálki*, "jawbone" (Fritzner 1954: s.v. *tönn*, *kjálki*; Cleasby-Vigfusson 1957: s.v. *tönn*, *kjálki*; LP 1931: s.v. *kjálki*).

essential details of Völundr's artisanal revenge. I quote in full here stanzas 24 and 25, and in footnotes I comment upon changes in the repetition in stanzas 35-36:

*Sneið af haufuð húna þeira,
oc undir fen fíoturs fætr um lagði;
enn þær scálar, er und scorum vóro,
sveip hann útan silfri, seldi Níðaði. (24.1-8)³¹⁵*

“He cut off [the] heads of their sons, and he had laid [their] feet underneath [the] fen of fetter, and those cups³¹⁶, which were under [their] hairs, he covered without in silver, presented to Níðuðr.

*Enn ór augom iarcnasteina
sendi hann kunnigri kono Níðaðar;
enn ór tǫnnom tveggia þeira
sló hann brjóstkringlor, sendi Bǫðvildi. (25.1-8)³¹⁷*

And from [the] eyes precious stones³¹⁸ he sent to [the] crafty wife of Níðuðr; and from [the] teeth of the two of them he forged brooches,³¹⁹ sent to Bǫðvildr.

As is the case with stanzas 5 and 20, stanzas 24-25 and 35-36 also describe Völundr in the act of creation. The descriptions of Völundr making items out of Níðuðr's sons are, however, not as focused on the details of his technique as they were earlier in the poem. The main verbs here are *sneiða*, “to cut”, *leggja*, “to lay, to place”, *sveipa*, “to cover”, *slá*, “to hammer, to forge”, *selia*, “to present, deliver, hand over”, and *senda*, “to send”. Only *slá* and *sveipa* directly pertain to metalworking in any technical respect. *Sveipa* appears to refer to some sort of coating or gilding procedure (Cleasby-Vigfusson 1957: s.v. *sveipa*; La Farge and Tucker

Kjálki tends to refer specifically to the maxilla and mandible and, in a few cases, to objects that resemble the shape of the mandible, i.e. sledges and skis. *Tǫnn/tönn*, on the other hand, forms kennings for stone such as *lagar-tönn*, “sea-tooth”, and *foldar-tönn*, “earth-tooth” (LP 1931: s.v. *tǫnn*; Cleasby-Vigfusson 1957: s.v. *tönn*). Furthermore, *Kjálkafjörðr* is a toponym in *Landnámabók*: although this may share origins with the nickname of Geirsteinn (or Eysteinn) *kjálki*, who claims this area, it is also worth speculating that the toponym may be suggestive of the shape of the inlet or promontories in the area (ÍF 1 1986: 172-3). The distinction in usage is clear: these *brjóstkringlar*, whatever exactly they are, incorporate the individual teeth of Níðuðr's sons, not necessarily their jawbones.

³¹⁵ The last four half-lines of this stanza are repeated in stanza thirty-five, the primary changes being that Völundr speaks in the first-person and the verb *senda* appears instead of *selia*.

³¹⁶ *Skál* f. also appears in *Akv* 35; cf. *gull*-, *ql-skál* (La Farge and Tucker 1992: s.v. *skál*)

³¹⁷ This stanza is repeated in the last four half-lines of stanza thirty-five and the first four half-lines of stanza thirty-six. The major differences here are that Völundr once again uses the first-person in his direct speech. He also refers to *qván Níðaðar* instead of *kono Níðaðar* (35.5-8, 36.1-4).

³¹⁸ Dronke notes that we are “not told *how* [Völundr] fabricated these surreal jewels” from the eyes of Níðuðr's sons (1997: 319). Dronke suggests that the actual “making of jewels out of eyes [...] must be fantasy”, but she notes the appropriateness of a literary or poetic comparison between jewels and eyes (1997: 267). Poole has pointed out to me that Egill Skallagrímsson uses *søkk*, “jewel”, as the base-word in a kenning for “eye” in 8.3 of *Arinbjarnarkviða* (pers. comm.; cf. Bjarni 2003: 157).

³¹⁹ Alternatively, “circular breast ornaments” (La Farge and Tucker 1992: s.v. *brjóstkringla*).

1992: s.v. *sveipa*; Fritzner 1954: s.v. *sveipa*). The last verb (*senda*) is repeated twice in stanzas 24-25 and three times in stanzas 35-36. In comparison to the details given in the technical features of Vǫlundr's process in stanza 5, the use of the verb *selia* and the repetition of the verb *senda* suggests a different emphasis in the latter stanzas of the poem. The focus now is not only on the technical details of Vǫlundr's craft but also (and increasingly) on the significance of each set of artefacts as they are directed specifically towards a single family of aristocratic recipients or patrons.

This shift in emphasis corresponds to the change between Vǫlundr's situation as a relatively independent craftsperson in stanza 5 to a craftsman operating exclusively for one royal family. In his research into craft production in early medieval Scandinavia, Johan Callmer points out that there was demand for Vǫlundr's "strongly specialized craft production" within a more exclusive or "closed organization such as a major estate, a petty kingdom or some even bigger political unit", i.e. as opposed to more open systems of trade (2003: 342-3). This sort of specialized production "supplied early medieval society with a wide range of both functionally important and symbolically loaded artefacts, which the local agrarian social units had no capacity to produce" (Callmer 2003: 343). In the latter half of *Vǫlundarkviða*, Vǫlundr clearly functions within the context of such demands as a commissioned artisan delivering prestige and personalized artefacts exclusively to his patrons.

Vǫlundr's personalization of these artefacts is, however, heavily ironic and subversive. In particular, the smith's custom-made deliveries parody the social function of prestige metal items and the role of the king and queen within the ceremonial environment of the hall. These drinking vessels are, for instance, particularly significant within the socio-historical context of this poem. These cups are a poignant reminder of Níðuðr's role as a king and the social function of a good king in medieval Germanic cultures. The function of ornate, ceremonial drinking vessels is (or should be) to facilitate reciprocal exchanges of gifts and oaths that secure peace and prosperous alliances. Essentially, a good king should have great amounts of wealth, but he should also be appropriately generous with that wealth, thereby securing future alliances, the future of his kingdom and the prosperity of his sons. The

antithesis of a good king is one who hoards for himself and engages in practices of negative reciprocity that devastate his people and his kingdom.³²⁰

Many of these associations between the king and treasure are grounded in the ritual passing of the mead-cup at ceremonial feasts.³²¹ The role of passing this cup is so important, in fact, that there is a name for the vocation: *byrele* in Old English, and *byrli* in Old Norse, both meaning “cup-bearer” (Bosworth-Toller 1954: s.v. *byrele*; *ONP* 2010: s.v. *byrli*).³²² In early medieval Germanic traditions, ornate and precious mead-cups were passed around the king’s hall as part of drinking, feasting, gift-giving and oath-making rituals. In particular, the ritual of passing around a ceremonial drinking vessel was essential to the stability and order of a king’s rule (cf. Enright 1996: 2-9).³²³ The drinking vessels that Níðuðr receives from Völundr are therefore a significant symbol of this ritual of ceremonial drinking and its social function.

The social function of these mead-cup rituals is predominantly patrilineal in focus. Several passages from the Old English poem *Beowulf*, for example, demonstrate how these mead-cup rituals are focused in particular on securing the future of Hrōðgār’s sons.³²⁴

³²⁰ Negative reciprocity is essentially the action of receiving or taking something for nothing (cf. Bazelmans 1999: 28). See also Jos Bazelmans’s analysis of weapons and the relationship between lords and retainers in *Beowulf* (1999: 28; cf. Clunies Ross 1994: 45-67, 103-5, 115-22). All quotations from *Beowulf* are taken from the edition by Bruce Mitchell and Fred C. Robinson (2006).

See also *Beowulf*, lines 1745-68, for Hrōðgār’s advice to Beowulf about the differences between a good, generous king and a greedy, miserly king. In *Beowulf*, king Hrōðgār himself is described in close relation to prestige treasures and reciprocal gift-giving: *sinces brytta* (ll. 607), “bestower of treasure”, *syncgyfan*, “treasure-giver” (ll. 1012), *hordweard hæleþa*, “treasure-keeper of warriors” (ll. 1047). *Beowulf* also demonstrates the role of reciprocal gift-giving over time. Acknowledging their voluntary service, Hrōðgār gives ornate gifts of gold, silver and iron to Beowulf and his retainers. And Beowulf’s presence is itself already a reciprocal action that recalls Hrōðgār settling a feud for Beowulf’s father by sending a payment of money and treasures to the Wylfings (ll. 456-472). The reciprocity implied in the gifts a king gives is also essential to the social constructs of individual and collective identity as well as continuity between past and present (cf. Bazelmans 1999: 111-5, 134, 149-53, 156-70). Bazelmans even points out that there is a strong association between “treasure” and “life” in both Old English and Old Norse texts and contexts (1999: 160).

³²¹ For detailed discussions of the recent history of studies of gift-giving and this ritual of the mead-cup in *Beowulf* and elsewhere (including a discussion of the anthropological theories of Marcel Mauss, Max Weiner, Claude Lévi-Strauss and Louis Dumont), see Bazelmans’s monograph (1999: 1-53).

³²² The word *byrele* appears in line 1161 of *Beowulf*. *Skutilsveinn* is another Old Icelandic word for cup-bearer. This was the honorary title given to Snorri Sturluson by young King Hákon (Faulkes 2008: 312; cf. Fritzner 1954: s.v. *skutilsveinn*).

³²³ Lines 607-641 and 1008-1231 of *Beowulf* show the ceremonial cup being passed around several times, often in a particular sequence that establishes the hierarchal order of king Hrōðgār’s hall and the relation of his kingdom in connection to other kingdoms.

³²⁴ In contrast to the prominent mention of their sons here, Frēawaru, the daughter of Hrōðgār and Wealhþēow, is not mentioned except retrospectively by Beowulf (ll. 2020-69). Beowulf describes Frēawaru as functioning like her mother, taking the mead-cup around during the ceremonial feasting. Frēawaru, also like her mother, is a *friðusibb folca*, “pledge of peace of the people” (ll. 2017). In Beowulf’s opinion, her role as a peace-pledge in marriage to Ingeld, Hrōðgār’s enemy, will not be successful. Beowulf’s speech and his prediction about

Wealhþēow is described as *cynna gemyndig*, “mindful of customs” (ll. 613),³²⁵ and her carefully constructed speeches reflect this. Particularly following the performance of the scop’s song about Finnsburg, Wealhþēow’s speech demonstrates her perceptive nature and her understanding of how the gifts and oaths that are exchanged during the mead-drinking and feasting should ideally function in the future. She is focused on securing a future for her two young sons, Hrēðrīc and Hrōðmund. Wealhþēow mentions them specifically as part of her offering of the mead-cup to Beowulf (ll. 1181-9). She is concerned about their future and the future of the kingdom they will inherit after Hrōðgār’s death. Wealhþēow implores the young Beowulf³²⁶ and his own king to repay her sons in the future for the gifts now bestowed upon Beowulf. This mead-cup ritual is clearly meant, in part, to secure the passing of power from a father to his sons and the successful maintenance of a father’s kingdom by his sons after the father’s death.³²⁷

Thus, in any other context, mead-cups made by the legendary smith Vǫlundr would be a great compliment, a gift of unparalleled value and social significance. Níðuðr, however, has not commissioned Vǫlundr’s services in an openly reciprocal manner. Vǫlundr was enslaved and robbed by Níðuðr because of the king’s lust for wealth, prosperity and power. The king wishes for such wealth and prosperity to be unilaterally associated with his kingdom and his hall. Níðuðr essentially presumes to establish a monopoly on Vǫlundr’s productivity through a relationship of negative reciprocity in which the king exclusively controls and exploits the smith, taking whatever he wishes from him and giving nothing in return.

Vǫlundr’s transformation of Níðuðr’s sons into these drinking vessels is therefore a subversive parody of the social function of such prestigious mead-cups. To use McKinnell’s word, Vǫlundr’s revenge is “dynastic” in its scope and the skull-cups are emblematic of this (1990: 23). The reciprocal transformation accomplished by the smith is simultaneously

Frēawaru’s future resemble the sequence from ll. 1008-1231 where the celebratory speeches, gift-exchanges and mead-drinking in Heorot are juxtaposed to the scop’s song about the tragedy at Finnsburg and Hildeburh’s suffering (as the *frīðusibb folca* in that instance) as she attends the funeral pyre of her brothers and her sons.

³²⁵ Like king Hrōðgār, Wealhþēow is also described in close associations with wealth: *goldhroden*, “gold-adorned” (ll. 614, 640), *bēaghroden*, “ring-adorned” (ll. 623). Wealhþēow herself also gives out precious treasures.

³²⁶ Beowulf sits between Wealhþēow’s two sons at the mead-bench.

³²⁷ See also the description of Beowulf, son of Scyld Scēfing, who is perceptive and generous with treasures as a prince, which later serves him well as king (ll. 12-25). His father, Scyld, came into the world *fēasceft* (ll. 7), “destitute”, and brought surrounding peoples under his rule by intimidating them and removing their mead-benches (ll. 4-7).

destructive and constructive: the process of making the cups involves destroying Níðuðr's progeny and transforming them into the drinking vessels that are customarily used to affirm the patrilineal tradition that is so vital to the success of a king's power over time. With Níðuðr's patrilineal succession destroyed,³²⁸ Vǫlundr removes any hope of Níðuðr's kingdom and lineage persisting beyond his death. The gift of the cup is therefore rendered useless, and poignantly so. It is as though this gift at once satisfies and devastates Níðuðr's greed and ambition, leaving him horrifically *vilia lauss*, "without wish" (31.2).³²⁹ The cups themselves, being covered in silver and crafted finely by Vǫlundr himself, will no doubt outlast Níðuðr's kingdom. They will function as memorials of the mead-table feasting rituals that are now empty and hopeless, serving only as a reminder of Níðuðr's impotence³³⁰ as a leader, his greed and his disgrace.

Similarly, Vǫlundr specifically creates the *iarnasteinar*, "jewels, precious stones", and the *brjóstkringlar*, "brooches", specially for the queen and Bǫðvildr. These specially made items also correspond to the treatment of Vǫlundr in Níðuðr's hall and his enslaved role as an artisan. These gifts re-figure, in particular, the words and actions of the queen upon first seeing Vǫlundr in Níðuðr's hall:

‘Era sá nú hýrr, er ór holti ferr’
[...]
‘Tenn hánum teygjaz, er hánum er téð sverð
oc hann Bǫðvildar baug um þeccir;
ámun ero augo ormi þeim inom frána’ (16.7-8, 17.1-6)

‘This one is not now fitting for a household, [he] who comes
out of the wood.

³²⁸ This destruction is finalized when Bǫðvildr visits Vǫlundr to have her ring repaired. Vǫlundr takes this opportunity to seduce and impregnate Bǫðvildr, thereby asserting the smith's own patrilineal succession within Níðuðr's hall. The smith uses the verb *bæta* to describe how masterfully he will repair Bǫðvildr's broken ring. This is the same ring that Vǫlundr closely associated with his own wife and which Níðuðr stole from him, giving it to his daughter. *Bæta* can mean "to repair" (as in this instance), but it is also used in the *Poetic Edda* to mean "to pay compensation (for an injustice or injury); to make amends" (La Farge and Tucker 1992: s.v. *bæta*). This verb further reinforces that Vǫlundr's repairing of this ring (and his impregnation of Bǫðvildr) is synonymous with him making amends for the wrongs perpetrated against him.

³²⁹ The significance of Vǫlundr's revenge is further reinforced by this phrase being an echo of *vilia lauss* describing Vǫlundr in 11.4. As McKinnell says, "it is grimly appropriate that the tyrant whose motivation was greed for precious objects should receive the payment he deserves in such objects, made from the skulls of his sons" (1990: 22). In a sense, Vǫlundr "repairs" Níðuðr's greed just as he repairs the ring that Bǫðvildr breaks.

³³⁰ McKinnell suggests that it "is also possible that Vǫlundr's dynastic revenge on Níðuðr is connected with the other object of which he has been deprived, his sword (*Vkv.* 18, 20). Just as the ring seems connected with female sexuality, the sword may be a virility symbol" (1990: 23). McKinnell points to several examples from the sagas and elsewhere in which stolen swords symbolize the "loss of sexual self-esteem" of the owner. Hence, "it may seem just for [Vǫlundr] to repay this with a negation of Níðuðr's virility and a corresponding assertion of his own" (McKinnell 1990: 23).

[...]

‘His teeth lunge out, when the sword is displayed before him
and he recognizes the ring of Bǫðvildr; [his] eyes are
reminiscent of the gleaming serpent.’

The queen’s speeches function in three ways within the poem. The first two functions have primarily to do with the characterization of the queen. First, these speeches demonstrate the queen’s perceptiveness, particularly in regards to the identification of potential threats (like Vǫlundr) to the wellbeing of her offspring. Second, the queen’s words also make it clear that she is “ruthless and vindictive”, and that she is in a position of power within Níðuðr’s hall (McKinnell 1990: 19). Although Níðuðr appears to be responsible for having Vǫlundr shackled and for the redistribution of the smith’s wealth,³³¹ it is the queen “who advises that Vǫlundr’s sinews be cut in order to render him harmless” (McKinnell 1990: 19). “Advises” is possibly too subdued, and inaccurate: the queen likely *commands*, in the imperative plural (*sníðið* and *setið*),³³² that Vǫlundr’s sinews be cut and that he be isolated in the island workshop. Her words are enacted without mention of debate or mediator. McKinnell notes these first two features and suggests that Vǫlundr’s custom-made gifts for the queen are “brutally ironic” (1990: 20). McKinnell points out that Níðuðr’s queen is “the observant one, so it is appropriate that the eyes should be sent to her, and it was she who compared Vǫlundr’s eyes to those of a snake” (1990: 20).³³³ This irony is clearly at work within the poem, but it is necessary to acknowledge a third function of the queen’s words before the full significance of Vǫlundr’s custom-made jewels can be appreciated.

This third (and perhaps the foremost) function of the queen’s words is as speech acts³³⁴ that selectively define Vǫlundr in several ways. The queen’s descriptions of Vǫlundr’s

³³¹ The prose following stanza sixteen states that *Níðuðr konungr gaf dóttur sinni, Bǫðvildi, gullhring, þann er hann tók af bastino at Vǫlundar. Enn hann síálfir bar sverðið, er Vǫlundr átti* (Neckel and Kuhn 1962: 119), “King Níðuðr gave his daughter, Bǫðvildr, [the] gold ring, that one which he took from the rope at Vǫlundr’s [hall]. And he himself wore the sword, which Vǫlundr owned.” Níðuðr’s interrogation of the smith in stanza thirteen (see above) also suggests that the king is appropriating Vǫlundr’s gold as something that belongs to the king of Úlfdalir.

³³² These verbs may also be in the second person singular. In either case, they can still carry a commanding tone.

³³³ The queen is also described as *kunnig*, “well-versed, crafty,” as she receives the custom-made jewels from Vǫlundr (25.3, 35.7). McKinnell hypothesizes that if “*kunnig* means ‘skilled in foretelling the future’, it must be taken as partly ironic, since her perception that Vǫlundr is dangerous is not matched by her foreknowledge of his revenge” (1990: 20).

³³⁴ Speech-act theory generally construes language within its performative social situation (like the acts of declaring a legal sentence, making a promise or threatening someone) as opposed to the constative use of language, e.g. to state facts. In her introduction to the first volume of *Prolonged Echoes*, Clunies Ross discusses and draws upon J. L. Austin’s pioneering work in speech-act theory (Clunies Ross 1994: 14-5; cf. Richter 1998: 1101 fn. 15).

eyes and his association with the forest can each be interpreted in one of two ways. In each of these two cases, instead of defining Vǫlundr as the socialized artisan that he is, the queen's words isolate him as an uncivilized, threatening and violent outlaw. First, the queen sees the smith's association with the forest as a threatening, uncivilized characteristic (*'Era sá nú hýrr, er ór holti ferr'*). This association with the wood may connect the smith with the untrustworthy, wild, violent and forest-dwelling *vargr*, "wolf". In Old Norse poetry, prose and law codes, *vargr* can refer to a thief and outlaw, the "breaker of oaths" who is condemned to live as *skóggangsmaðr*, literally "wood-going-man".³³⁵ The queen's description of Vǫlundr as *ekki hýrr*, "not fitting for a household", not "gentle, friendly, trustworthy" (La Farge and Tucker 1992: s.v. *hýrr*), clearly implies these, or similar, negative associations. But Vǫlundr is not otherwise characterized as a violent thief or outlaw at this point in the poem. Rather, it is Níðuðr who is the predatory thief and the queen who is ruthlessly abusive. The more concrete association between Vǫlundr and the forest is that "a smith needed to live near a wood to make charcoal for his furnace" (Dronke 1997: 313).³³⁶ The queen's words reinforce a strictly pejorative interpretation of the smith in association with the wood, instead of the more practical and realistic association to making charcoal.

Second, the queen notes the snake-like gleam in Vǫlundr's eyes as a threatening feature, perhaps indicative of predatory designs upon Bǫðvildr. This description of Vǫlundr's eyes is, however, also comparable to an admirable feature of warrior-aristocrats. In *Rígsþula*, for instance, young Jarl, the archetype of a warrior-aristocrat, has eyes that are admirably described as follows: *qtul vóro augo sem yrmlingi* (34.7-8), "fierce were [his] eyes as a young snake's." According to the prose prelude of *Vǫlundarkviða*, Vǫlundr and his brothers are princes of the Sámi. Moreover, as I discuss in more detail below, the verses of the poem describe these brothers and their similarly aristocratic wives living in what appear to be aristocratic (i.e. gabled) halls.³³⁷ This information suggests that Vǫlundr is a civilized, even

³³⁵ cf. *Atlamál in grænlenzco* stanza 99.5: *vágom ór scógi* (Neckel and Kuhn 1962: 262), "by fighting [them] out of [the] woods", i.e. to free someone from outlawry through battle (cf. La Farge and Tucker 1992: s.v. *vega*). cf. *LP* (1931: s.v. *vargr*), Cleasby-Vigfusson (1957: s.v. *vargr*, *skóggangr*), Fritzner (1954: s.v. *vargr*).

³³⁶ Several Old Norse prose texts testify to the practice of men going alone into the forest for several days at a time to make charcoal (*ONP* 2010: s.v. *kol*). Consider chapter 164 of *Þiðreks saga af Bern*, where Mímir goes into the forest for three days to make charcoal (Guðni Jónsson 1961: 232). See also chapter 38 of *Njáls saga* (ÍF 12 1954: 100), chapter 30 of *Egils saga* (ÍF 2 1988: 78), chapter 1 of *Qlkofra Þáttur* (ÍF 11 1950: 84) and chapter 21 of the law code in *Jónsbók* (Ólafur Halldórsson 1904: 147-8).

³³⁷ Dronke suggests that *álfa lióði*, which describes Vǫlundr at 10.3, is best interpreted as "leader of elves", which would serve as yet another piece of evidence for Vǫlundr as an aristocratic figure (Dronke 1997: 310-11). The term *lióði* is somewhat ambiguous, however, and there is equally compelling evidence to support

aristocratic, smith and that the queen's words function as a speech-act that re-defines this smith as an isolated, uncivilized, unlawful and threatening figure.³³⁸ In addition to her orders that Völundr be physically maimed and isolated, the queen's words serve to ostracize and exploit the smith. The queen's commands have Völundr physically maimed and isolated. The queen's words also have Völundr socially isolated and cut off from the reciprocity that would otherwise characterize this artisan's activities and his relationships with the king and queen as well as the community in general. Therefore, Völundr's custom-made jewels and brooches operate as a reply to how the queen and king have defined his role as an artisan. The king and queen clearly engaged the smith on terms of negative reciprocity. In his revenge, the smith parodies his role as an artisan commissioned to exclusively serve the king and queen. Völundr transforms their two sons into custom-made artefacts that subversively embody the terms of the negative reciprocity to which he has been subjected.

3.5 Comparative approaches to Völundr's creations for Níðuðr

The examination above seems to me the most appropriate and immediately pertinent method for interpreting the gifts that Völundr makes for Níðuðr and his queen. Dronke points out, however, that the "making of drinking bowls from skulls of enemies is by no means unique to Völundr" (1997: 267). Likewise, Jón Helgason notes several suggestively parallel motifs in earlier sources (1962: 71). I will now examine these sources with particular attention to the role of the artisan and the social function of the drinking vessels. Where appropriate, I will also offer very brief commentary on possible connections between these sources and the composition of *Völundarkviða* and other Old Norse texts.

The earliest of these suggestive parallels comes from Herodotus's account of the Scythian practice of using the skulls of enemies as drinking vessels. This is also one of the most regularly noted parallels (Dronke 1997: 318; Jón Helgason 1962: 71; de Vries 1952: 184). This account appears in Book IV, chapters 64-66, of Herodotus' *Histories*:

McKinnell's interpretation, "member of the race of elves" (cf. McKinnell 2001a: 331). The epithet *vísi álfa* (13.4) is similarly ambiguous and may mean either "leader of [the] elves" or "wise one of [the] elves" (McKinnell 2001a: 332).

³³⁸ This is not overlooking the fact that the queen speaks in a subdued, perhaps private way: *stilti rǫddo*, "[she] lowered [her] voice" (16.6). Her speech-act may or may not be a public announcement within Níðuðr's hall, but it does operate in this way in the performance (i.e. reading or recitation) of the poem. Völundr's custom-made eye-jewels and teeth-brooches also suggest that the smith might have heard the queen's descriptions of his own eyes and teeth. At any rate, the audience of the poem certainly hears these words and is free to make such connections between the queen's speech and Völundr's revenge.

Their customs concerning war are as follows. Whenever a Scythian slays his first man, he drinks some of his blood. He brings the heads of all those he slays in battle back to the king, and by bringing back a head, he receives a share of whatever plunder he has taken, but if he does not bring back a head, he receives nothing. He flays the head by first cutting in a circle around the ears and then, taking hold of it, shaking off the skin. He then scrapes it out with an ox's rib and works the skin in his hands until he has softened it, after which he uses it as a handkerchief, which he proudly attaches to the bridle of his horse. And he who displays the most skin handkerchiefs is esteemed as the best man. Many Scythians make cloaks to wear from the skins by stitching the scalps together like shepherds' coats. Many also take the hands from the corpses of their enemies, skin them, and use them with the fingernails still intact as covers for their quivers. It turns out that human skin is both thick and translucent, in fact the most translucent of all types of skin because of its whiteness. Many Scythians flay the skin from the entire bodies of men, stretch them over frames of wood, and carry them on their horses as they ride about.

That is what they customarily do with the skins. They treat the skulls – not all of them, but those of their most hated enemies – in the following way. They saw off everything below the eyebrows and clean out everything that remains. If a poor man is doing this, he only stretches an untanned piece of oxhide around the outside and uses it as is. But if he is wealthy, he not only stretches an oxhide around the outside, but he gilds it on the inside as well, and the skull is then used as a drinking cup. They also do this to the skulls of their relatives if they have a dispute and one of them overpowers the other in the presence of the king. And when outsiders who are considered important come to visit a man, he brings out these heads and explains that, though these were his relatives, they brought war upon the family and he overpowered them. That is how they define a man's valor.

Once every year in each district, the local governor mixes wine in a bowl and the Scythians who in that year have killed enemies drink from it. Those who have not managed to achieve this do not taste the wine, but instead sit apart in dishonor; indeed, this is the greatest disgrace among them. But any of them who have killed a very great number of men have two cups, and drink from them both. (Strassler 2007: 308)³³⁹

³³⁹ For discussions of potential links between early Scandinavians and the Scythians, as well as the awareness of medieval Scandinavian compilers of Herodotus and accounts of the Scythians, see Clunies Ross (2004: 412-4), Faulkes (1977: 185-6), Littleton and Malcor (2008: 2-13).

Everett L. Wheeler points out that there is archaeological evidence of workshop areas that were used to make these important drinking vessels:

At Belsk on the Vorskla River, which some believe is Herodotus' joint city of the Boudini and Geloni (4.108-109), the remains of a workshop for converting skulls into drinking bowls was found. Use of enemy skulls as drinking vessels can be seen as a steppe tradition. The practice is also attributed to the Bulgars in Byzantine sources. (Wheeler 2007: 754)

This account and the associated archaeological evidence provide considerable insight into the role of the artisan. The prevalence of this practice of converting enemy skulls into prestige, gilded drinking vessels seems to have created the need for commissioned or enslaved artisans with skills in metalworking. On a more local scale, in smaller villages, it can be hypothesized that individual smiths could have had the role of transforming these skulls for local warrior-aristocrats. There is, however, no mention of skilled artisans in the account from Herodotus. The account may seem to imply that the owner of the skull does the handiwork of the transformation himself, but this is not necessarily conclusive.

The account makes it clear that these skull-cups have several social functions. For the Scythians the motivation behind converting skulls into cups is based in antagonism, empowerment and social status. The Scythians only turn the skulls of their most antagonistic enemies or adversaries into drinking vessels as part of a custom related to battle and feud. This custom is also related to annual festivals at which the skull-cups function as the basis of public displays of status. The skull-cups function to distinguish the privileged and empowered from those who are less distinguished and empowered. The skull-cups owned by a soldier are the result of that soldier's triumphs in battle. Skull-cups do not, so far as Herodotus tells us, function as gifts. The annual activities associated with the skull-cups also function as ongoing reinforcement of distinctions in social status. Those who have more skull-cups and those who can line their cups with gold are elevated above (apparently through shame and ostracism) those who have few or no skull-cups and from those who are too poor to line their skull-cups with gold. Finally, the custom is sanctioned by the king. In cases of family feud, the claiming of a skull is only valid if done as part of a contest that the king himself witnesses.

A much later account of a single skull-cup being made appears in the eighth-century *Historia Langobardorum* by Benedictine monk Paulus Diaconus (Paul the Deacon). Paul recounts that, in a battle during the year AD 567, Alboinus king of the Lombards killed

Cunimundus king of the Gepids and had a drinking vessel made out of his skull: “In this battle Alboin killed Cunimund, and made out of his head, which he carried off, a drinking goblet. This kind of goblet is called among them ‘scala,’ but in the Latin language ‘patra’” (Foulke 1907: 51). As William Foulke notes, Paul may have adapted or invented this event, since it does not appear in the only extant version of Paul’s Langobard sources, the *Origo Gentis Langobardorum* (Foulke 1907: 325, 335, 339-40). Alboinus later married Rosamund, Cunimundus’s daughter. Some years later, in a drunken state, Alboinus commanded Rosamund to drink from this vessel, and this prompted Rosamund to avenge her father by plotting Alboinus’s death. Paul also comments on the contemporary (eighth-century) renown of Alboin’s accomplishments amongst the Bavarians and Saxons:

But the name of Alboin was spread abroad far and wide, so illustrious, that even up to this time his noble bearing and glory, the good fortune of his wars and his courage are celebrated, not only among the Bavarians and the Saxons, but also among other men of the same tongue in their songs.
(Foulke 1907: 51)

The only explicit similarity between the Scythian practice and Alboin’s action is that both the Scythians and Alboin convert the skull of their enemy into a drinking vessel. There is no explicit mention of precious metal in Alboin’s case, although this is perhaps understood. It is also not clear whether Alboin himself does the work of converting the skull, or if he has a skilled artisan do it for him. There is no implication that Alboin does this as part of a more broadly practiced ethnic tradition or social structure. If anything, the account may imply that his actions, as king, are exceptional. The skull-cup later functions as a reminder to Cunimundus’s daughter that Alboin killed her father, and this incites her to revenge.

In yet another skull-cup account from AD 811, Kroummos (or Krum), leader of the Bulgarians, transforms the skull of his brutal and greedy enemy, Emperor Nikephoros I. This event appears in the *Chronicle* of Theophanes Confessor, which covers AD 284 through to AD 813. From 602 to 813, “Theophanes is for us a primary source in the sense that the writings he utilized have been almost entirely lost” (Mango and Scott 1997: v). Theophanes recounts the events of the battle of Pliska, which was fought between Emperor Nikephoros I and Kroummos (or Krum), leader of the Bulgarians in AD 811. Nikephoros I is described as surpassing “all his predecessors by his greed, his licentiousness, his barbaric cruelty” (Mango and Scott 1997: 674). His city and treasury seized by Nikephoros, Kroummos admits his defeat and asks Nikephoros to take whatever he wishes and leave in peace. The “enemy of

peace”, however, “would not approve of peace” (Mango and Scott 1997: 673). Once Kroummos is made aware of Nikephoros’ brutal and greedy nature, he has the entrances and exits of his country shut with barriers. Nikephoros is “dumbfounded”, foretelling of disaster. After two days of fighting, Nikephoros is killed on the 26 of July:

Kroummos cut off the head of Nikephoros and for several days hung it on a pole so as to exhibit it to the tribes that came before him and to dishonour us. After that, he bared the skull, riveted it on the outside with silver and, in his pride, made the chieftains of the Sklavinians drink from it. (Mango and Scott 1997: 673-4)

In this account the skull-cup is once again made from the skull of a rival leader. This cup functions as a triumphant trophy, and it is coated in silver. Although Kroummos does make the chieftains of the Sklavinians drink from this cup, there is no sense of this being part of a more broadly practiced ritual. Greed and barbarism certainly figure into the characterization of Nikephoros, perhaps bringing some sense of justice to the conversion of his skull into a drinking vessel. There is no explicit mention of whether or not an artisan was commissioned to transform the skull. Kroummos was likely in a position to commission such work.

Another account of a skull-cup appears in the *Russian Primary Chronicle*, which relates the death of Svyatoslav I of Kiev in AD 972. In the ten years prior to his death, Svyatoslav I was successful in conquering an impressive amount of eastern Europe, and in 971 he managed to take control of the Bulgarian city of Pereyslavets “with great courage” (Cross and Sherbowitz-Wetzor 1953: 88). Byzantine Emperor John I Tzimiskes tries to learn about Svyatoslav’s character by sending an envoy with precious gifts, “to discover whether Svyatoslav liked gold and silks” (Cross and Sherbowitz-Wetzor 1953: 88). This “clever envoy” is dispatched with orders to carefully observe Svyatoslav’s reaction to the gifts: “Svyatoslav, without noticing the presents, bade his servants to keep them.” A second envoy is dispatched, this time with “a sword and other accoutrements” (Cross and Sherbowitz-Wetzor 1953: 88). The response from Svyatoslav is different: “The Prince accepted these gifts, which he praised and admired, and returned his greetings to the Emperor. [...] Then the boyars remarked, ‘This man must be fierce, since he pays no heed to riches, but accepts arms. Submit to tribute’” (Cross and Sherbowitz-Wetzor 1953: 88-9). With peace made between the Rus and the Emperor, Svyatoslav resolves to return to Kiev for reinforcements. On his journey, he is attacked by the Pechenegs and killed:

When spring came in 6480 (972), Svyatoslav approached the cataracts, where Kurya, Prince of the Pechenegs, attacked him; and Svyatoslav was killed. The nomads took his head, and made a cup out of his skull, overlaying it with gold, and they drank from it. But Sveinald returned to Yaropolk in Kiev. Now all the years of Svyatoslav's reign were twenty-eight. (Cross and Sherbowitz-Wetzor 1953: 90)

Once again, the skull-cup motif here functions between rival leaders, and the skull is also coated with metal, in this case gold. Svyatoslav is, however, characterized as a courageous and impressive leader and warrior. There is no sense of the greed and brutality that characterize Nikephoros or Níðuðr. This account also provides no details on the role of the artisans that might be involved in transforming the skull into a gilded cup. Finally, there is also no information to suggest that the Pechenegs regularly made such cups or drank from them as part of regular ceremonies.

There was substantial interaction between Scandinavia and the early Russian state (cf. Stang 2003: 556-8; Pritsak 2003: 555-6). It is likely that events such as the death of Svyatoslav would have been known throughout northern Europe.³⁴⁰ Moreover, the story of Svyatoslav's death was likely known in Scandinavia during the years immediately following his death. Svyatoslav's first son, Vladimir,³⁴¹ fled in fear of his feuding brothers, returning in 980 "with Varangian allies" to conquer Kiev (Cross and Sherbowitz-Wetzor 1953: 91). Vladimir's connections to Scandinavia are well attested. Óláfr Tryggvason of Norway stayed at Vladimir's court (Cross and Sherbowitz-Wetzor 1953: 242). Vladimir had several wives and many children. One of his children is Yaroslav I the Wise, who ruled Kiev from 1019 to 1054. In 1019 Yaroslav married Swedish princess Ingigerðr. Yaroslav's son (one of many sons and daughters by Ingigerðr) Vsevolod I was Grand Prince of Kiev from 1076 to 1077 and 1078 to 1093. Vsevolod married a relative of Constantine in 1046 and had a son named Vladimir II Monomakh. Vladimir II Monomakh was Grand Prince of Kiev from 1113 to 1125. In 1125 Vladimir II married Gytha, daughter of Harald Godwinsson King of England. The first son of Vladimir II and Gytha is Mstislav I. Mstislav I (Haraldr in Norse sources) was Grand Prince of Kiev from 1125 to 1132. He married Christina, daughter of Inge, King

³⁴⁰ Jonathan Shepard notes the "Rus' reliance on axes, broadswords and shield-walls during Sviatoslav's Balkan campaigns, the names of certain commanders (including the *berserkr* 'Ikmor' [= *Ingimarr*?]) and, back in Rus, the occurrence of boat-burnings and chamber graves in burial grounds in urban centres, attest close affinities of the militaro-commercial elite with tactics and religious rites practised elsewhere in the Nordic world" (Shepard 2008: 509).

³⁴¹ Vladimir (Valdemar in the Norse sources) was Svyatoslav's only illegitimate son, by Malusha, stewardess of Vladimir's aunt Olga (Cross and Sherbowitz-Wetzor 1953: 87).

of Sweden, in 1095.³⁴² This close interaction between the lineage of Svyatoslav I and Norse-speaking areas suggests that there were both means and reason for the transmission of stories about Svyatoslav's death during the centuries prior to the recording of *Völundarkviða* in the *Codex Regius*.

There is also a possible parallel to the skull-cup motif within the *Codex Regius* itself (Dronke 1969: 135-6; Jón 1962: 71). *Atlamál in Grænlensko* preserves several details which suggest that this poem was likely composed in the Norse colony on Greenland (perhaps in the eleventh or even twelfth century), therefore making it decidedly later in provenance than *Völundarkviða* and *Völuspá* (Dronke 1969: 107-11). In stanzas 82-3 of *Atlamál in Grænlensko*, Guðrún Gjúkadóttir, wife of king Atli, kills their two sons and turns their skulls into drinking vessels. At the funeral feast for her brothers, whom Atli had killed, Guðrún then has her husband drink from these vessels while also serving him the roasted hearts of their sons:

‘Maga hefir þú þinna mist, sem þú sízt scyltir;
 hausa veiz þú þeira hafða at qlscáloim,
 drygða ec þér svá dryccio: dreyma blett ec þeira.’ (82.1-6)

‘You have lost your sons, not at all as you should have. You have their skulls, you know, as drinking vessels. I prepared your drink thus: with their blood I mixed it.’

‘Tóc ec þeira hioito oc á teini steictac,
 selda ec þér síðan, sagðag, at kálfs væri;
 einn þú því ollir, ecci réttu leifa,
 togttu tíðliga, trúðir vel ioxlom.’ (83.1-8)

‘I took their hearts and I roasted them on a spit, then I gave them to you, said that [it] was calf's [flesh]: you alone were responsible for that, you decided not to leave [any], you chewed avidly, trusted fully in [your] molars.’

The paraphrase of this event in *Skáldskaparmál* includes a relatively complete survey of the sequences belonging to the legendary narrative of the Niflungs and the gold treasure that has its origins with the gods (Faulkes 1998a: 46-51).³⁴³ In his quest to find the location of the Niflung gold in the Rhine, Atli kills Högni and Gunnar, Guðrún's brothers and the only two people who know the last location of this legendary gold treasure. This paraphrase in

³⁴² This information is assembled from Pritsak (2003: 555-6) and the “Genealogy of the Rurikids in the Period Covered by the Primary Chronicle”, which is found at the very end of Cross and Sherbowitz-Wetzor's monograph.

³⁴³ *Völunga saga* also presents this feast scene, although with fewer details (Byock 1990: 103-5; Guðni and Bjarni 2010: ch. 38).

Skáldskaparmál also includes the events described in this excerpt from *Atlamál in Grænlensko*:

Litlu síðar drap Guðrún tvá sonu sína ok lét gera með gulli ok silfri borðker af hausum þeira, ok þá var gert erfi Niflunga. At þeira veizlu lét Guðrún skenkja Atla konungi með þeim borðkerum mjöð ok var blandit við blóði sveinanna, en hjörtu þeira lét hon steikja ok fá konungi at eta. En er þat var gert þá sagði hon honum sjálfum með mǫrgum ófögnum orðum. Eigi skorti þar áfenginn mjöð svá at flest fólk sofnaði þar sem sat. Á þeiri nótt gekk hon til konungs er hann svaf ok með henni sonr Hogni ok vágu at honum. Þat var hans bani. (Faulkes 1998a: 49)

Soon afterwards Guðrún killed her two sons and had made, with gold and silver, goblets out of their skulls, and then was held a funeral feast for the Niflungar. At this feast Guðrún served mead to king Atli in those goblets and [the mead] was mixed with [the] blood of the boys, and their hearts she had roasted and given to the king to eat. And when that was finished then she spoke to him in person with many unpleasant words. There was no shortage there of strong mead so that nearly all people slept there where they sat. During that night she went to the king where he slept and her son Hogni [went] with her and struck at him. That was his death.

It may be implied that the skulls are converted into metal goblets in *Atlamál in Grænlensko*, but there is no explicit mention of metal. The paraphrase in *Skáldskaparmál* explicitly associates silver and gold with the goblets. The term used here is *borðker*, “drinking vessel, beaker, goblet” (ONP 2010: s.v. *borð-ker*). In thirteen of the thirty-six prose attestations for *borðker* the term refers to a drinking vessel of gold or silver, and in one case the *borðker* has inset *gimsteinar*, “precious stones” (ONP 2010: s.v. *borð-ker*). Neither *Skáldskaparmál* nor *Atlamál in Grænlensko* provide any details or implications about the role of the artisan who may have made these skull-cups. Dronke suggests that king Alboin “would have smiths at his command who could turn his father-in-law’s skull into a goblet”, but that this would be “inappropriate for Guðrún” to do herself (1969: 135-6). I see no reason why this should be considered inappropriate: Guðrún is clearly an aristocratic queen with power and agency of her own, and as a member of the Niflung lineage she does not shy away from activity and responsibility, covert or otherwise. Although there is no such detail in the poem one way or the other, it would not be out of character, nor at all unlikely, for Guðrún to order a smith to transform her sons’ skulls into goblets.

The skull-cups in *Atlamál in Grænlensko* function as part of a revenge plot meant to disgrace Atli and destroy his progeny. The revenge is accomplished at a public memorial feast for Guðrún's brothers. As part of this revenge, Guðrún also has Atli unwittingly consume the blood of their sons, mixed into his drink, and the hearts of their sons. It might be considered ironic that Atli's quest to find the Rhine-gold and his killing of Högni and Gunnar result in Guðrún turning his own progeny into gilded drinking vessels to satisfy his appetite for both food and wealth.

These accounts present general parallels to *Völundarkviða*, at least in so far as skulls are converted into drinking vessels. The account from *Historia Langobardorum* is important in that it may testify to the circulation of this motif (if it was part of Alboin's widely-circulating fame) amongst the Saxons and the Bavarians during the eighth century. In other words, the motif of a skull being transformed into a drinking vessel might have been familiar during the period in which an earlier form of the extant *Völundarkviða* narrative was likewise circulating. Paul's citation of the word "scala" is suggestively similar to the word *scál* as it appears in *Völundarkviða*. As is the case in *Völundarkviða*, in the Old Norse corpus the word *skál* primarily refers to bowls or cups (*gullscálar* in *Atlakviða in grænlensko* 10.3) used to contain drink (Fritzner 1954: s.v. *skál*; Cleasby-Vigfusson 1957: s.v. *skál*).³⁴⁴ As de Vries notes, the suggestion has been made that ON *skál* either has an original sense or comes from an Indo-European root meaning the top part of the skull (the calvaria) as distinct from the rest of the skull (de Vries 1977: s.v. *skál*). de Vries also suggests that *skál* is one of several words that appear to be related to *sax*, with root forms meaning "the thing that cuts in," that also refer to utensils or bowls made of metal, wood or woven material (de Vries 1977: s.v. *sax*, *skál*, *skalli*, *skel*). de Vries also points out, however, that it should not be assumed that this is evidence of a general practice of making drinking cups from skulls (de Vries 1977: s.v. *skál*).

Herodotus's account of the Scythian practice is, as Dronke points out, a "most detailed description of the conversion of enemy skulls into drinking vessels" (1997: 318). And these details do seem similar to the much more concisely described distinction between the crania of Níðuðr's sons and the overlaying scalps: *enn þær scálar, er und scqrum vóro, / sveip hann útan silfri, seldi Níðaði* (24.5-8), "and those cups, which were under [their] hairs, he covered without in silver, presented to Níðuðr." The anatomical and procedural

³⁴⁴ The secondary usage of *skál* refers to "scales" (Fritzner 1954: s.v. *skál*; Cleasby-Vigfusson 1957: s.v. *skál*).

similarities here may suggest some sort of distant relation between the traditions described in Herodotus and the actions of Vǫlundr.³⁴⁵ The *Historia Langobardorum* and Theophane's chronicle present a much closer (historically, geographically and linguistically) parallel to the motif of skulls as drinking vessels in *Vǫlundarkviða*. The *Russian Primary Chronicle* has an even closer relationship to the contexts in which *Vǫlundarkviða* might originally have been composed and, later, written.

The artisanal procedure of transforming a skull into a gilded drinking vessel is certainly a close parallel across all these sources. There are, however, several inconsistencies in how this motif functions in *Vǫlundarkviða* as opposed to these other sources. The motivation, pattern of behaviour, and social function of the skull-cups are only similar in the most general ways. Vǫlundr's actions are primarily artisanal in context and expression: the smith is portrayed as an *artisan* who subversively parodies the significance of custom-made artefacts for a king and queen as well as the role of artisanal products in social customs more generally. This smith's actions are, therefore, similar to these sources only in so far as Níðuðr and his family are considered Vǫlundr's enemies, and only in so far as he converts the skulls of his enemies into prestigious gilded drinking vessels. Vǫlundr does not keep the skulls for himself as trophies. This is not an action that functions as part of a sanctioned system of affirming established social distinctions between the empowered and un-empowered. Vǫlundr makes the skull-cups as part of his subversive revenge. Vǫlundr's conversion of the skulls is a private action that he later publicly declares. The memorial function of the skull-cups is perhaps similar for Níðuðr and his family as well as for Rosamund and Atli. The skull-cups function for Níðuðr as a horrific reminder of the murder of his sons. Similarly, the skull-cup that Alboin makes reminds Rosamund of her father's death in battle. Rosamund's situation as the wife of her father's killer may be similar to the complications caused by Vǫlundr's impregnation of Bǫðvildr. The parallels are strongest in regard to *Atlamál in Grænlensko*, where the motif of the skull-cups also involves a dynastic revenge. The later date of *Atlamál in Grænlensko*, however, likely means that the motif is reflexive of *Vǫlundarkviða*. Moreover, *Atlamál in Grænlensko* contains nothing of the focus upon the role of the artisan as it appears in *Vǫlundarkviða*.

³⁴⁵ The shape of the skull itself may also, however, dictate that the part of it under the scalp functions best as a drinking vessel.

Vqlundarkviða may exhibit an awareness of the practice of transforming skulls into ornate drinking vessels. However, this poem treats the motif specifically as it relates to the smith's own social situation as an artisan rather than as an action performed by a king or a warrior against his enemies. Vqlundr's actions are not properly parallel to any of these sources. What Vqlundr does to Níðuðr's sons is not part of a cultural tradition or publicly sanctioned practice. Unlike these sources, Vqlundr does not keep the trophies for himself, but rather gives them to his patrons/captors and leaves empty-handed. This is primarily a parody of the artisanal. *Vqlundarkviða* presents a scathing commentary upon the social effects of the inappropriate desire for the artisanal. As Callmer suggests, *Vqlundarkviða* has a certain didactic quality to it:

It stresses both the importance of the skilled craftsmen and their exposure to the arbitrariness of power of local rulers. The main motif of the myth aims at drastically demonstrating necessary restraint in handling the skilled craftsmen. To demand complete submission and to establish serfdom leads to total catastrophe. It is most important to accept the independence of the craftsman and to reach a respectful agreement which is advantageous for both sides. The reason for this necessity is the importance of objects of great prestige which could only be produced by individuals wielding exclusive knowledge of how the specialized crafts could be executed with complete mastery. The existence of this relationship gives a welcome insight into power relationships of great complexity. It also shows us very clearly that the mostly simple models of power relationships in early medieval society are inadequate. Perhaps symbiosis and balance between craftsmen and rulers better describe the relationship. (Callmer 2003: 358)

Vqlundarkviða is based in an understanding of the relationship between skilled artisans and social elites, and the tensions that can arise out of this relationship. Vqlundr's revenge functions as a subversive parody of the social networks of gift-giving, trade and production in early medieval Scandinavia and Anglo-Scandinavian England.

3.6 Performance of spatial, networked relations

The preceding chapters have examined the evidence of smithing motifs within *Vqluspá* in relation to archaeological evidence and studies that apply central-place theory to early medieval Scandinavia. I will now briefly examine the narrative of *Vqlundarkviða* in relation to crafting motifs and spatial concepts and networks. This examination reinforces

that the basis for Vǫlundr's actions is best understood as a statement about the relations between craftspeople and aristocratic power in the multi-functional central-place complex.

3.7 The structures associated with Vǫlundr, his brothers and the swan-maidens

Vǫlundarkviða is set in two settlement locations, the first being the settlement of Vǫlundr, his brothers and their wives, and the second being Níðuðr's settlement. The first such settlement is located on the *sævar strönd*, "beach of a lake",³⁴⁶ of Úlfsiár in Úlfsdalir (1.5, 5.2, 6.4, 13.6). This location is characterized rather differently in the prose prelude and in the verse. First, in the prose prelude, there is said to be a *hús*, "house or farmstead",³⁴⁷ which the three brothers *gøra*, "build" (Neckel and Kuhn 1962: 116). Then, also in the prose prelude, there is said to be a *skáli*, "dwelling, house", where the brothers live with the swan-maidens (La Farge and Tucker 1992: s.v. *skáli*). *Skáli* can also refer to "a hut, shed", structures put up primarily for temporary use (Cleasby-Vigfusson 1957: s.v. *skáli*). Cleasby-Vigfusson suggests that this is "the earliest Norse sense, and it is still so used in Norway" (1957: s.v. *skáli*). In some compounds *hús* may also refer to such huts or outbuildings (Cleasby-Vigfusson 1957: s.v. *hús* II). The secondary meaning of *skáli*, however, is "hall", and it appears in several compound words that refer to a large, often ceremonial and public space (Cleasby-Vigfusson 1957: s.v. *skáli*). And the term may also refer to the entrance chamber for a large hall (Cleasby-Vigfusson 1957: s.v. *skáli*). Fritzner suggests that the primary meaning of *skáli* is "a large room", equivalent to the main room in a large hall (1954: s.v. *skáli*, *setstofa*, *sethús*). From the limited and ambiguous information given in this prose prelude, it is possible that the three brothers first establish a rather temporary settlement. It is also possible that they establish (either immediately or at some later date) something more permanent. It is possible that this establishment, which is later called a *skáli*, may have grown or somehow changed by the time the swan-maidens arrive.

In the verse, however, it is not until after the departure of the swan-maidens that a description is made of the dwellings of the brothers. In stanza four, when the brothers return

³⁴⁶ cf. La Farge and Tucker (1992: s.v. *strönd*)

³⁴⁷ It is difficult to determine if *hús* n. is singular or plural here. La Farge and Tucker suggest that within the *Poetic Edda* *hús* in the singular it tends to mean "house", while in plural it tends to mean "farmstead" (1992: s.v. *hús*). Elsewhere the singular *hús* can refer to a "room", i.e. a building with only one single-room or a single room within a building that contains multiple divisions (Cleasby-Vigfusson 1957: s.v. *hús*; Fritzner 1954: s.v. *hús* 1. and *hús* 2.). The singular can also refer to a more fortified building (Fritzner 1954: s.v. *hús* 4.). The plural also appears to more generally refer to "a group of buildings" (Cleasby-Vigfusson 1957: s.v. *hús* II.).

to find their wives gone, they come back to their *salir*, “halls”, “buildings” or “rooms”.³⁴⁸

These *salir* likely refer to a complex of buildings, i.e. several halls.³⁴⁹ Here the brothers *gengo út oc inn oc um sáz* (4.5-6), “went out and in and looked about.” This description appears to imply repetitive searching of multiple distinct spaces, perhaps even out of disbelief or despondency at the sudden disappearance of their wives. It also implies several distinct buildings. In stanza five, Vǫlundr also sits alone in one of these *salir*, “buildings, rooms”, creating seven hundred rings and cooking his meals.

In stanza seven, Níðuðr’s men dismount from their horses at the *gafl*, “gable”, of this hall and they *gengo inn þaðan endlangan sal* (7.3-4), “walked in from there the length of the hall.” This suggests a rather expansive interior that is appropriate to a long-hall with at least one gabled entrance chamber. This is not necessarily anything as monumental as the great halls at Lejre and Gudme (Jørgensen 2003: 176-7, 181-2; Vang Petersen 1994: 37), but it does imply a relatively large hall structure with a gabled entrance.³⁵⁰ This is also the first of three times this phrase (*endlangan sal*) is repeated in the poem: it is repeated twice more when Níðuðr’s queen traverses the ceremonial space of the hall, once before Vǫlundr’s maiming (16.2) and once after Vǫlundr’s revenge (30.4). The open, ceremonial space of the long rectangular hall clearly serves as a significant, recurring motif in *Vǫlundarkviða*.

The terminology used to refer to these structures is, however, ambiguous and it is difficult to determine exactly what might be implied. It is possible that a different understanding of these living spaces is presented in the thirteenth-century editor’s prose (where *hús* and *skáli* are used) and in the older verses of the poem (where *salr* is used). As outlined above, La Farge and Tucker suggest that *hús* may have a slightly different meaning from *salr* within the *Poetic Edda* (1992: s.v. *hús*, *salr*). Outside of the *Poetic Edda*, however, *hús* and *salr* appear to be relatively interchangeable terms. In chapter 14 of *Gylfaginning*, for example, the terms *hús* and *salr* are simultaneously used to refer to the same structures (Faulkes 2000: 15). It could also make sense, however, that the first settlement established by the brothers might have developed over time. Presumably they first occupied the location for

³⁴⁸ In the singular, *salr* denotes “hall, house consisting of one room”, but in the plural (as here) “it denotes the whole complex of buildings” (La Farge and Tucker 1992: s.v. *salr*). See also Brink’s discussion of *sal* in literary, archaeological and toponymic contexts (1996: 255-8).

³⁴⁹ *Salir* may also refer to multiple rooms within a larger hall (La Farge and Tucker 1992: s.v. *salr*).

³⁵⁰ See also Söderberg’s discussion of the multiple gabled chambers associated with the various phases of the hall buildings at Järrestad (2003:288-9). A smithing workshop was contained in a small house some ten metres south-west of this hall (Söderberg 2003: 297-8).

some time before the swan-maidens appeared. The three couples then live there for eight years before the poem itself offers any description of their habitations. Originally the brothers may have constructed a settlement that they intended to use periodically or temporarily as part of their seasonal, nomadic hunting lifestyle. It must also be considered that Vǫlundr (and perhaps Slagfiðr) and the swan-maidens are associated with crafting. Perhaps this settlement is a small but developing workshop community like Tissø, Helgø or Åhus,³⁵¹ where other individual craftspeople or groups temporarily reside and collaborate on their itinerant journeys (Callmer 2002: 142, 155). Alternatively, it may be an aristocratic, multi-functional central place like Heorot in *Beowulf* (ll. 64-85.). The brothers are also princes of the Sámi (at least according to the prose prelude), and the swan-maidens appear to have aristocratic connections also.³⁵² So this may be intended from the beginning as their own prestigious settlement, which they establish as a more permanently occupied and multi-functional central-place complex where spinning, smithing, fishing, hunting as well as feasting and other activities could take place. We are told nothing of other visitors or inhabitants in the area, and very little about the activities and functions of the site. This is, however, not to say that such things were not understood. In *Vǫlundarkviða* this settlement site is suggestively related to refined craftsmanship, aristocratic status, the marriage bond, and itinerancy. The three brothers marry and remain there for at least eight years, presumably going out on frequent hunting expeditions while their wives spin by the shore of the lake. Vǫlundr remains beyond these eight years, for however long it takes Níðuðr to notice the isolated presence of this wealthy and skilled craftsman. The poem is not forthcoming on details that could form the basis of a decisive interpretation. It is suggestive, however, that in stanza seven Vǫlundr is said to live in a relatively large hall with a gabled entrance. Is this the hall (or one of the halls) that he and his brothers first built over eight years ago? Or is this a later addition to the complex they first started? Once again, the details are not forthcoming.

It is distinctly unusual, however, that Vǫlundr occupies such a space by himself. As the archaeological and anthropological evidence shows, even a modestly large hall of this sort was clearly the hallmark of an important settlement within a larger central-place complex. The hall may have had several interior divisions. It would also have had several

³⁵¹ Although both Tissø and Åhus likely functioned as workshop sites for itinerant craftspeople, the two sites are markedly different in that Tissø clearly had a central hall with cult functions attached to it. Åhus did not. Thus, if the poem implies that the first settlement of the brothers is associated with a large ceremonial hall, then the comparison to Tissø is more appropriate.

³⁵² In stanza fifteen Qlrun is said to be *Kiárs dóttir*, “Caesar’s daughter” (Neckel and Kuhn 1962: 119).

associated outbuildings at the very least, and likely an agrarian space as well. The hall would also be associated with a surrounding network of smaller farms, and probably even other halls, each with its own complex of buildings and spaces. Völundr's isolation in such a space is striking. This isolation may suggest that a more devastating event occurred than the sudden departure of the three swan-maidens of their own accord.

3.8 The structures associated with Níðuðr and his queen

The other settlement that is described in the poem is Níðuðr's. This settlement is also introduced with the term *salr*. In stanza sixteen the queen enters this hall just as the warriors first entered Völundr's hall: *Hon inn um gecc ennlangan sal, / stóð á gólfi*³⁵³, *stilti rōddo* (16.3-6), "She went in along the length of the hall, stood at the hallway, lowered [her] voice." On this occasion, the repeated *ennlangan sal* phrase once again implies a large, open interior space, one in which the queen is gazed upon as she walks down the length of the hall just as the poet has his audience gaze upon her. So too it seems she must keep her voice down to avoid being heard within the open, public space of the hall. In this context Völundr is no longer associated with his own hall: suddenly he is interpreted as the threatening one *er ór holti ferr* (16.8), "who comes out of the wood."³⁵⁴ Níðuðr's hall appears again in stanzas twenty-two, twenty-three, thirty and thirty-three. From these and other instances it is clear that Níðuðr's hall is populated by an array of *meyiar* (22.5), "maids or slave women", *salþióð* (22.6), "house-people, domestics, servants", a preferred slave of the king,³⁵⁵ several armed *seggir* (6.5), "warriors", as well as aristocratic *bræðr* (23.3), "brothers". Níðuðr clearly presides over an aristocratic hall with many servants and warriors.

The poem also makes it clear that Níðuðr has established this hall within a larger context, i.e. a multi-functional central-place complex. As is the case at archaeological sites like Tissø (cf. Jørgensen 2003: 181-99), and in *Egils saga*,³⁵⁶ Níðuðr built a functional smithing workshop in association with his main hall, but at some distance from this main residence. In stanza thirty-four Völundr himself commands Níðuðr to go to the smithy: *Gacc*

³⁵³ La Farge and Tucker suggest *gólfi* can mean "1. *section* of a house created by the position of the roof supports (Grm. 24). 2. the middle area of the house between the two **flet**, bounded by rows of roof supports: *hallway, floor*, sometimes with flagstones (Vm. 9, 11, etc., Hym. 14, etc.). 3. *floor* in general (Rp.)" (1992: s.v. *gólfi*).

³⁵⁴ As I mention above (see footnote 336 on page 239), this association with the forest may be interpreted in terms of the smith's need for convenient access to wood for making charcoal. See also the discussion of *Járnviðr* and the importance of forests as a source of fuel for smithing in Chapter 2.

³⁵⁵ "'Pacráðr, þræll minn inn bezti'" (39.1-2), "'Pacráðr, the best slave of mine.'"

³⁵⁶ As discussed above, Skalla-Grímr has a smithy established some distance from his main residence (ÍF 2 1988: 78-9).

þú til smiðio, þeirar er þú gorðir (34.1-2), “You go to the smithy, that one which you [i.e. Níðuðr] built.” This workshop is located *í sævar stqð*, “at the landing place of [the] sea” (20.8). This location appears to be established on the shore of a body of water. It may be near an appropriate landing site for ships, making it an ideal trading and production site. The workshop also appears to be isolated on an island, *ey* (29.8) or *hólmr* (40.4, 41.4), of some sort, perhaps a tidal island that is sometimes connected to the mainland at low tide (Dronke 1997: 326; La Farge and Tucker 1992: s.v. *ey*, *hólmr*).³⁵⁷ This reference to the smithing workshop as something which Níðuðr built suggests the idea of a multi-functional central-place complex. It is perhaps implied that Níðuðr’s settlement follows a pattern of development not unlike that illustrated by Tissø, or that such is the hope of the king. This progression begins with a modest hall, a small livestock yard, a modest cultic space or building situated close to the hall, and a workshop building situated at the periphery of the fenced yard. This main farmstead grows over the course of several generations into an influential central-place complex with a much larger hall and cultic building as well as an expansive workshop area and market expanding to the south along the shore of a lake. Within *Vqlundarkviða* the impression is definitely that Níðuðr has established a workshop in relation to his hall.

The reference to a *salgarðr*, “courtyard”, may also suggest that the king established some sort of central agrarian, ceremonial or cultic space in direct association with his hall. Following Vqlundr’s revenge, the queen once again enters the hall and walks the length of it. But the king is not there now. The hall is empty:

<i>Úti stendr kunnig</i>	<i>qván Níðaðr,</i>
<i>oc hon inn um gecc</i>	<i>endlangan sal;</i>
<i>enn hann á salgarð</i>	<i>settiz at hvílaz</i> (30.1-6)

Outside stands the wise wife of Níðuðr, and in she went along
the length of the hall; but he in the courtyard sat himself to rest.

Níðuðr may be sitting at a chamber used as an entrance to his hall. He may also be sitting in the central courtyard formed by several large halls, as in the Trelleborg formation (Haywood 2000: 93-4). This *salgarð*, if it can be interpreted as a central open space, might also be compared to the sacral spaces that are often found in direct relation to large halls. The poem is, once again, not forthcoming on such details. At any rate, the repeated *inn um gecc*

³⁵⁷ Kenneth Cameron notes the prominence of ON *hólmr* in toponyms in England, suggesting this term might also have referred to an island or area of “dry land in a fen” (1961: 79).

endlangan sal phrase is poignant here. It reinforces the emptiness of the hall, as was the case with Vǫlundr the first time this phrase appeared. This repetition also reinforces the king's avoidance of the public and ceremonial space inside the hall: now that his sons are gone the social function of the hall is lost to him.

As far as the terminology of ceremonial halls is concerned, and the role of oaths and mead-cups within those halls, it is significant that the poem concludes in Vǫlundr's words. Before revealing his revenge (and the nature of the drinking vessels) to the king, the smith speaks commandingly over Níðuðr. Vǫlundr extracts oaths from the king within his own hall, ensuring that the king will not harm Vǫlundr's new wife, who is now pregnant with Vǫlundr's child within Níðuðr's own hall:

*‘Eiða scaltu mér áðr alla vinna,
at scips borði oc at scialdar rǫnd,
at mars bægi oc at mækis egg,
at þú qveliat qvǫn Vǫlundar
né brúði minni at bana verðir,
þótt vér qvǫn eigim, þá er þér kunnið,
eða ióð eigim innan hallar.’ (33.1-14)*

‘Oaths must you to me first swear, by [the] side of [the] ship
and by [the] metal rim of [the] shield, by [the] shoulder of [the]
horse and by [the] blade of [the] sword, that you will not kill
[the] wife of Vǫlundr, nor become the slayer of my bride, even
if we have a wife who is to you known, and [even if we] have a
child within [your] hall.’

Vǫlundr's speech exhibits several important statements about the balance of power in Níðuðr's hall. One could say that the tables have been turned within this hall. It is Vǫlundr who orders the king around now, not *vice versa*: ‘*Eiða scaltu mér áðr alla vinna[...] Gacc þú til smiðio*’ (33.1-2, 34.1), “‘Oaths must you to me first swear [...] You go to [the] smithy.’” Vǫlundr also uses the word *hǫll/hall*, “hall”, which is used nowhere else in the poem.³⁵⁸ It is clear that Vǫlundr has literally, figuratively and symbolically undone the power structure that held together the multi-functional central-place complex that Níðuðr and his wife had established.

In summary, although much of the information about ceremonial or residential structures in *Vǫlundarkviða* is either ambiguous or lacking, it is clear that Vǫlundr and

³⁵⁸ *Hǫll* is a common enough term for a hall (Fritzner 1954: s.v. *hǫll*; ONP 2010: s.v. *hǫll*; Brink 1996: 251-5). It is interesting that it should be used only once, and on this occasion, in the poem, particularly since it is not needed for either alliteration or metre: *salr* (gen. sing. *salar*), “hall”, could work just as well here as it has elsewhere in the poem.

especially Níðuðr are associated with relatively large, likely ceremonial halls. As the archaeological evidence from early medieval Scandinavia shows, halls like this generally functioned within multi-functional central-place complexes. These halls were situated in immediate relation to sacral spaces, agrarian spaces and workshop spaces. Some settlement sites, particularly those on shores or near waterways (as is the case with both Vǫlundr's hall and Níðuðr's), also developed extensive workshop and trading areas that were distinct from the central, aristocratic complex.

3.9 Conclusion: smithing and artisanal motifs in *Vǫlundarkviða*

Vǫlundarkviða portrays Vǫlundr's revenge as an artisanal as well as social statement. The importance of artisanal themes and details in the poem is first established in the detailed descriptions in stanzas one and five. This artisanal theme is apparent in the description of the swan-maidens spinning fine linens and in Slagfiðr's name. Of course, the artisanal is most strongly associated with Vǫlundr himself. The reputation of this smith precedes him in the Germanic tradition. The remarkable technical detail in this poem reinforces that Vǫlundr is skilled in working with precious stones, bone, gold, silver, iron and steel. The poem clearly emphasizes the importance of both the technical actions of the smith as well as the body of knowledge and skill possessed only by the smith. The last half of *Vǫlundarkviða*, however, presents the smith as an artisan delivering prestige items to a particular queen and king. Avenging his mistreatment in this relationship of negative reciprocity, Vǫlundr returns the skulls of Níðuðr's sons to the king as a parody of the usual role of an artisan commissioned to produce custom-made items for a patron. Vǫlundr's custom-made items function as a devastating parody of the significance of mead-cups and ornate treasure in patrilineal feasting, gift-giving and oath-making rituals within the aristocratic hall.

Vǫlundarkviða demonstrates the destruction and abuse that result from acting upon the covetous desire to unilaterally control, first, skilled craftspeople of different ethnic or social extraction and, second, the distribution of valuable goods that define and maintain social structure and power within early medieval Scandinavia. The master smiths, the *vǫlundar*, could help to establish and maintain cultural, aristocratic, spiritual, military and agrarian distinctions and prowess in the central-place complexes within which they worked. They could also threaten to undo them. *Vǫlundarkviða* demonstrates these possibilities, as well as the challenges of symbiotically sustaining familial and communal structures from

both the aristocratic, colonial Swedish perspective and the aristocratic, crafting, hunting, itinerant indigenous Sámi perspective.

Conclusion: the role of smithing motifs in *Völuspá* 7, 40 and *Völundarkviða*

In this dissertation I have examined smithing motifs and smith-figures in the Old Norse poems *Völuspá* and *Völundarkviða*. These motifs can be captivating and enigmatic, and many scholars have attempted to explain the role of smithing motifs and smith-figures within these and other mythological and legendary narratives. This study has attempted to show how these motifs and figures function in relation to the technical features and social contexts of smithing work in the communities and cultures during the period in which extant sources for the Old Norse myths were composed and circulated.

As the first poem in the *Poetic Edda* and one of the chief sources for Old Norse mythological figures and narratives, *Völuspá* is an important poem in which metalworking and other crafting motifs play a key role. In particular, key metalworking motifs appear in stanzas 7 and 40. In stanza 7 of *Völuspá* the Æsir establish *aflar*, “forges/furnaces”, as part of their first settlement. These *aflar* refer to the forges, and possibly furnaces, that are in a workshop area (or several workshop areas) in exclusive association with the first settlement of the Æsir. *Völuspá* 7 portrays smithing workshops as foundational parts of a multi-functional central-place complex. Both large-scale evidence (like the evidence gathered by archaeological investigations of settlement patterns and networks throughout medieval Scandinavia) and small-scale evidence (like the forge-stone from Snaptun and the short descriptions from *Völuspá* 7 and *Gylfaginning* 14) suggest that we are justified in interpreting “the archaeological and the written record as different expressions of a single cosmological model” (Hedeager 2002: 3). Smithing activities and facilities are integral aspects of both the mythological ideal and historical reality of a central-place complex.

Furthermore, this combined evidence from the archaeological and written sources shows that metalworking spaces are understood as distinct from aristocratic halls and sacral spaces within the central-place complex. The hierarchal and spatial organization of larger central-place complexes in the archaeological record corresponds to the ordering of foundational events in *Völuspá* 7 and *Gylfaginning* 14. Smithing facilities are understood as productive spaces while the *tún*, “courtyard”, the *høgr*, “outdoor place of worship”, and the *hof*, “enclosed sacral space”, are understood as distinct aristocratic or sacral spaces.

Völuspá stanza 40 introduces the enigmatic mythological toponym Járnvíðr, “Iron-wood”. This toponym reflects a pan-Scandinavian topographical concept associated with the Old Norse word *rauði*, “bog iron”, which identifies bog iron deposits in relation to settlement contexts and the other resources (particularly wood) needed to smelt iron. Járnvíðr shows close morphological and semantic parallels to several toponyms (Jarnwith, Isarnho and possibly Jerrishoe) on the southern Jutland peninsula around Hedeby. There is evidence in this area of multi-functional central-place complexes, many of which were associated with bog iron smelting and other crafts. Therefore, Járnvíðr is both part of a pan-Scandinavian topographical concept of bog iron resources and also connected to a concentration of morphologically parallel toponyms on the southern Jutland peninsula. The mythological toponym Járnvíðr may be understood as “woodland with or near bog iron resources.”

Finally, *Völundarkviða* clearly portrays Völundr’s revenge as both an artisanal and social statement. Völundr’s social identity as a highly qualified artisan is repeatedly emphasized throughout the first half of the poem, with references to both his technical skill and his advanced knowledge. The last half of *Völundarkviða*, however, presents the smith as an abused artisan delivering prestige items exclusively to a particular queen and king. Völundr avenges his mistreatment through a devastating subversion of the significance of artisanal products (e.g. mead-cups and ornate treasures) in patrilineal feasting, gift-giving and oath-making rituals within the aristocratic hall.

I began this dissertation by quoting John Hines and his perspective on interdisciplinary studies of prehistoric Scandinavia. Hines points out that “[e]xplaining, or at least seeking some way of comprehending diversity, is quite different from reducing diverse phenomena to a single explanation” (1989: 195). The smithing motifs and smith-figures of Old Norse mythology present a complex but integrated picture of the communities and cultures of Viking-age Scandinavia. My research shows several concrete ways in which these motifs can be understood, and lays the groundwork for further research into the implications of these conclusions. I will briefly outline some of these potential areas of research, although it is important that any further research does not overlook either the diversity or the complexity of these conclusions in an attempt to formulate a comprehensive system of interpretation.

In my opinion, the most enigmatic feature of my research is the role of the female trolls who live in Járnvíðr and appear to be closely connected to this forest. Moreover, I find

it curious that the troll-shaped³⁵⁹ creatures raised by *in aldna* in Járnvíðr are understood in such an antagonistic and destructive (literally apocalyptic) way. As I have shown, Járnvíðr itself is closely associated with bog iron resources and bog iron smelting. This network of associations between bog iron, Járnvíðr and troll-women does not necessarily imply that the troll-women themselves are associated with bog iron resources or smelting activities. It is, however, highly suggestive that these creatures are so closely linked to Járnvíðr and that many of their names (several of which form a concentrated group related to Járnvíðr) are used poetically to refer to axes and other objects made of iron. The most plausible interpretation is that there was a cultural tradition of referring to certain tools and weapons as giantesses or female trolls, and that some of these tools and weapons were particularly associated with the activities related to bog iron processing. In the excursus following Chapter 2 I outlined how these names for female trolls may perhaps relate, not only to battle contexts, but also to crafting contexts. This does not necessarily explain the antagonistic and destructive associations with *in aldna*, but it is an area where I think further research could prove fruitful.

Many studies suggest that interactions between the Æsir and the giants conform to patterns of negative reciprocity and gendered oppositions (cf. Clunies Ross 1994; Mundal 2002). I have pointed out that the disjunction inherent in the relevant sequences in *Völuspá* complicates such close causal analyses (McKinnell 1993: 714; Sigurður 1978: 25-6). Thus, I believe that more general analyses of oppositional (but not necessarily causal) patterns could also lead to insightful conclusions. For example, in light of the distinct role of iron in these contexts, as opposed to gold (particularly since iron was the only ore extracted and refined locally while gold was imported), I suggest that further research into the relative cultural significance of various metals could be enlightening.

Lindow suggests that, “[c]raftsmanship is powerful, and it separates the bearers of culture from all those outside culture who threaten it” (1994b: 503). Productive workshops were an essential feature of influential central-place complexes in early medieval Scandinavia. *Völuspá* and *Völundarkviða* demonstrate Old Norse concepts of the role of these workshops and the skilled craftsmen who frequented these workshops within broader settlement communities and trading networks. Both mythological narratives also show how skilled smiths and the distribution of prestigious metal artefacts served to establish and

³⁵⁹ *í trolls hami* (*Vsp* 40.8)

maintain social structure in early medieval Scandinavia. *Völundarkviða* in particular (also *Völuspá* more generally) illustrates the destruction that results from acting upon the desire to impose unilateral control on skilled smiths and their creations.

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Appendix 1: Discussion of *fen fiqturs* from 24.3 and 34.7 of *Völundarkviða*

24.3 and 34.7 of *Völundarkviða* mention something called *fen fiqturs*, which translates literally as “fen of the fetter”. This is where Völundr hides the decapitated bodies of Níðuðr’s sons. *Fen fiqturs* is a mysterious reference and although several fairly sound interpretations have been offered of each word, the main challenge is explaining one word in relation to the other. Dronke suggests that a “literal translation has no meaning for us: ‘wet ground, swamp, of the fetter.’ *Fiqturs* is either based on a scribal error (so firmly embedded that it is repeated, as if meaningful), or it has a technical sense relating to the equipment of a forge which we do not know from ON or OE records” (1997: 317). *Fjqturr* has been interpreted as referring to some sort of restraint that holds the bellows in place or some sort of structural support for the bellows. Cleasby-Vigfusson, for instance, suggests that this term refers to the iron straps that secure the smith’s bellows (1874: s.v. *fföturr*). To explain this interpretation, comparisons have been made to Velent in *Piðriks saga af Bern* hiding his prized sword under his *aflhella*, “forge stone” (cf. *afl* 37 above; Dronke 1997: 317-8; Unger 1853: 95). This *aflhella* clearly corresponds to the archaeological finds of forge-stones meant to act as shields, protecting the bellows from the heat of the forge (Bergstøl 2001: 79). It does seem possible that Völundr, like his counterpart Velent, could use a hiding place under a forge-stone. The pit in *Vkv* is, however, also described as a *fen*, “wetland, marsh, bog”, and this does not appear to be the same as the pit in *Piðriks saga af Bern*. The pit in the saga does not seem to resemble a bog, for Velent stores his best sword there and presumably he knows enough about caring for swords to not select an environment (like a bog) that may be conducive to rusting or other damage.

The suggestion that this is a “tempering pool” is attractive in that it might at least make sense to hide bodies in a large pool of water. La Farge and Tucker suggest that *fen fiqturs* refers to “muddy water beside the support for the bellows, a smith’s *tempering pool*” (1992: s.v. *fen*). We know Völundr is skilled in tempering steel (18.1-8). Although there is no reference to him producing tempered weapons or iron objects of any sort for Níðuðr, it would not be unusual for the workshop to be equipped to produce weaponry. The descriptions in the poem do, however, reinforce that Völundr is, for the most part at least, making items of precious, non-ferrous metals during his enslavement.

Both Dronke and Richard Dieterle take note of the suggestion that *fiqturs* could be etymologically connected with the German term *Fesselgruebn*, “fetter-pit” (Dronke 1997: 317-8; Dieterle 1987: 6-7). This term denotes “a pit in the furnace with an air hole for the uptake of heat, which answers to the ore pit of the typical furnace. The “fetter-pit,” then, is so called because it is the site at which the charge is held in place” (Dieterle 1987: 7). Although this suggestion could perhaps make sense etymologically, it makes little sense semantically. In order to prevent the “charge” or fuel layers from falling and thereby inhibiting the collection of slag and refined metal, the pit at the base of a furnace is in some cases filled with straw or wood. I do not see how this pit is either functionally or structurally parallel to the shackles that are placed on Vǫlundr’s ankles. From the photos I have seen of individual pieces of slag, I do not note any resemblance to shackles. As Dronke points out, “to meet *fiqturr* in the same poem with the distinct senses of ‘fetter’ (12.8) and ‘forge-well’ [or ‘fetter-pit’] is disconcerting” (1997: 318). Dieterle also points out that the pit at the base of a furnace “is hardly where the boys would have been buried, since it is a small area inside the furnace and bears little resemblance to a fen” (1987: 7).

Dieterle also suggests that a slag-pit, accumulating the liquated waste from bog iron smelting, might be considered parallel to a fen:

Like peat in a bog, the liquid refuse of the smelting operations would come to rest in a low-lying depression. Yet the most compelling reason for its being called a “fen” lies not so much in its appearance as in the nature of the slag that filled it: for the typical source of ore in Iron Age Scandinavia, and still today in some rural areas, lies in the iron deposits found in *peat bogs*. Thus the slag that filled the bays in front of the furnace, where the Ardre VIII stone shows the headless bodies of the sons of Níðuðr to have lain, is the stuff of the peat bog and is, in a very real sense, a fen itself. (Dieterle 1987: 7)

Dieterle connects this hypothesis to his previous interpretation that the pit inside the furnace could be understood as a “fetter-pit”. He concludes that “the fetter-pit has a miniature fen into which it drains, thus giving rise to the name “fen of the fetter (-pit)” (1987: 8). Dieterle is correct to point out how slag might accumulate in a low-lying depression specifically dug out for that purpose. He is also correct to point out that iron was mostly refined from bog iron ore. Dieterle’s interpretation of the Ardre VIII stone is, however, questionable. This stone does show two headless bodies immediately to the right of a semi-enclosed structure. This structure, however, contains tongs and hammers, which hardly suggests that the structure is

itself best understood as a furnace. Such tools would be kept inside a workshop, not inside a furnace. There is also no evidence to suggest that the waste slag from such furnaces was understood as being at all similar to a bog. Indeed, the waste slag is a hard, metallic substance and may in many ways seem quite distinct from the bog which originally contained the raw iron ore. This interpretation also depends upon Vǫlundr performing iron smelting from bog iron. The portrayal of Velent in *Þiðriks saga af Bern* shows a smith capable of performing such processes with great success. Vǫlundr, as I have already pointed out, clearly has the skills necessary to harden and sharpen a sword, but there is no mention of Vǫlundr refining iron ore or making iron objects for Níðuðr. Vǫlundr is more regularly associated with gold and silver in this poem. Dieterle suggests that the process of smelting silver or gold requires a similar separation of the waste byproducts from the refined metal (1987: 8 n.24). To my knowledge, neither gold nor silver had any associations with ore coming from bogs. Dieterle suggests that the “occasional use of peat as fuel, or as an organic reduction agent, would give the slag the same identity” (1987: 8 n.24). This is highly speculative.

I have no conclusive alternative interpretations to offer for *fen fiqturs*.³⁶⁰ The suggestion of a quenching pool near some sort of structural restraint associated with smithing seems to make the most sense, given the current options and understanding of the terms and their context. Some sort of a waste heap also seems like a plausible location for these bodies, and the archaeological evidence shows that piles of waste slag and other materials could be quite large, e.g. 30 by 40 metres and up to 1.5 metres thick (Johansen 1973: 95; Smith 2005: 187). Both these waste heaps (at least the larger ones) and quenching are, however, primarily associated with iron smelting, blacksmithing and blade-smithing. There is no mention of Vǫlundr making iron objects for Níðuðr, although this smith certainly possesses these skills. As discussed above (see page 48), Vǫlundr is characterized as skilled in smelting outside of this poem. In *Vǫlundarkviða* (see page 230 above), this smith is said to own a sword and he claims to have the skills to harden and make it. So it is possible that blacksmithing and perhaps iron smelting are associated with Vǫlundr in this poem even though this is not explicitly made clear.

³⁶⁰ The only alternative I have considered is that some sort of foot-operated pot-bellows might have been implied, and that the “fettters” in this case are some sort of straps or buckles that secure the feet to the bellows. This interpretation seems appropriate in as much as the other usage of *fiqtr* in the poem refers to the shackles on Vǫlundr’s feet (11.7). Such pot-bellows were in use as early as 1500 BC in Egypt but extant illustrations show that hand-held ropes were used to re-inflate the bellows, not any sort of foot-straps (cf. Raymond 1984: 28, 31). I have no suggestion for how this speculative interpretation might connect *fiqtr* to *fen*.

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