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To Bare or not to Bear

Approaching Questions on the Historical Berserkr

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Lee Smith is the founding instructor of Blood and Iron Martial Arts and has been Canada's top historical fencer and coach for more than a decade. With a competitive career spanning fifteen years, Lee boasts fifty first-place tournament wins in a variety of disciplines such as combat knife and longsword, among many others, before he formally retired from competition in 2019. Lee fought in the first ever televised historical fencing final on ESPN. In addition, his students have won and earned medals in dozens of tournaments over the course of Lee's career. Many of these students have gone on to start their own successful clubs internationally. Today, Lee spends much of his time producing videos for our successful YouTube channel, training coaches in other clubs, and improving the methodology of other historical fencing instructors. When he is not teaching or fencing, Lee focuses on learning and refining his own teaching methodology, skill set, and the improvement of his education. He holds a health sciences associate degree (pre-med focus) and is an ISSA (International Sports Sciences Association) certified personal trainer.

Nicole Smith's skill and passion for Historical European Martial Arts (HEMA) comes from a lifelong love of reading, history, and competitive sports. Nicole is a noted rapier and women's longsword champion who is widely considered to be one of the world's top female

HEMA practitioners. She often enters the finals of any competition she enters. Nicole is also one of North America's only women teaching historical fencing and has taught at noted events around the world. She spends much of her time fencing, training, and testing her theories. Her specialties are the rapier, longsword, and messer. She is also known for her skill with the dagger/knife, and late period sword-and-buckler.

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Introduction, Method

The scholarly tradition on the concept of *berserkr* (plural: *berserkir*) begins as early as the late 18th century, with Samuel Lorenzo Ödman suggesting that *berserkir* consumed Fly agaric mushrooms (also Fly amanita and Amanita muscaria)[1] to gain their combative abilities, despite a lack of evidence in the literary and archaeological records. Since then, more theories have been posited on the nature of *berserkir*, attempting to explain how these warriors derived their combative prowess and violent temperament. Some of these new theories build upon Ödman's and suggest other substances may have been consumed, such as alcohol or Henbane. Others take different approaches from Ödman; a particularly prominent theory suggests that *berserkir* engaged in ritualistic cult practice, which may or may not involve the consumption of substances. Despite the significant length of time *berserkir* has been studied, there is a strikingly small corpus of scholarly works done, and hardly any consensus on presented theories. Many of these previous approaches have had the tendency to explore a wide range of possible analyses, rather than attempting to limit them to the most plausible options. In contrast, this thesis will focus on hypotheses susceptible to some degree of testing, and its most novel feature is that this approach is retained in the study of text, visual depictions, and practical experiments.

The epistemological foundations of this thesis are probabilistic, meaning that this dissertation will subject claims on *berserkir* to testing in order to evaluate their probability. The methods chosen for testing are based on the principle that probability is best evaluated with mutually independent parameters, and thus the methods used vary according to parameters of independent claims. The methods used are as follows: for the earliest attestation in text, philological evaluation is used; for visual representations, the method is aimed at evaluating how precise the correspondence is between these and descriptions known from later sources; a set of practical experiments explores the physical viability of some scholarly theories about *berserkir* with the two research questions: if berserkir in the sense of a 'mad' or 'berserk' warrior could have consumed substances such as alcohol to enter this state of mind, and, assuming that berserkir did in fact bear-skins into battle, if this would be an effective and therefore realistic armour.

[1]General information on this mushroom can be found at: https://www.fs.usda.gov/wildflowers/ethnobotany/Mind_and_Spirit/flyagaric.shtml.

These topics will be presented first by contextualizing the research history on *berserkir*, testing whether or not it can be reasonably claimed that *berserkir* existed to begin with, the data gathered from conducting practical experiments and what they state, and lastly contributing an overall picture of historical *berserkir* based on the research conducted which removes improbabilities found from the testing conducted. Exploring these topics will thereby provide a comprehensive, but non-exhaustive, corpus that will serve as a basis for future research.

1 Research History on *Berserkr*

The scholarly tradition on *berserkir* is extensive but possesses a small corpus of publications. While many topics have a wide range of articles and books by a variety of scholars, *berserkir* are normally treated with a single article or relatively short book chapter; though the non-scholarly corpus of film, television, video games, *etc.*, about *berserkir* is vast. Today, *berserkir* are beginning to receive more dedicated work by scholars and attention by the non-scholarly public.

The study of *berserkir* spans from approximately the 18th century, with Swedish scholar Samuel Ödman positing that *berserkir* consumed Fly agaric mushroom in order to reach *berserksgangr*[2] as part of an Óðinn-ic bear-cult (1784), to the present day.[3] Due to complete lack of contemporary attestation and symptomatic consistency, Ödman's theory has been disregarded throughout the 20th century by most scholars, such as Lore Huchting-Gminder and Ingjald Reichborn-Kjennerud, though Reichborn-Kjennerud believed that intoxication played a role.[4] Other scholars during the 20th century have posited theories regarding the roles of *berserkir* in Norse society. D. J. Beard has identified seven roles of *berserkir* in Old Norse (ON) literature: the primitive Germanic or Celtic frenzied fighter; the king's *berserkr* and defender of the realm;

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[2]Anatoly Liberman. "Berserks in History and Legend." In *Russian History*, vol. 32, no. ¾, 2005: 401-11. Accessed March 30, 2021. http://www.jstor.org/stable/24663272,
pp. 402. *Berserksgangr*, a term commonly used to refer to the *berserkir*'s state of fury, is used in this dissertation to refer to the *berserkir* while engaging in violent rage, though what exactly this entails is not defined, as the debate on the term's accuracy is too prominent to define it with certainty at this time.

[3]Ármann Jakobsson. "Beast and Man: Realism and the Occult in Egils saga." In *Scandinavian Studies 83,* no. 1, 2011: 29-44. doi: 10.1353/scd.2011.0013, pp. 33-35. This is not to say that there are no records of *berserkir* prior to Ödman. There certainly are, some of which will be discussed in this dissertation, but the modern scholarly tradition appears to begin with Ödman's theory.

[4]Anatoly Liberman, "Óðinn's Berserks in Myth and Human Berserks in Reality." In *Prayer and Laughter*: *Essays on Medieval Scandinavian and Germanic Mythology, Literature, and Culture.* Moscow: Paleograph Press, 2016. ISBN 978-5-89526-027-2, pp. 108-109. Though scholars have disregarded the mushroom-*berserkir* theory, much of the non-scholarly public today have continued to be exposed to this theory, believing it to hold credence.

the king's *berserkr* but arrogant and unruly; the *hólmgǫngumaðr* or duellist; the *hólmgǫngumaðr* but with a measure of invulnerability; the 'viking' *berserkr* [as in those of the Viking Age that go *víkingr*]; the semi-magical *berserkr*.[5] Gerard Breen has identified the same seven roles as Beard, but expands upon these literary roles by adding mythical creatures that were given the same roles as *berserkir* in ON literature.[6] Benjamin Blaney suggests an alternative set of three roles held by *berserkir* in ON literature: the pagan demon whose sole function is to be defeated by the Christian missionary; the king's bodyguard; the unwelcome suitor.[7] Though Beard appears to identify literary functions while Blaney reconstructs the historical role of *berserkir*, both are identifying attributes that may be reasonably realistic, and are thus discussing the literary adaptations of the historical *berserkir*.

Current scholars have dedicated a considerable amount of time reconsidering the past works done on the study of *berserkir*. Articles and books written by Anatoly Liberman and Michael P. Speidel have been utilized extensively, serving as starting bases for many proceeding articles.[8] Ármann Jacobsson has contributed a great amount of detail on the concept of *troll*, a mythical Norse creature, which is a common descriptor for *berserkir* used by primary sources such as *Egils saga*. As such, *troll* represents the concepts: practitioner of magic; strange and foreign; bestial; removed from humanity; hostile and disruptive; *troll* not as a state of permanent being, but rather becoming and change.[9] Roderick Dale's recent publication, *The Myths and Realities of the Viking berserkr*, challenges the traditional view that *berserkir* went 'berserk' in the modern English definition of the word.[10] Rather, Dale examines evidence for the medieval perceptions of *berserkir* in order to build a model of how the medieval audience would have viewed them.[11]

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[5]D. J. Beard. "The Berserkir in Icelandic Literature." In *Approaches to Oral Tradition, Occasional Papers in Linguistics and Learning*, vol. 4, ed. by Robin Thelwall. New University of Ulster, 1978; repr. 1980, pp. 101–102.
[6]Breen, Gerard. *The Berserkr in Old Norse and Icelandic Literature* (unpublished doctoral thesis). Cambridge: Cambridge University, 1999, pp. 103–158.
[7]Benjamin Blaney. "The Berserk Suitor: The Literary Application of a Stereotyped Theme," In *Scandinavian Studies*, vol. 54 (4). 1982, 279–94.
[8]Anatoly Liberman, In *Prayer and Laughter: Essays on Medieval Scandinavian and Germanic Mythology, Literature, and Culture. Moscow: Paleograph Press,* 2016. ISBN 978-5-89526-027-2. Michael P. Speidel. "Berserks: A History of Indo-European "Mad Warriors"". In *Journal of World History*, vol. 13, no. 2, 2002, 253-90.
[9]Ármann Jakobsson. "Beast and Man: Realism and the Occult in Egils saga," pp. 32-3.
[10]"Berserk," Cambridge Dictionary (Cambridge University), accessed May 5, 2023. https://dictionary.cambridge.org/dictionary/english/berserk.dwadsadwadwsd. Cambridge succinctly defines 'berserk' as "very angry or out of control," "not in control, extremely excited, or crazy."
[11]Roderick Dale. "The Myths and Realities of the Viking Berserkr". In *Studies in Medieval History and Culture*. Abingdon, Oxon: Routledge, 2022.

1.1 Substances

While largely discounted due to a lack of evidence, the theory that *berserkir* consumed hallucinogenic or otherwise intoxicating substances to achieve *berserksgangr* has remained a persistent theory. The consumption of alcohol has been a less popular theory, though the speculation does occasionally reappear. Recently, Karsten Fatur has presented the Henbane plant as a possible substance used by *berserkir*, and though Henbane resembles the characteristics of *berserksgangr* more closely than Fly agaric, it also lacks evidential support. Overall, theories revolving around the use of substances in order to reach *berserksgangr* appear to lack literary and archaeological support, but nonetheless have remained prominent in academic circles and the non-scholarly public. The following sub-chapter sections will explore substance-use theories according to the three main substances in the scholarly debate: hallucinogenic mushrooms, alcohol, and the most recent theory, a flowering plant called Henbane.

1.1.1 Hallucinogenic Mushrooms

It is generally agreed that Ödman was the first in the academic community to theorize that *berserkir* consumed hallucinogenic mushrooms, specifically Fly agaric, to reach *berserksgangr*. This theory was supported by F. C. Schübeler (1885)[12] and is more recently supported by Howard D. Fabing (1956).[13] Fabing states that Fly agaric had been found to contain bufotenine, which was under scrutiny for its possible neurochemical role in causing schizophrenia. Intravenous injection trials taken place in the Ohio State Penitentiary on long-term convicts, which are stated to be relatively emotionally stable and had been college students, showed bufotenine to be a hallucinogen, and its psychological effects bear a resemblance to *berserksgangr*.[14] In contrast, Reichborn-Kjennerud (1936) dismissed mushrooms as the cause, but believed that intoxication played a role in *berserksgangr*, and Liberman specifically states that there is no mention of psychotropic drugs used by *berserkir* as per Fredrik Grøn's complete survey of all literature on *berserkir* and mushrooms, where there is an absence of evidence.[15] Are Skarstein Kolberg adds that Ödman's theory lacks archaeological evidence, and modern medicine — as of 2018 — shows that Fly agaric will not cause a *berserksgangr*-like reaction. Rather, the

[12]Howard D. Fabing. "On Going Berserk: A Neurochemical Inquiry." *Scientific Monthly*, vol. 83, no. 5, 1956: 232-237, pp. 412.
[13]Anatoly Liberman, "Berserks in History and Legend." *Russian History*, pp. 409.
[14]Howard D. Fabing. "On Going Berserk: A Neurochemical Inquiry," pp. 412-4.
[15]Anatoly Liberman, "Berserks in History and Legend." *Russian History*, pp. 409.

principal hallucinogenic agent in Fly agaric, muscimol, causes sedative-hypnotic psychoactivity. As a central nervous system depressant, muscimol sometimes causes hallucinations, nausea, and feelings of unease, but a state of paralysis is a more likely outcome than *berserksgangr*. Kolberg continues to discuss the trials conducted at Ohio State Penitentiary, pointing out that the dosage of bufotenine changes the severity of symptoms, and condemns the theory.[16] Earlier scholarship had been less stringent when discussing Fly agaric use as a possible explanation for *berserksgangr*, and has consequently been found inaccurate by more recent research.

1.1.2 Alcohol

Like the supposed use of Fly agaric, no source mentions the use of alcohol to cause *berserksgangr*.[17] Kolberg points out that *Grettis saga Ásmundarsonar* (from here on referred to as *Grettis saga*) does mention alcohol use, but it seems to refer to traumatized veterans engaging in alcohol abuse rather than utilizing it for *berserksgangr*.[18] The first suggestion that alcohol was the cause of *berserksgangr* was made by Hans Jacob Wille (1786), a Norwegian theologian and priest that suggested *berserksgangr* was the same as the Nynorsk word 'ølkveis', which now means 'hangover'. Later, Josef Calasanz Poestion (1884), an Austrian scholar and Scandinavianist, supported Wille. Alexander Bugge, Grøn, and Paul Winge (between 1901 and 1917) all came to the same conclusion as Poestion. Like Liberman's observation that there is a lack of literary evidence to support Ödman's Fly agaric theory, supported by Grøn's survey, Dale also points out that the alcohol-*berserksgangr* theory lacks attestation in saga sources, and where alcohol is used, it is generally in a social context:

> The author of Grettis saga comments that the berserkir drink enough to get tired, not that they drink until berserksgangr comes on them: 'Þá sér Grettir, at þeir gerask mœddir nǫkkut af drykknum' (then Grettir saw that they were becoming rather tired from the drinking). The fact that they drink until they are tired without undergoing berserksgangr indicates that the alcohol was

[16]Are Skarstein Kolberg. "Did Vikings Really Go Berserk? An Interdisciplinary Critical Analysis of Berserks." In *The Journal of Military History* vol. 82, no. 3, 2018, pp. 905.
[17]Anatoly Liberman, "Óðinn's Berserks in Myth and Human Berserks in Reality," pp. 409.
[18]Are Skarstein Kolberg. "Did Vikings Really Go Berserk? An Interdisciplinary Critical Analysis of Berserks," pp. 904. It is pertinent to note that *Grettis saga* is a fairly late piece with fantastical elements.

> not considered to be a direct cause of berserksgangr by the author of Grettis saga.[19]

Much like the Fly agaric theories, the consumption of alcohol to achieve *berserksgangr* lacks evidence, and therefore there is little reason to believe that alcohol consumption is the cause of this state.[20]

1.1.3 Hallucinogenic Flowering Plant

Henbane, or *Hyoscyamus niger*, has recently been posited by Fatur as a good candidate for having caused *berserksgangr* through ingestion. Fatur states that certain alkaloids in Henbane cause a range of effects, such as:

> . . . decreased salivation (and thus dry mouth), slowed gut motility, dilation of pupils (and thus blurred vision), decreased bronchial secretion, decreased sweating (and thus drying of skin), bradycardia or tachycardia (depending on dosage), ataxia, hyperthermia, flushing of the skin, headache, hyperreflexia, incoordination, somnolence, restlessness, decreased ability to pay attention, loss of coherent speaking, hallucinations, memory disturbances, and eventually coma and death.[21]

Figure.1: A simplified symptomatology table presented by Fatur comparing the symptoms of Henbane and Fly agaric. Common presence of symptoms is denoted by x.

"Symptoms" of Berserkers	*Henbane*	*Fly agaric*
Several days of dulled mind after	x	
Increased strength	x	x
Decreased pain sensitivity	x	
Decreased "humanity and reason"	x	x
"Wild like animals" (Delirium)	x	x
Shivering	x	x
Chattering of teeth	?	?
Chill in body		
Swollen and red face	x	x
Rage	x	

[19]Roderick Dale, "The Myths and Realities of the Viking Berserkr", pp. 78-9.
[20]Hilda Roderick Ellis Davidson. *Myths and Symbols in Pagan Europe: Early Scandinavian and Celtic Religions*. Syracuse, NY: Syracuse Univ. Press, 2006, pp. 41-5. Though ritual drinking of alcohol is present in the historical record, there is no indication that *berserkir* drank it to reach *berserksgangr*, but they may have participated in more public drinking rituals.
[21]Karsten Fatur. "Sagas of the Solanaceae: Speculative Ethnobotanical Perspectives on the Norse Berserkers." Journal of Ethnopharmacology, vol. 244, 2019: 112151. doi:10.1016/J.JEP.2019.112151, pp.3. More information on Henbane can be found here: https://www.rolv.no/urtemedisin/medisinplanter/hyos_nig.htm.

Lack of discrimination between friend and foe	x	
Invulnerable to blades	?	?
Fearlessness	?	?
Removal of clothing	x	
Shield biting		
Invulnerability to fire	?	

These effects are dose-dependent. Henbane can therefore be used without causing the more extreme symptoms or death. Henbane seeds have been found in Viking Age sites in Denmark and Finland indicating potential usage at the time, though the findings are inconclusive. A Danish woman's grave from *circa* AD 980 contained a pouch of Henbane seeds, whose clothing, jewellery, among other grave goods suggests that she was of high social class that may have used the seeds to produce visions in a ritualistic context.[22] Though Fatur does provide an extensive study that places Henbane as a better candidate than Fly agaric as a potential cause for *berserksgangr*, Fatur's theory has the same problems as the Fly agaric and alcohol theories, that the source material lacks any mention of Henbane usage, and other evidential categories do not have enough support to be accepted beyond a reasonable doubt.

1.2 Psychology

Significant research has been committed to exploring psychological explanations for *berserksgangr*. This avenue of research was first undertaken in the early 20th century by Fredrik Grøn, Hermann Güntert, and Ingjald Reichborn-Kjennerud.[23] In the late 20th century, Armando Simón of the Edison Community College proposed that *Berserker / Blind Rage Syndrome* be added to the DSM-III under the category of Dissociative Disorders. Most recently, John Protevi has continued the theory that Post Traumatic Stress Disorder (PTSD) is the cause of *berserksgangr* but has added that reactive aggression may be triggered by the PTSD.

[22]Karsten Fatur. "Sagas of the Solanaceae: Speculative Ethnobotanical Perspectives on the Norse Berserkers," pp. 3-4.
[23]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 81.

Figure 1. Psychological theories with the author and year they were posited.[24]

1908	Grøn	Psychopathy / Societal
1912	Güntert	Psychopathy / Societal
1929	Grøn	Shell Shock / PTSD
1936	Reichborn-Kjennerud / Grøn	Rabies
1987	Simón	Blind Rage Syndrome
1994	Shay	PTSD
2017	Protevi	PTSD / Reactive Aggression

1.2.1 Fredrik Grøn: Psychopathy / Societal and Shellshock

In 1908, Grøn wrote that *berserksgangr* was an outward expression of a criminally violent psychotic personality, caused by the particularly violent period of the Viking Age. He emphasized that this was not a type of mania, but a function of temperament found in descriptions of both *berserkir* and Viking Age Norse chieftains. Grøn further states that the *berserksgangr* state of mind was a sort of psychosis, which he does not attribute to chieftains:

> 'Wenn wir unbefangen die Berichte von dem „berserksgangr" genauer analysieren, lässt sich der Zustand kaum anders erklären als eine eigenartige acute Psychose, die gewisse Berührungspunkte mit dem Amoklaufen der Malayen darbietet' (If we impartially analyze the reports of *berserksgangr* more precisely, the state can hardly be explained, except as a peculiarly acute psychosis that shows certain similarities with the amok of the Malays).[25]

He suggested that *berserksgangr* was not a single psychological disorder, but multiple, similar disorders with varying triggers, such as stress, but all resulting in the same outcome. Following World War I, Grøn developed his theory and incorporated advances in psychological research resulting from the war. In 1929, he deduced that *berserksgangr* was a derangement resulting from stress, aggression, and fear. Breen suggests that Old Norse *eggja* ('egging on') of *berserkir* by those around them may have heightened this state.

[24]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 91. A version Dale's chronological table of theories, modified for the purposes of this dissertation.
[25]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 81-82.

1.2.2 Hermann Güntert: Psychopathy / Societal

In support of Grøn, Güntert suggested that the attitudes that led to *berserksgangr* were an integral part of the violence of the Viking Age, and that this explains *berserksgangr*.[26] He compared the state of mind to that of Samson in the Old Testament, though he did not address the discussion on contemporary cultures with similar attitudes possessing or lacking the *berserkir* concept or something similar. In 2013, Tarrin Wills conducted research that supports Güntert's assertions. Wills suggests that living conditions and competition for status in Viking Age Scandinavia may have induced greater levels of testosterone in the general populace, resulting in a more violent society.[27]

1.2.3 Ingjald Reichborn-Kjennerud: Rabies

Reichborn-Kjennerud dismissed mushrooms as the cause of *berserksgangr* but believed that substances played a role in achieving the state.[28] Reichborn-Kjennerud, as well as Grøn, proceeded to dismiss the idea that *berserkir* may have had rabies, having considered the descriptions of *berserkir* as 'mad dogs' and discussing an outbreak of rabies that occurred during the reign of Haraldr *gilli*. After further consideration, both concluded that rabies is not a likely explanation. The descriptions of *berserkir* are metaphorical rather than descriptors of physical characteristics, and if rabies was in fact the cause, this would imply that Haraldr hárfagri kept a retinue/warband infected with rabies as described in *Heimskringla* and in *Haraldskvæði*. Keeping a retinue/warband of rabies infected warriors is impractical and a liability in any martial setting, and so the theory can be confidently disposed of as improbable.[29]

1.2.4 Armando Simón: Blind Rage Syndrome for the DSM-III

Simón proposed in 1987 that a condition he called *Berserker / Blind Rage Syndrome* had been wrongfully subsumed under *Intermittent Explosive Disorder*, and that it should be considered for the DSM-III as part of the Dissociative Disorder category due to its unique qualities. According to the DSM-III (1980), the American Psychiatric Association dictates that for a diagnosis as Intermittent Explosive Disorder the condition requires: several discrete

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[26]Anatoly Liberman, "Berserks in History and Legend." *Russian History*, pp. 407. Güntert believed that the Irish had borrowed their description of battle frenzy from the Scandinavians.
[27]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 81-82.
[28]Anatoly Liberman, "Berserks in History and Legend." *Russian History*, pp. 409.
[29]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 81.

episodes of loss of control of aggressive impulses resulting in serious assault or destruction of property; behaviour that is grossly out of proportion to any precipitating psychosocial stressor; absence of signs of generalized impulsivity or aggressiveness between episodes; not due to schizophrenia, antisocial personality disorder or conduct disorder. Occasional periods of amnesia are also noted. Simón lists the requirements he proposes for a diagnosis of *Berserker / Blind Rage Syndrome*:

> (a) In all cases the actual period of physical violence is accompanied by amnesia, the period of "blind rage." The amnesia may wear off hours or minutes after the fight, but at no time thereafter will the patient remember any details of that period.
>
> (b) There is an appropriate reason for aggression on the part of the patient but not to the degree exhibited by the patient. In other words, prior to reacting (or overreacting), the patient is first the object of physical, verbal, or visual insult.
>
> (c) The patient's violence is specifically target-oriented and not randomly aimed.
>
> (d) The patient exhibits phenomenal strength and a certain degree of "invulnerability" to sustained physical damage.
>
> (e) Almost always the fight is one-sided, with the patient being victorious and inflicting damage past the point where it is socially acceptable. In other words, an already defeated person will continue to be beaten.
>
> (f) The patients express a fear of their amnesia and of their lack of control. Simultaneously, they are awed at their apparent strength and invulnerability during the periods of blind rage.
>
> (g) Rule out brain damage, drugs, or other mental illnesses as etiology. Also rule out malingering as there is no secondary gain.[30]

Simón also notes that the patients for his proposed disorder are primarily Caucasian males that otherwise lead unremarkable lives. He then compares the Caucasian males supposedly with this disorder to *berserkir*, citing *Vatnsdoela saga*, where a *berserkr* 'fit' is described.[31]

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[30]Armando Simón. *The berserker/blind rage syndrome as a potentially new diagnostic category for the DSM-III*. Psychological Reports, vol. 60, 1987, 131–5, pp. 131-2.
[31]Armando Simón. *The berserker/blind rage syndrome*, 131–5, pp. 134-5.

1.2.5 Jonathan Shay and John Protevi: Post Traumatic Stress Disorder

Jonathan Shay, a psychiatrist, worked with American combat veterans of the Vietnam War, intending to identify *berserksgangr* among his patients, relating their violent fits to *berserkir*. Shay states that these fits were triggered by betrayal, sudden bereavement, the sense of being trapped or overrun, and being faced with certain death. In these circumstances, the patient entered a state of mind where they felt they had nothing left to lose and would then go on the offensive until there was nothing left to kill or they themselves were killed, without a sense of the consequences that may befall their own comrades. Supposedly, these patients became disconnected from the rest of humanity and felt powerful in this state, stripping off protective equipment, such as helmets and flak jackets. Shay suggests that the symptoms of these fits came from a combination of adrenaline and neurochemical changes, releasing opiate-like substances, though this cannot be proven unless a blood sample were to be acquired from a soldier amid this state. It is possible that this release of chemicals can cause a permanent change to physiology, thus making the patient more prone to future fits. Shay concludes that while in this state during battle, the patient would normally die, and if they survived then they suffered permanent psychological and physiological damage; this would result in a form of PTSD that resulted in over 40% of the patients becoming excessively violent, committing acts of violence at a rate five-times more than civilian populaces.

In a similar vein to Shay's theory, Protevi attributes *berserksgangr* to a form of reactive aggression triggered by PTSD or a sudden traumatic shock — a 'war dance' and chanting may be used to purposefully rouse *berserksgangr* — as a result of techniques used to facilitate close-range killing.[32]

1.3 Reliability of the Literature

The reliability of accounts contained in the sagas have been debated by scholars. Their validity as accurate accounts of events from before, during, and after the Viking Age have been questioned by some and vehemently defended by others, especially scholars of Icelandic studies. This topic of scholarly debate is vast and reaches beyond the scope of this dissertation; therefore, the topic of reliability will be discussed in the following with a focus on what is pertinent to *berserkir*. The earliest account of *berserkir* in the sagas is contained in *Haraldskvæði*

[32]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 84-85.

(*Hrafnsmál*) contained in *Heimskringla* (*Kings' sagas*). The dating for *Haraldskvæði* continues to be debated and will serve as a case-study for the overarching theme of saga reliability.

The oral nature of saga transmission has been the primary point of contention for scholars debating their reliability, some accusing the sagas of being unreliable due to the lack of permanency that written material offers, and others arguing that oral transmission allows for information to be compiled and evolve from multiple sources over time. Margaret Clunies-Ross points out that the verbs *samansetja* or *setja saman* 'to bring together, compile' suggest that Icelanders in the Middle Ages recognised the written sagas as syntheses of pre-existing narratives gathered from multiple sources. Clunies Ross further asserts that this is appropriate for the saga genre, as the medieval Icelanders most likely had known a form of the information being synthesized and knew what to be true and fabrication.[33] Despite the unknown age of the sagas, oral transmission has proven to be advantageous in the preservation of information, which has proven more reliable than information scholars may gather from material evidence and later literary evidence. For example, Snorri Sturluson, compiler of the *Prose Edda*, is recognized as a figure prone to embellishment of information as were the saga poets before him, though Snorri specifically may have changed features less so than some scholars have claimed.[34] Anatoly Liberman gives the sagas this treatment when discussing *berserkr* in articles such as "Berserks in History and Legend," where he points out fantastical elements of the sagas while using them as sources of information to reject Ödman's theory on *berserkir* consuming Fly agaric mushrooms. It may therefore be claimed with reasonable certainty that the sagas occupy a liminal space between entertaining and boastful fabulation, and historical record of the people and places described. Therefore, it seems reasonable to assume that the sagas are rooted in historicity, but the problem of distinguishing like historical features from later projections remains. Possibly, the best way of distinguishing between these historical features and later projections is to focus on likely older elements in the sagas in the form of poetry based on an evaluation of if it is as old as the saga claims.[35]

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[33]Margaret Clunies Ross. "The Genesis of the Icelandic Saga." In *The Cambridge Introduction to the Old Norse-Icelandic Saga*, 37–51. Cambridge Introductions to Literature. Cambridge: Cambridge University Press, 2010. doi:10.1017/CBO9780511763274.004, pp. 49-50.

[34]Mikael Males. "Grammatical Literature," ed.1. In *The Poetic Genesis of Old Icelandic Literature*, 102-193. Berlin: De Gruyter, 2020, pp. 147-145.

[35]Fredrik Grön claims that the sagas are generally reliable sources of information as discussed in: Howard D. Fabing. "On Going Berserk: A Neurochemical Inquiry," pp. 412. Kolberg concurs by claiming that a saga is a historical

Haraldskvæði is the earliest literary reference to berserkir on record, dating to *circa* AD 900. It commemorates the victory of Haraldr hárfagri at the Battle of Hafrsfjord (near Stavanger, Norway) in the late 9th century, where it is said he consequently secured control of all Norway.[36] Stanza 8, which mentions *berserkir* and *úlfheðnar* (Old Norse singular *úlfheðinn*), is as follows:

Hlaðnir vǫ́ru þeir hǫlða	ok hvítra skjalda,
vigra vestrœnna	ok valskra sverða.
Grenjuðu berserkir;	guðr vas þeim á sinnum;
emjuðu úlfheðnar	ok ísǫrn dúðu.

> They [the ships] were loaded with men and white shields, western spears and Frankish swords. Berserks bellowed; battle was under way for them; wolf-skins [berserks] howled and brandished iron spears.[37]

There are theories that the latter half of this poem, stanzas 13-23, is a later addition. Klaus von See suggested that these stanzas are later additions, claiming that a poetic pastiche on *Haraldskvæði* is found in *Flateyjarbók.* Von see also argues that *Haraldskvæði* contains borrowings from *Atlamál*. Mikael Males rejects this notion, claiming that these stanzas show that both halves of *Haraldskvæði* belong together, and that the reason for the absence of stanzas 15-23 in *Heimskringla* is because they would add little factual information about Haraldr hárfagri for Snorri's compilation.[38] Despite these contradictions, Males does not pass his own judgement on whether or not *Haraldskvæði*'s two halves were originally compiled together or at separate times; though he does point out that while *úlfheðnar* is used in the first half of the poem, as in stanza 8, in the second half the term is given a rather antiquarian explanation: "They are called wolf-skins, who carry bloody shields into battle."[39] He claims that if the second half was indeed added later

account given dramatic effect in: Are Skarstein Kolberg. "Did Vikings Really Go Berserk? An Interdisciplinary Critical Analysis of Berserks," pp. 902.

[36]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 167.

[37]Þorbjǫrn Hornklofi. "Haraldskvæði (Hrafnsmál)," ed. by R. D. Fulk. In *Poetry from the Kings' Sagas 1: From Mythical Times to c. 1035 Skaldic Poetry of the Scandinavian Middle Ages*, vol. 1, ed.by Diana Whaley. Turnhout: Brepols, 2012. https://skaldic.org/m.php?p=text&i=1436 (accessed 24 February 2023).

[38]Mikael Males. "Gylfaginning: Poetic Sources and the Structure of the Archetype." In *Saga-book/Viking Society for Northern Research*, vol. 45, 2021. ISSN 0305-9219, p. 119–150, pp. 127-128.

[39]Mikael Males. "Gylfaginning: Poetic Sources and the Structure of the Archetype," pp. 128.

on, it probably had been added in the 12th century when production of historical poetry was at a high.[40]

When applying the discussion on the reliability of sagas to *berserkir*, it becomes evident that the sources that mention *berserkir* must be treated with great care. Even the earliest surviving record on *berserkir, Haraldskvæði,* is subject to possible alteration and addition, as is argued by some for the addition of stanzas 13 or 15 onwards. If *Haraldskvæði*'s second half was in fact added on during the 12th century, it can be said with considerable certainty that this poem is also subject to the same liminal space between fabulation and historical record that the sagas are, requiring careful analysis all the same. As scholarly consensus agrees on the authenticity of the first half, this section will be the focus of the analysis.

1.4 Conclusion: Scope of the Present Thesis

This dissertation intends to contribute to the scholarly record by considering various theories from a range of scholars and testing them in terms of stringency. While this method of testing will not be able to cover all facets of *berserkir* study, it will be able to provide a strong basis for the realistic nature of *berserkir*, including a perspective of historical combatives which has yet to be done. To do so, this dissertation will provide: a critical analysis of the likelihood that *berserkir* existed with research on the term's etymology as well as the Viking Age poem, *Haraldskvæði*; Pre-Viking Age archaeological finds that depict *berserkir* or earlier precursors to; two experiments utilizing personal Historical European Martial Arts (HEMA) experience with Blood and Iron Martial Arts (B&I) in order to discern whether or not *berserkir* wore bear pelts and consumed substances to reach *berserksgangr*;[41] a final overview of this dissertation's contribution to the scholarly record based on these findings.

2 Did *berserkir* Really Exist?

Although there is comparatively little source material on *berserkir* as there are for many other topics in Medieval Studies, the presence of *berserkir* is nonetheless significant in literary sources. The etymology of *berserkr* has been a prominent topic of debate throughout the

[40]Mikael Males. "Gylfaginning: Poetic Sources and the Structure of the Archetype," pp. 128.
[41]This will be done with personal experience as a first-level instructor of Historical European Martial Arts (HEMA) under Lee Smith, founder and principal instructor of Blood and Iron Martial Arts. Please see "Acknowledgements" for further details.

berserkir research history and has been the focus of discussion on whether *berserkir* wore bear pelts (‘bear-shirt’) or wore no torso cover at all (‘bare-shirt’). As the only surviving contemporary literature regarding *berserkir*, the poem *Haraldskvæði* gives what is likely the most accurate recount of *berserkir*. These two pieces of literary information serve as a strong foundation for discerning whether or not *berserkir* had existed during the Viking Age, rather than specifically defining what they were, as will be discussed later on.

2.1 Etymology of *berserkr*

The meaning of *berserkr* has remained a topic of heated debate in scholarship, where it has been argued whether *berserkr* should be translated as *ber-serkr* ‘bare-shirt’ or ‘bear-shirt’. Etymology has been the primary method of discerning the meaning of *berserkr* throughout this debate, and while it does serve as a good starting point for discussion, it can only go so far as to reach a conclusion. Other methodologies must be used in tandem with etymology in order to support either conclusion of debate. Roderick Dale has done so by attempting to reconstruct the meaning of *berserkr* to a Viking Age audience.[42]

Until the mid-19th century, the etymological scholarly community generally agreed that *berserkr* definitively means ‘bare-shirt’, though as early as 1847 some suggested that this was very unlikely due to the impracticality of lacking clothing in cold climates. Proceeding from here, Sveinbjörn Egilsson described a preference for ‘bear-shirt’ and most scholars came to agree. Over seventy years later, the scholarly community began to prefer ‘bare-shirt’ once again. In 1932 Erik Noreen presented an extensive survey of the etymological debate and from this preferred ‘bare-shirt’, from which opinions have remained divided. Scholars Hans Kuhn and Kim R. McCone supported Noreen, while Huchting-Gminder, Nils Lid, and Breen sided with Otto Höfler’s proposal that *ber-serkr* means ‘bear-shirt’.[43] Liberman’s argument in favour of ‘bare-shirt’, despite his own claim that “the main difficulty with *berserkr* 'bear shirt’, is that it presupposes the unrecorded substantivized adjective *berserks* ‘bareshirted’; though compound adjectives of this type were rather numerous:

> Contrary to *berr*, the nouns *bera* ‘female bear’ and *bersi, bessi / bassi* ‘bear’ have been recorded in Old Icelandic. *Ber-* is the historic stem of *bjǫrn* (*bernu-*); *bessi* is from *bersi*. Their existence does not prove

[42]Roderick Dale, “The Myths and Realities of the Viking Berserkr,” pp. 97.
[43]Anatoly Liberman, “Óðinn’s Berserks in Myth and Human Berserks in Reality,” pp. 103.

> that *berr* was also current in early Scandinavian. From the semantic point of view *úlfheðinn* 'wolfskin' is not an exact counterpart of *berserkr*, because wolves have skins, whereas bears do not wear shirts.[44]

This point is hardly a counter-argument, as ON poetry often makes use of rough synonyms, and attempting to read into these often leads to the common mistake of reading too deeply into them.[45]

Liberman makes other arguments relating to Russian numeral *sorok* 'forty' and *serkr* as a technical term of fur trade, coming to the conclusion that if *berserkr* is contemporaneous with the Viking Age, 'bear-skin' can hardly be posited.[46] Speidel posits that *berserkr* had originally meant 'bear-shirt' in ON, but when *bera* 'bear' became *björn*, the word *berserk* was no longer understood as 'bear-shirt' by contemporary Scandinavians, but instead came to mean 'bare-shirt', supporting Liberman's claim.[47] Are Skarstein Kolberg adds that the argument in favour of 'bear-shirt' is vaguely supported by archaeological finds of bear claws in graves.[48] While bear claws are found in graves, it is unlikely that this supports the 'bear-shirt' interpretation, as martial culture commonly values predatory and generally dangerous animal imagery regardless of *berserkir*.

Dale criticizes the directions that research has taken, claiming that the modern meaning of 'berserk' is derived from misunderstandings and presentist attitudes, therefore applying a meaning to *berserkr* that is inaccurate in the ON literature. Dale states that the problem with presuming *berserkir* did in fact go 'berserk' is that research now creates a self-sustaining paradigm with each new articles failing to reassess and challenge it. To remove this self-sustaining paradigm and instead challenge it, Dale focuses on multiple genres of the ON literature that *berserkir* are mentioned in. He then considers how a medieval, as opposed to Viking Age, audience had perceived *berserkir* and reacted to the stories about them. Foreign-language texts are included, where concepts can be related across cultural boundaries. When this is done, Dale

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[44]Anatoly Liberman, "Óðinn's Berserks in Myth and Human Berserks in Reality," pp. 104.
[45]Rudolf Meissner. *Die Kenningar Der Skalden : Ein Beitrag Zur Skaldischen Poetik*. Vol. 1. Rheinische Beiträge Und Hylfsbycher Zur Germanischen Philologie Und Volkskunde. Bonn: Kurt Schroeder, 1921. The lists in this article amply confirm this point.
[46]Anatoly Liberman, "Óðinn's Berserks in Myth and Human Berserks in Reality," pp. 104.
[47]Michael P. Speidel. "Berserks: A History of Indo-European "Mad Warriors"," pp. 278.
[48]Are Skarstein Kolberg. "Did Vikings Really Go Berserk? An Interdisciplinary Critical Analysis of Berserks," pp. 908.

claims we can analyze what a translator thought *berserkr* meant.[49] He concludes that a medieval audience would have understood *berserkir* as champions who fought in *hólmganga*, a duel, with the understanding that the core meaning of *berserkr* in the medieval period was 'champion'. Nothing in the medieval texts addressed by Dale indicates a frenzy or anger as connoted by the modern understanding of 'berserk', and it is from here that we can begin to reconstruct what *berserkir* were in the Viking Age.[50]

Scholarly discussions have mainly been confined to a discussion of the etymological elements of *berserkir* and *úlfheðnar*, but their earliest attestation may provide some indications by means of their poetic context; as Dale puts it, this discussion has been primarily based on a presupposed meaning akin to English 'berserk' that may be inaccurate to what Viking Age peoples or medieval writers believed *berserkr* to mean. Sound etymological and onomastic method requires close scrutiny of the earliest attestation, as well as a prioritisation of sources that are close to the object under study, both from a cultural, geographical, and linguistic perspective. In accordance with these observations, I now turn to a discussion of the earliest source.

2.2 Poetry: *Haraldskvæði*

For the purposes of this dissertation, the selected literature to be engaged with, *Haraldskvæði*, has been chosen based on a number of factors: chronological closeness to the events it describes, explicitness of reference to *berserkir* and/or *úlfheðnar*, significance of presence in scholarship, and significance of vocabulary used. The literature will be engaged with critically and, where appropriate, discussed in connection with material culture, with the intention of discerning information on *berserkir* and *úlfheðnar*.

Haraldskvæði, also *Hrafnsmál* and "Words of the Raven" in English, are modern names for a poem traditionally dated to *circa* AD 900 that celebrates King Haraldr hárfagri (Harald Fair-hair) Hálfdanarson (r. *circa* 860 - 932). Stanzas 1-11 are generally agreed to abide by the traditional dating, though the rest of the poem has come under scrupulous criticism from scholars, as the second half appears to be transcribed at a later date.[51] Therefore, only the first half of the poem, specifically stanza 8, will be addressed, while the *berserkir* reference later on in the poem

[49]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 105.
[50]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 106.
[51]Þorbjǫrn Hornklofi. "Haraldskvæði (Hrafnsmál)," pp. 91.

will be disregarded as its antiquarian nature does not suit the purposes of this discussion. Stanza 8, the focus for this discussion, contains the earliest known reference to *berserkir*, as follows:

Hlaðnir vôru þeir hǫlða	ok hvítra skjalda,
vigra vestrœnna	ok valskra sverða.
Grenjuðu berserkir;	guðr vas þeim á sinnum;
emjuðu ulfheðnar	ok ísǫrn dúðu.

> They [the ships] were loaded with men and white shields, western spears and Frankish swords. Berserks bellowed; battle was under way for them; wolf-skins [berserks] howled and brandished iron spears.[52]

The verb *grenja*, here in the form *grenjuðu*, is of particular interest as it is a verb exclusively used when describing aggressive noise generated by dangerous and/or predatory animals such as bears, wolves, lions, and elephants; this point has escaped the scholarly community, and should be discussed in greater detail.[53] As well, the fact that *úlfheðnar* are brandishing spears, a weapon that is more effective as part of a cohesive battle-line rather than a vanguard of *berserkir*, indicates a ritual connection with Óðinn more so than practical use.

While some scholars reject the notion that *berserkr* means ‘bear-shirt’ based on etymological grounds, *grenja*, within the context of contemporary use, reinforces the ‘bear-shirt’ interpretation. As far as the Dictionary of Old Norse Prose (University of Copenhagen) contains in its database, it appears that *grenja* holds more significance in this debate than it has been given consideration for. Used exclusively to describe bellowing noises made by dangerous and/or predatory animals, some of which were never native to Scandinavia, *grenja* is used to describe the bellowing of *berserkir* in *Haraldskvæði*: *Grenjuðu berserkir;* “Berserks bellowed.” If *berserkr* is to be taken as meaning ‘bare-shirt’ then the use of *grenja* in *Haraldskvæði* is anomalous, as ‘bare-shirt’ holds no connection with animal imagery, which is speculative at best. If *berserkr* is taken to mean ‘bear-shirt’ then the use of *grenja* is appropriate as a descriptor of both physical appearance and the noise produced by *berserkir* akin to that of bears. It therefore stands to reason that *grenja*, a verb used exclusively to describe dangerous/predatory animals, is

[52]Þorbjǫrn Hornklofi. “Haraldskvæði (Hrafnsmál),” pp. 102.
[53]ONP: Dictionary of Old Norse Prose. “ONP: Dictionary of Old Norse Prose.” grenja vb. (ONP). Accessed May 16, 2023. https://onp.ku.dk/onp/onp.php?o28643.

utilized in *Haraldskvæði* as a descriptor of *berserkr* as animalistic in appearance and behaviour. The use of *grenja* in such a way is strengthened by the verb *emja*, which is used to exclusively denote sound made by animals and supernatural beings, and so the animalistic nature of the *úlf-* component of the word is not in question.[54]

Spears are not generally effective weapons for warriors utilized as a vanguard and shock troops. Spears are commonly used in line-battle scenarios where the wielder can work in tandem with shields and other weapons to create a fortified line of spear points, preventing the enemy from pushing forward and breaking through the battle-line. Spears are also effective in this regard against cavalry, where the horse may be easily dispatched as a large and less manoeuvrable target than a warrior, thus dismounting the rider or crushing them underneath the animal. Classical armies, notably those of ancient Greece, understood the concept of creating a line of points well. The Greek *phalanx*, with pikes instead of spears though the principle remains largely the same, operated as an interdependent unit that only failed once the line of pike heads could no longer work alongside one another. While a spear alone, or with a shield, is an effective tool in combat, their length and lack of versatility prevents them from being effective weapons for a vanguard such as *berserkir*. In battle scenarios, as opposed to one-on-one duels, *berserkir* appear to be utilized as aggressive units. Even as the bodyguard of kings, such as those in King Harald's ship in *Haralds saga ins Hárfagra*, as will be discussed in greater detail later, *berserkir* are at the forefront of battle, slaying warriors over the course of the conflict where one would expect them to remain defensive to protect the king. With this understanding of spear combat and vanguard *berserkir*, it is unlikely that the *úlfheðnar* in *Haraldskvæði* would use spears as their primary tool for combat. It is possible though that *berserkir* and *úlfheðnar* used spears when part of the battle-line before they engaged with the enemy directly, and perhaps had thrown them at their enemy immediately before engaging as vanguard; this concept is also seen in the Classical world, where Roman legions used the *pila*, a javelin-type weapon, as a preliminary weapon before engaging with sword and shield. It is also possible that the spears served a ritual function in connection with Óðinn, who wields the spear *Gungnir* and throws it in the poem *Völuspá*. Various pieces of iconography, such as the Torslunda plates, depicts figures dancing with two spears and a helmet crested with two birds, often thought to represent Óðinn in a ritual dance context and his two

[54]ONP: Dictionary of Old Norse Prose. "ONP: Dictionary of Old Norse Prose." emja, ?ema cf. Lidén 1914, 260 note 6 vb., emja (ONP). Accessed May 16, 2023. https://onp.ku.dk/onp/onp.php?o17891.

ravens, Huginn and Muninn ('Thought' and 'Memory' in English, respectively). If this is the case, there is credence in the idea that *berserkir* and *úlfheðnar* used spears in ritual dance prior to battle, and perhaps as a preliminary weapon before engaging directly.

Stanza 8 of *Haraldskvæði* provides two contributing pieces of information for the 'bear-shirt' and 'bare-shirt' controversy. The verb *grenja* is used only to describe the noise made by dangerous and/or predatory animals, but in *Haraldskvæði*, *grenja* is used to describe the yelling of the *berserkir*. This verb usage connotes a connection between *berserkir* and dangerous and/or predatory animals, therefore potentially strengthening the 'bear-shirt' school of thought. Additionally, the description of spears being wielded by *berserkir* and *úlfheðnar* in *Haraldskvæði* indicates a ritual connection with Óðinn, as supported by the Torslunda plate. A spear is not a practical weapon for warriors used in battle as the vanguard and therefore may have a more ritualistic, temporary use immediately prior to *berserkir* and *úlfheðnar* engaging in battle.

2.3 Conclusion

The 'bear-shirt vs. bare-shirt' controversy has largely taken a literary and etymological focus without having yet moved to a practical method of falsification and/or validate either theory; as a dominant feature of the discussion surrounding *berserkir*, practical testing must supplement the discussion. Stanza 8 of *Haraldskvæði* provides valuable information on *berserkir* in the form of the verb *grenja*, which is only used to describe cries made by dangerous and/or predatory animals, which may strengthen the 'bear-shirt' school of thought. *Haraldskvæði* also contains the description of spears being wielded by *berserkir* and *úlfheðnar*, indicating a ritual connection with Óðinn.

3 Pre-Viking Age Depictions in the Archaeological Record

Though the Viking Age itself has few explicit representations or references to *berserkir* in the archaeological record, some pre-Viking Age pieces have been commonly accepted as references to *berserkir*, often including Óðinn-ic cult motif in connection with *berserkir*. Trajan's Column (erected *circa* AD 106 - 113), a piece of triumphal art commemorating the Roman Empire's Dacia campaigns under Emperor Trajan, often portrays half-naked northern Europeans

alongside legionnaires and auxiliaries as precursors to *berserkir*.[55] Little work has been done on the Gallehus Horns (*circa* AD 400) but are often considered to possess a depiction of *berserkir* in the midst of Óðinn-ic cult ritual due to similarities of the depictions with those found on the Torslunda Plates. The Torslunda Plates (6 - 7 centuries), also known as the Björnhovda matrices, may be the most commonly cited piece from the archaeological record for the study of *berserkir*. The four plates supposedly depict a ritualistic event commonly connected with Óðinn as a cultic scene. It is possible that these pieces are evidence of animal-warrior practices that set the precedent for Viking Age *berserkir*, whether that be by combative practice or ritualistic connection with Óðinn.

3.1 Bare-Chested and Barefoot Warriors on Trajan's Column

Speidel claims that Germanic 'berserks', which he uses instead of *berserkir*, first appear on Trajan's Column in the historical record, portraying these warriors in service of the Roman emperor, Trajan. Specifically, scene 36 on the Column depicts young men, bare-chested and barefoot, tightly grouped behind Trajan, who is on horseback (fig.2).

Figure 2. Roger B. Ulrich. (2013). *Trajan's Column in Situ (Scene 36/XXXVI)*. Trajan's Column.org. photograph. Retrieved May 22, 2023, from http://www.trajans-column.org/.

They appear again in scene 42, where Trajan gives a speech to thank his men for their victory at the battle of Adamklissi; Speidel claims the young men loom above the other Roman soldiers and turn halfway to face the audience while the Romans have their backs turned, therefore being given special recognition in the Column for exceptional service in combat (fig.3).[56]

[55]Encyclopaedia Britannica, Editors of Encyclopaedia Britannica. "Trajan's Column." Encyclopaedia Britannica, November 21, 2019. https://www.britannica.com/topic/Trajans-Column.
[56]Michael P. Speidel, *Berserks: A History of Indo-European "Mad Warriors,"*pp. 266. 'Column' has been capitalized by Speidel, and so this spelling convention will be used when referring to Trajan's Column.

Figure 3. Roger B. Ulrich. (2013). *Trajan's Column in Situ (Scene 42/XLII)*. Trajan's Column.org. photograph. Retrieved May 22, 2023, from http://www.trajans-column.org/.

Speidel further claims that literary and archaeological sources, such as Trajan's Column, allow scholars to trace the concept of 'Indo-European berserks' from the second millennium BC to the second millennium CE, spanning from West Asia to North America, "We can follow their peculiar customs such as frenzied dancing and naked fighting, and probe into their ideals of reckless bravery."[57] The literary and archaeological sources appear to point towards an origin or presence of the berserk-warrior style of combat in the Proto-Indo-European era, from which the *berserkr* role in battle changed greatly as centuries passed. Speidel claims that the *berserkr* style of combat survived longest in small-troop or single combat scenarios such as those described in medieval Scandinavian literature.[58]

Though Speidel presents avenues of research that may contribute to the scholarly record, the claims that he makes regarding the Column lack stringency. Upon viewing scene 42 of the Column, it becomes evident that the *berserkir* do not loom over the other soldiers, but stand upon an incline as the Column scenes spiral upward, and in fact the Roman standard bearers loom over the *berserkir*. The additional claim that *berserkir* on the Column are one piece of evidence for a common origin of 'Indo-European berserks' presumes much, implying this martial-cultural trait unanimously survived migration and cultural development from a Proto-Indo-European origin while altogether retaining frenzied dancing and naked fighting. Overall, Speidel presents interesting avenues of research worth pursuing, but has made inaccurate presumptions regarding martial culture and cultural migration.

[57]Michael P. Speidel. "Berserks: A History of Indo-European "Mad Warriors"," pp. 289-90.
[58]Michael P. Speidel. "Berserks: A History of Indo-European "Mad Warriors"," pp. 290.

3.2 Gallehus Horns

The Gallehus horns are Migration Era pieces, both found at Gallehus in Southern Jutland, Denmark. The longer of the two horns was found in 1639, and the shorter found a few metres away in 1734. The shorter bore the inscription *ekhlewagastiR : holtijaR : horna : tawido*, (I Lægæst, son of Holt (or 'from Holt') made the horn) before both were stolen and melted down in 1802. The horns' appearances are largely known from drawings of the 17th and 18th centuries, and so replicas were made in 1859-60, though these are too large, and in the 1970s, which are accepted to be the correct size though many details of the horns are missing.[59]

The third band of images from the mouth of the longer horn depicts two figures, one with a wolf's head and the other with what may be a bird's head. These figures face each other with weapons raised. Between these two figures stands an anthropomorphic figure with a snake's tail, winding behind the wolf-headed figure, while snakes are intertwined beneath the bird-headed figure with another snake figure behind it.[60] This wolf-headed figure could be an *úlfheðnar* or a 'berserk', which Speidel asserts served as Indo-European precursors to *berserkir*, though this cannot be said for certain.

The National Museum of Denmark (Nationalmuseet) provides two images of *berserkir* on the shorter of the horns (fig.4 and fig.5).[61]

Figure 4. Two naked *berserkir* with swords and shields. The National Museum of Denmark. (n.d.). *Berserkers*. natmus.dk. Accessed April 18, 2023. https://en.natmus.dk/historical-knowledge/denmark/prehistoric-period-until-1050-ad/the-late-iron-age/the-golden-horns/.

[59]The National Museum of Denmark. (n.d.). *The Golden Horns*. natmus.dk. Accessed April 18, 2023. https://en.natmus.dk/historical-knowledge/denmark/prehistoric-period-until-1050-ad/the-late-iron-age/the-golden-horns/.
[60]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 129-30.
[61]The National Museum of Denmark. (n.d.). *Berserkers*. natmus.dk. Accessed April 18, 2023. https://en.natmus.dk/historical-knowledge/denmark/prehistoric-period-until-1050-ad/the-late-iron-age/the-golden-horns/.

Figure 5. *Berserkr* with horns. The National Museum of Denmark. (n.d.). *Berserkers*. natmus.dk. Accessed April 18, 2023. https://en.natmus.dk/historical-knowledge/denmark/prehistoric-period-until-1050-ad/the-late-iron-age/the-golden-horns/.

Of particular significance to the discussion of *berserkir* are the two figures with horns, both in the second panel. One carries a spear and another unidentified item, while the second appears to be wielding a sickle and a sword. The horns curve outwards and do not possess bird-like terminals as does the horned figure on one of the Torslunda plates — which will be discussed later — though they may represent an earlier stylistic depiction of that figure as well as Óðinn-ic cult motif.[62] Moulds found in Ribe suggest that such objects depicting horned figures, like that found on the Gallehus horns, were produced in larger numbers, suggesting that a tradition of horned figures existed in art as early as the Vendel period.[63]

Providing an accurate interpretation of this horned figure as *berserkir* is difficult. While it appears that an animal warrior or animal mask featured in 5th century society, as it evidently did much later, whether or not these were worn in combat and/or battle is a question that does not appear to be answerable. Even if they did happen to wear a 'bear-shirt' much later, interpretation as *berserkr* is difficult on grounds of lacking evidential support and the masks likely being reserved for specific rituals.[64]

[62]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 130.
[63]Michaela Helmbrecht. *Figures with Horned Headgear*: *A Case Study of Context Analysis and Social Significance of Pictures in Vendel and Viking Age Scandinavia*. Lund Archaeological Review, 2008, 31-53, pp. 42.
[64]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 130.

3.3 Torslunda Plates

The Torslunda plates, also known as the Björnhovda matrices, are often cited as depicting a ritualistic, Óðinn-ic event. Plate D, depicting a figure with a tall headpiece and wielding two spears (left) as well as girdled with a sword; another figure is animal-headed, also girdled with a sword but wielding a single spear (right) (fig.6).

Figure 6. One of the Torslunda Plates. Supposedly Óðinn on the left with one eye put out and two spears. The warrior on the right may be an *úlfheðinn* and is drawing a sword with spear in hand. Part of the Swedish History Museum's exhibit "We Call them Vikings" presented by the museum on the media platform *Flickr*. https://www.flickr.com/photos/hist

This plate is the main piece of discussion in regards to *berserkir*.

The left figure, supposedly in the midst of dancing, wears a headdress that appears to be horned, but according to Viking Age Scandinavian art styles, these horns are more likely two bird terminals. These two birds may represent Huginn and Muninn, the ravens of Óðinn, though bird iconography is a common feature of medieval European art styles, not only Scandinavian, and so these birds could very well have an alternative significance, such as an expression of warriorhood. The left figure also has a punched-out eye on the left side (the viewer's right), a feature in common with Óðinn, the one-eyed *áss* (Old Norse 'god'). This is the only feature that can confidently be claimed as indicating Óðinn-ic iconography.[65]

Many have posited that the figure on the right represents a *berserkir*, specifically an *úlfheðinn*. This figure appears to be a human wearing some kind of animal mask; it is not definitive what animal this represents, but judging by the teeth and snout, pointed ears, and a long tail-like appendage at its rear, this is a wolf mask. There is little else to suggest that this is an *úlfheðinn*, but the possession of a sword connotes status, and therefore a referent to *berserkir* as

[65]Stefan Brink and Neil Price. *The Viking World*. Abingdon, Oxen: Routledge, 2008, 323-329. ISBN 978-0-203-41277-0, pp. 323-9.

choicest warriors. As discussed previously, the spear may hold ritualistic significance in connection to Óðinn as a ritualistic weapon.

When interpreted altogether, the matrices do appear to represent some kind of ritualistic event with dancing, weaponry, Óðinn-ic iconography, and an *úlfheðinn* as integral components to the scene. It is therefore possible that some *berserkr* individuals and/or *úlfheðinn* individuals partook in Óðinn-ic ritual practice. This ritual function may have extended to the rest of a warband, where *berserkir* were to perform pre-battle rituals to ensure the favour of Óðinn and included the responsibility of inducting young warriors into the group.[66]

3.4 Conclusion

Though the archaeological record is able to provide some amount of information regarding the presence of *berserkir* pre-Viking Age and in ritual context, it remains difficult for scholars to make claims with sufficient certainty based on this evidential category alone. Trajan's Column, while depicting what may be a precursor warrior-type to *berserkir*, has few explicit pieces of evidence. The Gallehus Horns depicts an animal warrior or animal mask, though it is impossible to say whether or not this mask was used for combative purposes in the 5th century, and therefore may be unrelated to the inherently combative *berserkir*. When interpreted altogether, the Torslunda Plates appear to represent a ritualistic event including dancing, weaponry, Óðinn-ic iconography and an *úlfheðinn*, possibly connoting that some *berserkir* partook in Óðinn-ic ritual practice.[67]

4 Experiments for Testing Use of Bear Pelt and Intoxication Hypothesis

These experiments were designed and conducted in cooperation with B&I in a controlled environment in the B&I training area on Vancouver Island, British Columbia, Canada. All participants (Lee Smith, Nicole Smith, Stephan Kime, Mikkel Klausen) are trained in the safe and practical use of historical weaponry, ranging from single-handed swords and daggers to two-handed longswords. The intent of these experiments is to provide a baseline for future

[66]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 119.
[67]Marianne Vedeler and Kulturhistorisk Museum. *The Oseberg Tapestries*. Oslo: Scandinavian Academic Press, 2019, pp.72-89. The Oseberg bear-headed figure could be considered to reflect a similar perception as the Torslunda plates: ritual procession /event with animal masks.

experiments that will discern the practicality of theories that *berserkir* wore 'bear-shirts' or that they fought while under the influence of substances.

4.1 'Bear-shirt': Practical or Improbable?

The cutting medium of this test is intended to simulate the arm of a muscular person, resembling that of a career fighter such as Lee. To do so, a cut of pork tenderloin to simulate musculature was wrapped in two layers of saran wrap to simulate skin, and placed around a stick of live wood (maple for the Huskarl, alder for the Long Saex) approximately one thumb width to simulate live bone.[68] This simulation of an arm was then wrapped in scraps of Canadian black bear winter-pelt and secured with rubber bands, which were replaced with each impact that compromised structural integrity.[69] The cutting medium was then secured to a cutting stand in order to provide a good cutting angle as per Lee's height at 172.72cm;[70] it must be noted that in a combative situation, these ideal cutting conditions would not be present, and therefore the results reflect ideal cutting conditions.[71] Pork was chosen for this experiment due to the similarities between pig and human physiology (fig.7).[72]

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[68]Daniel J. Wescott. *Postmortem Change in bone biomechanical properties: Loss of plasticity*. Science Direct, Forensic Science International, vol. 300, July 2019: 164-169. https://www.sciencedirect.com/science/article/abs/pii/S0379073819301525?via%3Dihub. Bone-in pork was not used due to the inability to practically obtain a butchered animal fresh enough for testing before biological changes after death would skew results.

[69]These pelt scraps were used in leu of a whole Canadian black bear pelt. It was originally intended that Lee and Steve would personally obtain an ethically sourced black bear pelt on Vancouver Island (British Columbia, Canada) where B&I is located. As yearly hunters of black bear for the purposes of providing food to their household, Lee and Steve had offered the pelt out of their own generosity, pending they were able to obtain a bear. During the hunting season for black bear on Vancouver Island in 2022, Lee and Steve were unable to obtain an animal. Due to this outcome, Chichester Canada Inc. was contacted and supplied the black bear winter pelt scraps used for this experiment.

[70]This target medium was chosen based on the design by Michael Janich, a leading authority in close-combat. https://www.martialbladeconcepts.com/m-janich. https://closecombatinstructors.com/michael-janich/. For future projects, a ballistics gel torso may be the medium of choice, though the funding necessary was not available for this project.

[71]In a combative situation the target is moving, which creates greater difficulty in delivering a martially viable cut. If the cutting medium used for this experiment was moving, the cuts delivered by Lee would likely be less effective than the experiment exhibits. Ideally, and for future experiments, the cutting medium would be mounted on a pulley system that allows difficult yet realistic movement patterns to better reflect historical cutting conditions.

[72]T.V. Collars, K.A. Darfour-Oduro, A.K. De, L.A. Rund, K.M. Schachtschneider, L.B. Schook, F.K. Seixas. *Unraveling the swine genome: implications for human health*. Annual review of animal biosciences, vol. 3, February 2015, 219-244. https://doi.org/10.1146/annurev-animal-022114-110815.

Figure 7. The materials used to create and secure the pork-target for the cutting experiment.

A sword and a saex were chosen as the cutting weapons for this experiment.[73] The sword was chosen as a weapon held by those in the higher echelons of Viking Age Scandinavian society, like career warriors such as *berserkir*, and the saex due to its more common ownership as a primarily utility knife. These weapons, the Huskarl type sword and Long Saex type saex (fig.8), were lent in sponsorship by Albion Arms Ltd. and hand-sharpened to an acceptable standard of being able to shave hair.[74]

[73]Spears and axes were common weapons in the Viking Age; these weapons were not chosen for this experiment because swords are highly technical and diverse weapons. While the axe and spear outperform the sword in some respects, the sword remains an extremely effective weapon in this time period before the advent of plate armour and plate armour components.

[74]Mike Sigman of Albion Arms Ltd. was contacted for correspondence. Please see "Acknowledgements" for further details.

Figure 8. The Huskarl (bottom) and Long Saex (Top) by Albion Arms.

As a test of cutting medium, Lee cut the pelt-wrapped pork with his Angus Trim arming sword which has been machine sharpened to an edge much finer than what is historically likely. The blade had cut cleanly through the entire medium, which served as a frame of reference confirming that a blade sharpened with modern methods can cut through a human limb clad in this pelt (fig.9).

Figure 9. The Angus Trim arming sword used as a frame of reference for the experiment.

For the cuts used by Lee, who is right hand dominant and weighing approximately 113.5kg, the four most basic cuts as per Joachim Meyer, author of *The Art of Combat* (1570), were used: descending from right to left (open-side), descending from left to right (cross-side), ascending from right to left (open-side), and ascending from left to right (cross-side).[75] These cuts were thrown from two starting positions: high-guard for descending cuts, where the blade is

[75]Jeffrey L. Forgeng. *The Art of Combat: A German Martial Arts Treatise of 1570*. Palgrave Macmillan, 2006. The Forgeng translation is often recognized as the most beneficial translation for HEMA practitioners and is therefore used for this project. See https://www.linkedin.com/in/jeffrey-forgeng-a827a832/ and https://www.worcesterart.org/about/curatorial-conservation.html for more on Forgeng's credentials.

held above the head with the arm fully extended, and low-guard for ascending, where the blade is held next to the front leg with its point towards the ground. These cuts were thrown at a 45° angle, the optimal cutting angle, without the use of stepping to keep the testing as basic as possible. Terms and concepts in Meyer's original Middle High German[76] will be replaced with modern English terms used by B&I when teaching so as to provide a clearer idea of concepts for a modern audience.

The Huskarl Sword[77]

Overall length:	94 centimetres
Blade length:	79 centimetres
Blade width:	6 centimetres
Weight:	1022 grams

1. **Open-side descending** yielded superficial wounds to the pork. The pelt remained undamaged. The pork showed signs of a pressure cut, where the flesh split under enough blunt force.
2. **Cross-side descending** yielded a broken bone. The pelt remained undamaged, but the plastic wrap was torn. The pork showed signs of a pressure cut. The results for both open and cross-side descending cuts contradicted expectations, and so to ensure that the Huskarl was sharp enough to cut flesh, the pork was laid upon the cutting stand without its birch insert and struck with a vertical cut of lesser force. The pork cut cleanly and deep, showing that the blade was in fact sharp enough.
3. **Open-side ascending** yielded no wounds to the pork. The pelt experienced damage at the point of impact, where a large amount of fur was cut from the pelt. The leather itself remained undamaged by the blade.
4. **Cross-side ascending** yielded no wounds to the pork. The pelt experienced damage at the point of impact, where a large amount of fur was cut from the pelt. The leather itself appeared to be undamaged. A piece of the pelt was removed from the pork along with its rubber band; it appeared to have been undamaged otherwise.

[76]Wayne Harbert. *The Germanic Languages*. Cambridge Language Surveys. Cambridge: Cambridge University Press, 2007. ISBN 9780511755071. https://doi.org/10.1017/CBO9780511755071, pp. 15-6.
[77]https://www.albion-swords.com/The%20Huskarl.html

The Long Saex[78]

Overall length: 77.79 centimetres

Blade Length: 55.56 centimetres

Blade width (at base): 4.13 centimetres

Weight: 970 grams

1. **Open-side descending** yielded superficial wounds. The pelt experienced damage at the point of impact, where a large amount of fur was cut from the pelt, showing clear signs of where the blade had connected. The leather itself was reached but appeared to be undamaged. The pork showed signs of a pressure cut, where the flesh split under enough blunt force.
2. **Cross-side descending** yielded extensive wounds. The pelt was completely severed, and the pork was cut down to the birch. This resulted in the birch shattering to the point of non-usability. The birch was therefore replaced with what was readily available: a piece of bamboo wrapped in electrical tape about a thumb's width. This is a training tool used in sparring called a 'single-stick'. It offers more structural integrity than the birch, but it is far more difficult to cut in this state. This has skewed the results somewhat, but given the previous results, it is unlikely that the Long Saex would cut through the whole medium regardless.
3. **Open-side ascending** yielded minor wounds. The pelt remained undamaged. The pork experienced a deep pressure cut that may have led to the birch also breaking if it was still present.
4. **Cross-side ascending** yielded extensive wounds. The pelt was completely severed, and the pork was cut down to the bamboo.

The results for this experiment show that the Huskarl, while being a longer sword, had less of an impact on the bear pelt and pork than did the Long Saex. Most of the Huskarl's cuts yielded superficial wounds except the cross-side descending cut, where the bone was broken but flesh uncut. The Long Saex was far more efficient, producing greater wounds except the open-side ascending cut where there were minor wounds. The possible reasons for such results will now be discussed.

[78] https://www.albion-swords.com/The%20Burgundian%20Seax.html

When throwing a basic cut such as these, the optimal way to grip the handle is with the handshake grip. The handshake grip pinches the handle between the thumb and index finger, allowing the blade to lean forward in the hand and rest against the palm and carpometacarpal joint (the base of the thumb), where the middle, index, and pinky fingers support this structure.[79] The Long Saex's handle is long enough to allow Lee to use the handshake grip. With the Huskarl, the handshake grip was unable to be used due to the length of the sword's handle and size of Lee's hand; instead, the hammer grip had to be used.[80] The hammer grip does not allow the blade to lean forward, instead having it point straight up from the hand perpendicular to the forearm, much like how one holds a hammer when inserting a nail.[81] This grip limits manoeuvrability for finer hand movements, range of the blade when striking, and force imparted on the cutting medium.[82] It is possible that the Huskarl's need to use the hammer grip is by design. In a line-battle style of warfare often utilized by Viking Age military bodies, the relatively short handle and large width of the pommel may have meant to lock the warrior's hand into the hammer grip, thereby supporting a defensive structure so vital to the retaining of the battle-line while still allowing the warrior to thrust the blade forward at their enemy. Swinging a sword in a line battle would likely be very difficult until the lines are broken, allowing more space to swing the sword;[83] a sword would also be found more effective in a raid or a duel where there is more space for the warrior to swing.[84]

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[79]K. Kuczynski. "Carpometacarpal joint of the human thumb." *Journal of anatomy* 118, no. 1, 1974, 119.

[80]Both blades reflect their historical counterparts, where the people using these weapons were likely of a smaller size than many modern people. Consequently, the handles more closely reflect the sizing for a smaller person's use than that of a modern martial artist such as Lee. This may be a contributing factor to the need for using the hammer grip as opposed to the ideal handshake grip with the Huskarl.

[81]Hammer grip is primarily used when parrying an incoming strike, as it allows a fighter to have a stronger defensive structure than does handshake grip.

[82]Irmelin Martens, Eva Elisabeth Astrup, contributions by Kjetil Loftsgarden and Vigard Vike. *Viking Age Swords from Telemark, Norway: An Integrated Technical and Archaeological Investigation*. Cappelen Damm, 2021. SBN PDF: 978-82-02-69685-6. https://doi.org/10.23865/noasp. This is a recent publication that discusses Viking Age swords extensively. There are some theories that Viking Age swords such as the Huskarl were meant to be gripped with the pommel inside the palm, or that some of the original swords were meant to have a slightly out-turned pommel to better facilitate a handshake grip. The former is unlikely, as the pommel within the palm allows less control of the blade, creating uncontrolled and unsafe movements; the latter is also unlikely, as it appears the archaeological finds do not support this.

[83]Medieval combat re-enactment groups, such as Viking Age reenactors, often if not always disallow thrusting. This is due to safety reasons, as the re-enactment portion of the practice often has people with little or no face protection. This lack of protection is in the spirit of wearing historically accurate clothing and armour, where people would not have the modern martial arts protection worn by HEMA practitioners and others; a thrust with proper martial technique in a re-enactment context could readily lead to injury and perhaps death, despite the bluntness of the weapons. It is for this reason that reenactors disallow thrusts, strikes to the head in many cases, and use light cuts with swords and other weapons that would historically deliver little injury given the thick clothing and armour.

[84]Irmelin Martens. *Viking Age Swords from Telemark, Norway*, pp. 40-1.

The shape of the swords also affects their cutting abilities. The Huskarl is significantly longer than the Long Saex with a pommel and crossguard adding to handle weight for even balancing, yet weighs only 52 grams more. The Long Saex has a shorter, yet more robust blade than the Huskarl, with no pommel or crossguard adding to its weight. The robustness of the Long Saex's blade and lack of pommel or crossguard may have been a boon for this experiment, where the concentrated weight allowed it to deliver force on a smaller area of the blade than the Huskarl, therefore producing greater wounds.[85] In a combat scenario, the Huskarl would still outperform the Long Saex in terms of reach and manoeuvrability, though be outperformed in terms of power generated by the cut.

While many of the cuts delivered yielded pressure cut wounds and severing of the flesh, those that did not reach the bone are considered superficial wounds; those that reach bone are considered martially viable wounds. This is because the human body can continue to operate with deep lacerations, and the adrenaline in one's body at this time allows a person wounded in this way to continue being a threat. Therefore, the general rule for a martially viable cut is that a blade must reach bone in order to stop an enemy's body part from operating. Broken bones may also achieve this outcome but produce no external blood loss and a lesser amount of shock, allowing the enemy to continue being a threat, and so cuts causing broken bones are martially viable only on a case-to-case basis. The ideal wounds delivered by a sword are the severing of a limb or extremity, severing of the head or cranium from the rest of the skull, a cut to the torso that travels through to the center (though this is unlikely with a single-handed sword), and thrusts to the head and upper torso. The Huskarl was largely unable to deliver more than superficial wounds to the pork while the Long Saex was able to deliver two wounds that struck bone, which are martially viable.

This experiment has shown that the 'bear-shirt' interpretation of *berserkr*, while having a strong etymological basis, has strong support as a practical piece of armour. The Huskarl struggled to deliver martially viable wounds to the pork, while the Long Saex was able to deliver martially viable wounds half of the time, all of these while contained in ideal cutting conditions. If the target had been moving in a combat scenario, it is likely that these wounds would be even lesser, and perhaps not even occur. Additionally, the conditions for this experiment relied upon

[85]A smaller point of impact produces proportionately greater force. This is why axes tend to produce more force than a sword, and a spear thrust penetrates with greater efficiency than either a sword or axe.

Canadian black bear (ursus americanus)[86] winter pelt, where for greater accuracy this experiment would require Eurasian brown bear (ursus arctos)[87] pelt, though Eurasian brown bear is endangered and thus obtaining an ethically produced pelt would be difficult. As far as this experiment is able to discern, it is likely that *berserkr* has a double meaning as posited by Dale: that *berserkr* references both lacking a shirt of mail as a career warrior such as berserkir would be expected to possess, 'bare-shirt', as well as wearing a bear pelt as armour, 'bear-shirt'.[88] Based on the evidence, it can now be confidently posited that *berserkir* wore Eurasian brown bear pelt with a winter coat as the extra fur provides greater protection.

4.2 The Alcoholic Assault

Berserkir drinking alcohol prior to combat in order to reach the *berserksgangr* state, as has been theorized by some scholars, may lack literary and archaeological evidence, but the theory had yet to have been tested in a practical setting, thereby more clearly discerning if it is possible that *berserkir* drank alcohol for combat purposes. Thus, an experiment was designed and conducted in cooperation with B&I, where Lee, Stephan (Steve), and Mikkel entered a series of sparring matches with Lee and Mikkel drinking alcohol, Steve as the sober control group, and Nicole operating the cameras as well as consulting. Lee was chosen as part of the intoxicated group due to his status as a successful career martial artist, placing him as the closest match to a Viking Age career warrior such as *berserkir*; Mikkel was chosen to be part of this group so he may obtain a first-hand account of combat under the influence of alcohol for his research. Steve was chosen as the sober control group due to his high skill level along with his ability to analyse each sparring match acutely, thus providing accurate perceptions of Lee's and Mikkel's combative abilities as the experiment progressed. Nicole was chosen to operate cameras as the most experienced with video editing and filming and as a highly skilled fighter consulted for the experiment itself. While less complex than would have been ideal, the experiment has been enlightening on the possibility of alcohol being used by *berserkir* for combative purposes.

The method of operation chosen is as follows:

- Lee: Intoxicated Group, 113.5kg / 250lbs (recovering from an injury)

[86]Encyclopaedia Britannica, Editors of Encyclopaedia. "black bear." Encyclopaedia Britannica, February 8, 2023. https://www.britannica.com/animal/black-bear.
[87]Encyclopaedia Britannica, Editors of Encyclopaedia. "brown bear." Encyclopaedia Britannica, October 6, 2022. https://www.britannica.com/animal/brown-bear.
[88]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 158.

- Mikkel: Intoxicated Group, 88.53kg / 195lbs
- Steve: Sober Control Group, 102.15kg / 225lbs

1. For each round of sparring, all three participants will spar each of their opponents in a one-on-one match.[89] The match will end after 1.5 minutes or once a participant has scored three martially viable hits. Three points have been chosen because this number allows for a significant number of exchanges while minimizing the exhaustion of the participants, which would skew results. The first round of sparring is done with no alcohol as a baseline understanding of how Lee and Mikkel are affected by alcohol in proceeding matches. Each round of sparring took approximately ten minutes to conduct.
2. The alcohol chosen for this experiment was Żubrówka Biała vodka. It was chosen for its pleasant flavour as to not cause bodily irritation in the participants, its uncarbonated nature allowing the participants to avoid bloating which would skew combat results, and it is easily measured in single-drink increments. https://www.bcliquorstores.com/product/511063
3. Bodyweight ratios were calculated for both Lee and Mikkel so blood-alcohol content (BAC) among participants could be calculated. In order to feasibly retain a level of consistency, this experiment opted to use single-drink increments and list BAC per participant per round of sparring.[90]
4. After each single-drink increment is taken (1.5oz of 40% liquor, as is Żubrówka Biała vodka) a rest period is taken to allow participants to rest and the BAC to rise.[91] During this period, participants drank small amounts of horchata to stay hydrated, refraining from too much liquid lest they become bloated, making good-quality sparring difficult to achieve.
5. A separate video is to be filmed per test for ease of organization and accessibility. The videos presented for this dissertation are those between Mikkel and Lee, presenting the evolution of their sparring as more alcohol was consumed. Accompanying these videos are Steve's control-group notes, outlining overall performance and change in performance of Lee and Mikkel (these notes have been edited in accordance with proper punctuation and spelling, but are otherwise unchanged).
6. The weapon set used for this experiment is arming sword and buckler as per the B&I interpretation of the I.33 combat manuscript, the earliest known European manuscript in existence (transcribed *circa* 1320-1330).[92] This weapon set was chosen due to the

[89]The intensity of these sparring matches is not as high as tournament or survival intensity. In the future when this experiment can be revisited and done with greater resources, such as medical staff on hand, the sparring intensity may be increased, the number of sparring rounds increased, and number of participants increased. For this particular experiment though, for safety reasons sparring intensity was practiced. Additionally, whether or not a participant has won a sparring match is irrelevant due to the disparity of skill levels between Mikkel and Lee as well as Steve.
[90]American Addiction Centers. "Blood Alcohol Content (BAC) Calculator." Blood Alcohol Content (BAC) Calculator (Beer, Wine & Liquor). Accessed March 7, 2023. https://alcohol.org/bac-calculator/. This calculator by American Addiction Centers was used due to its usage by Stanford University's website in tandem with Vaden Health Services.
[91]Vaden Health Services. "What Is Blood Alcohol Concentration (BAC)?" Stanford University. Accessed March 7, 2023. https://vaden.stanford.edu/super/learn/alcohol-drug-info/reduce-your-risk/what-blood-alcohol-concentration-bac. This Stanford University page was used to determine single-drink increments to be used with 40% vodka.
[92]Leeds Royal Armouries Museum. "World's Oldest Fencing Manual." Royal Armouries, June 7, 2022. https://royalarmouries.org/stories/our-collection/world-oldest-known-european-fencing-manual-i-33/. Stuart Ivinson

manuscript's status as the oldest known European combat treatise (bringing it chronologically and geographically closer to the Viking Age North Sea than other combat treatises), accessibility to equipment used in the manuscript (which are related to those used by Viking Age warriors but are not identical), and technical usage of sword and buckler as efficient pieces of one-on-one duelling equipment.[93]

Disclaimer and Introductions

https://youtu.be/vS49lLm-iJk

Round 1, no drinks: 0oz

Drink
10min of sparring
Lee + Steve
Mikkel + Steve
Lee + Mikkel

Steve's Test Notes

Lee:	Tense, not terribly mobile. Still accurate and powerful.
Mikkel:	Mobile but predictable. Easy patterns.

Round 2, one drink: 1.5oz

https://youtu.be/5klfrYsjdQU

https://youtu.be/D8pXwuvWzSQ

Stuart is the Royal Armouries Librarian. He has made extensive studies of various aspects of medieval warfare over the years.

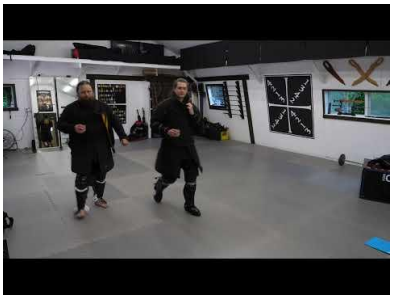
[93]Future revisiting of this experiment will see period-accurate equipment used.

Drink
15min wait for blood-alcohol level to rise / rest
Lee (0.02% BAC) + Mikkel (0.02% BAC)
10min sparring
Lee + Mikkel
Mikkel + Steve
Lee + Steve

Steve's Test Notes

Lee:	More relaxed. More fluid. Very precise. Very reactionary but explosive.
Mikkel:	More loose. A little more creative. Still linear but very mobile.

Round 3, two drinks: 3oz



https://youtu.be/A8a5hjKjrQc

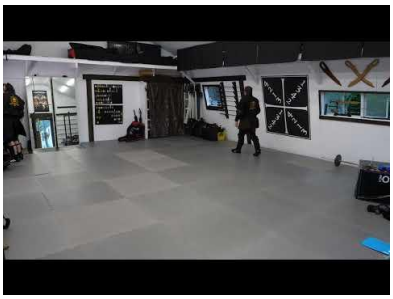
https://youtu.be/CRu64ZLWJ5g

Drink
15min wait for blood-alcohol level to rise / rest
Lee (0.03% BAC) + Mikkel (0.04% BAC)
10min sparring
Lee + Mikkel
Mikkel + Steve
Lee + Steve

Steve's Test Notes

Lee:	Slower. Very reserved, very reactionary. Good placement and recovery. Less mobile.
Mikkel:	More careless. Less defence. More creative with combinations but not clear about intention. Constantly moving in to control.

Round 4, three drinks: 4.5oz



https://youtu.be/kVhsW_KnWKw

https://youtu.be/0rsClV7DIwc

Drink
15min wait for blood-alcohol level to rise / rest
Lee (0.05% BAC) + Mikkel (0.06% BAC)
10min sparring
Lee + Mikkel
Mikkel + Steve
Lee + Steve

Steve's Test Notes

Lee: Very behind. Constantly behind tempo. Easy to chase. Still very fast but motions somewhat panicky response with accurate targeting.

Mikkel: Very dismissive of defence. More focused on attack, more aggressive and random. Less accurate. More focused on volume of attacks than where to attack.

Round 5, four drinks: 6oz

https://youtu.be/NLOsi-9eQ8A

https://youtu.be/h6JOVLLVKpM

Drink
15min wait for blood-alcohol level to rise / rest
Lee (0.06% BAC) + Mikkel (0.08% BAC)
10min sparring
Lee + Mikkel
Mikkel + Steve
Lee + Steve

Steve's Test Notes

Lee: Accuracy down but response still explosive. Very timid and defensive. Unsure about proper response. Accuracy is still good. Much less mobile. Relying on handwork.

Mikkel: Complete disregard for defence. Eats hits to hit back. Will respond to being hit by hitting. Somewhat more suicidal. Still hard to predict. Too relaxed when defending actively. Sober fighters will be able to dominate with raw power. Martial assessment: ultimately short lifespan.

According to Steve's observations, both Lee and Mikkel experienced drastic decreases in combative ability by the end of the experiment. Round 2 at 1.5oz appears to have had some positive effects on Lee and Mikkel, allowing their fighting to be more relaxed and fluid in their movements. From round 3 onwards, the combative abilities of Lee and Mikkel decreased drastically: Lee became more defensive in his actions and his mobility decreased, making him an easier target to move around and hit; Mikkel became more aggressive and unable to properly defend himself, which would allow an opponent to abuse his recklessness. Overall, it appears that while the drinking of alcohol has some benefits in combat, anything more than 0.02% BAC sees a drastic decrease in combative ability, and therefore a decrease in survivability.

It is reasonable to claim that it is unlikely that *berserkir* had drunk an amount of alcohol exceeding what may have been drunk in a ritual procession prior to battle or a raid. While this is the current, albeit tentative, claim, this experiment requires a larger testing group in order to be sufficiently definitive.

4.3 Conclusion

These experiments have shown that the 'bear-shirt' interpretation of *berserkir* may have been used as effective pieces of armour by *berserkir*, and the theory that *berserkir* may have fought under the influence of alcohol is highly unlikely. Though complex, these experiments are limited in scope and their ability to discern either point. These experiments did not simulate real-world conditions as would have been ideal; the bear pelt used was not accurate for the bear species common in Viking Age Scandinavia, the cutting target that the bear pelt was wrapped around is simplistic in comparison to the human body, the sparring weapons used were not period or geographically accurate, the group of sparring participants was relatively small, and substances tested were very limited due to legality reasons. In the future, it is hoped that these experiments

may be revisited with greater funding, a larger pool of people participating, and perhaps special permissions so that their accuracy may be increased.

5 Contributing to the Scholarly Record

The scholarly tradition on *berserkir* has a long history and addresses many angles from which to view and research these warriors, and susceptibility to testing has been the main guiding principle of this dissertation up until this point. As of now, scholars have yet to view *berserkir* on an individual basis as warriors of a peculiar disposition within martial culture. From Ödman's theory that *berserkir* consumed Fly agaric mushrooms to Beard's, Breen's, and Blaney's *berserkir* roles in literature, scholars have overgeneralized *berserkir*, restricting them to definitions dependant on them as a homogenous group; the same methodology practised when defining *berserkir* through a Classical Studies framework, such as Voltaire who viewed the time period through a Classical Studies lens.[94] It may be useful now to explore how an inclusive approach, vis-à-vis testing methodology, may provide a more holistic picture of the historical *berserkir* where improbabilities have been removed.

Having tested some of the most prominent theories on the nature of *berserkir*, these warriors will now be viewed from a humanistic and martial-cultural viewpoint, thereby placing *berserkir* within the historical record as a multi-faceted people that can seldom be defined with a single overarching theme.

5.1 Social Function

The social function of *berserkir* is inconsistent and may encapsulate multiple roles where one may act as protagonist and/or antagonist. As protagonists, *berserkir* often serve as bodyguards of a king, the vanguard in military engagements, and prominent landowners in their communities, allowing them to enjoy a high station within a martial social stratum. As antagonists, *berserkir* act as marauders, belligerent duellists, and generally disruptive forces in society. Whatever the role that *berserkir* may take, it is evident that they possess the ability to act as both protagonist and antagonist, sometimes both at different moments.

[94]Alfred J. Andrea. "The Myth of the Middle Ages." In *The Historian*, vol. 55, no. 1, 1992: 183-88. Accessed April 2, 2021. http://www.jstor.org/stable/24448338, 183-185.

As protagonists, *berserkir* are depicted among the warband of King Harald in *Haralds saga ins Hárfagra* (Harald Hafager's Saga; from here *Haralds saga*): "Þar skipaði hann á hirð sinni ok berserkjum," (In it [Harald's ship] he set his bodyguard and berserks).[95] By placing *berserkir* in his own ship along with his bodyguard, Harald makes it apparent that the *berserkir* are of high value to his warband, entrusting them with his own safety. Chapter 18 of *Haralds saga* also describes an *úlfheðinn* by the name of Haklang at the battle at Hafrsfjord, where he is slain.[96] Haklang's death and reputation noted as such explicitly indicates high social station in Harald's warband. In *Haralds saga* the berserkir enjoy a positive reputation as Harald's bodyguard and vanguard in Harald's fleet. Chapter 2 of *Grettis saga* depicts a *berserkr* by the name of Thorir, the leader of his own warband, who is described as 'the greatest *berserkr*'. He and his men are brought into service of King Kiotvi in opposition to King Harald, where they enter a naval battle at Hafrsfirth. Thorir Longchin, a ship captain under King Kiotvi, has Thorir the *berserkr* aboard. They are flanked by King Harald's and Onund's ships, where Thorir is slain, having defended Thorir Longchin stoutly. While Thorir the *berserkr* is not necessarily the protagonist of *Grettis saga,* he ostensibly displays the characteristics of protagonist under King Kiotvi, having defended Thorir Longchin to his own death and possessing his own warband.

Egils saga depicts the main figure, Egil, as both protagonist and antagonist *berserkr*, occupying a space of social dichotomy.[97] In chapter 64, Egil is compelled by kinship ties with Arinbjorn to stand-in for Fridgeir in a duel with Ljot the Pale, a marauder known for challenging landowners to duels for rights to their property.[98] In this duel Egil enters *berserksgangr* and subsequently slays Ljot, thus showing Egil to be *berserkr*-protagonist. Instances of *berserksgangr* are not restricted to Egil as protagonist, nor to his adult life. In his childhood, Egil loses his temper and hits a boy with a bat during a ballgame. The boy, Grim, dashes Egil to the ground and threatens him with further mistreatment if Egil did not cease his hitting. Egil leaves, but later returns and kills Grim for his treatment: "Egil ran up to Grim and drove the axe into his head,

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[95]Snorri Sturluson, and Bjarni Aðalbjarnarson. *Heimskringla: 1*. Íslenzk Fornrit (trykt Utg.). Reykjavík: Hið íslenzka Fornritafélag, 1941, pp. 115.
[96]Snorri Sturluson. *Heimskringla: I,* pp. 115.
[97]There is scholarly debate on whether or not Egil may be a *berserkr*, though not explicitly described as such in the saga. Selected from *berserksgangr* instances in *Egils saga*, it is agreed here that Egil is a *berserkr*, though may be better known as a poet as the saga more commonly refers to him as.
[98]*Egils saga* describes Ljot the Pale as a *berserkr*. Despite this saga's claim that Ljot was a *berserkr*, his actions in combat with Egil indicate that he is an imposter, using imitation techniques in order to intimidate those subject to his marauding.

right through to the brain."[99] By killing Grim, Egil is *berserkr*-antagonist. Therefore, Egil occupies space as both *berserkr*-protagonist and antagonist.

Skallagrim, Egil's father who the saga claims as a *berserkr*, occupies social space as both protagonist and antagonist, like Egil. As a protagonist, Skallagrim is a *berserkr* warrior as well as a generous landowner, evident by his offering of choice land to Yngvar.[100] As an antagonist, Skallagrim kills Thord, a local boy, and almost kills Egil in a fit of *berserksgangr* during a ballgame. Thorgerd Brak, a servant of Skallagrim who helped raise Egil, is also killed during Skallagrim's fit of *berserksgangr*: Thorgerd jumps off a cliff and into the sound, attempting to swim away from Skallagrim, who lifts a boulder and throws it between her shoulder blades, killing her.[101]

Haralds saga ins Hárfagra and *Egils saga* contain prime examples of *berserkr* with inconsistent social functions, where they may be protagonist and/or antagonist depending on the given situation and individual *berserkr*, whether they may be a king's bodyguard, a wealthy landowner, or marauding duellist. Based on the evidence provided, the most apt definition for the social function of *berserkir* may be 'multifaceted warrior figure', a definition that allows scholars to view *berserkir* without restricting them to a particular schema as has been done in the past.

5.2 Function in Norse Belief

Many theories have been presented regarding the function of *berserkir* in Norse belief. Popularly, they have been described as warriors of Óðinn and it has been suggested that *berserkir* were explicitly involved in a bear-cult with Óðinn as figure-head. While a connection between *berserkir* and Óðinn is possible, many proposed theories of a bear-cult are based on inconclusive literary and material evidence, thereby forcing the definition of 'cult' where it does not belong.

The opening sequence to Snorri Sturluson's *Heimskringla, Ynglinga saga*, describes *berserkir*.[102] As per this saga, Óðinn is the foremost shapeshifter of Norse mythology, a

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[99]Bernard Scudder, trans. "Egil's Saga." In *Sagas of the Icelanders*, Jane Smiley and Robert Kellogg, 2000; London, Penguin, 2001; 8-184, pp. 61-2.
[100]Snorri Sturluson. *Heimskringla: I*, pp. 77. The saga does not give any indication that this offering of choice land was for any reason other than generosity. One may argue that Skallagrim is offering this land in order to achieve a level of social capital with Yngvar, but this would be speculatory.
[101]Snorri Sturluson. *Heimskringla I*, pp. 98-103. Thorgerd Brak's death is the reason that this sound in Iceland is called Brákarsund in the town of Borgarnes, Iceland. Name spellings in this section are based on those contained in *Sagas of Icelanders*.
[102]Snorri Sturluson. *Heimskringla I*, pp. 31-54.

characteristic that many scholars have connected with the shapeshifting descriptions of *berserkir*.[103] As discussed above, the etymology and practical experiments support the idea that *berserkir* wore bear pelts for combative purposes, but the pelts may also serve as a visualization of the *berserkr*-Óðinn connection vis-à-vis shapeshifting. Current scholarship has addressed this concept extensively; Ármann Jakobsson is one such scholar, who emphasizes that defining the process of shapeshifting as understood by medieval Scandinavians is difficult.[104] While defining the process of shapeshifting is difficult, if *berserkir* are viewed as having a connection with Óðinn through the shared characteristic and visualization of shapeshifting, it may be reasonably claimed that *berserkir* hold a belief-based connection with Óðinn while refraining from insinuating the unlikely existence of an explicit, singular bear-cult.

It has been proposed on many occasions that psychoactive substances had been consumed by *berserkir* as part of ritual practice in order to reach *berserksgangr*. Ödman's suggestion that *berserkir* consumed the Fly agaric mushroom (also known as Fly amanita and Amanita muscaria) in order to reach *berserksgangr* has remained a popular theory. Although Ödman's theory had been rejected throughout the 20th century due to a lack of evidence to support his claim — even the sagas contain no indication that this may be true — along with the theory that intoxication by alcohol may have been used to reach *berserksgangr*, scholars continue to debate the possibility of substance use.[105]

The Torslunda plates are often analyzed for evidence of religious function directly relating to Óðinn. One plate in particular is often referred to as evidence of *berserkr* bear-cult, but this remains inconclusive and debatable. Though this debate is persistent, the Torslunda plates do appear to depict some kind of ritualistic event, if not necessarily a bear-cult. The figure on the left, possibly, dancing whilst wielding two spears and girdled with a sword, is commonly posited in the scholarly debate as Óðinn with its one eye having been punched out; it wears a headdress reminiscent of two birds, which may represent Huginn and Muninn, the ravens of Óðinn.[106] The other figure on this plate is a warrior-figure wearing a bear or wolf mask, armed with a spear and a sword, which is posited as a *berserkr* or *úlfheðinn*. As discussed in greater detail in chapter 3,

[103]Stefan Brink and Neil Price, *The Viking World*, pp. 241.
[104]Ármann Jakobsson. "Beast and Man: Realism and the Occult in Egils saga," pp. 33-5.
[105]Anatoly Liberman. "Óðinn's Berserks in Myth and Human Berserks in Reality," pp. 108-109.
[106]Stephan Brink and Neil Price, *The Viking World*, pp. 323-9. Additionally, Smarthistory.org is a non-profit art history organization that provides a good introduction to the Viking Age animal art styles of Scandinavia. https://smarthistory.org/viking-art/.

the assertion that the Torslunda plates depict Óðinn due to the punched-out eye and *berserkr* or *úlfheðinn*, and therefore a bear-cult connected to Óðinn requires further development to support these claims. Alternatively, the plate could depict a *berserkir* or *úlfheðnar* fighting alongside Óðinn as one of the *einherjar*, the army of the dead that occupy Valhǫll (English Valhalla) that will march out for the final battle at Ragnarök, connoting service under Óðinn as the warrior's ultimate destination.[107] There have been assertions that *berserkir* and *úlfheðnar* serve as the *einherjar*, which is supported by other cultures exhibiting similar ritual death and rebirth initiation rituals.[108] Contemporary Scandinavians may have presumed that many of these prolific fighters died in combat and entered Valhǫll as *einherjar*.

The function of *berserkir* in Old Norse belief is limited. Though there appears to be a connection between *berserkir* and Óðinn through the shared characteristic of shapeshifting, the theory that ritual substance use was dictated by an explicit bear-cult with Óðinn as figure-head has weak evidential support. Furthermore, the Torslunda plate depicting a dancing warrior and a *berserkir* or *úlfheðnar* support a connection between the warriors and Óðinn through death and ritual rebirth as *einherjar*. With this evidence, it appears likely that medieval Scandinavians rationalized and understood *berserkir* as shapeshifters thereby connecting them to Óðinn as chief shapeshifter, and after death retaining those connections as *einherjar* with Óðinn as god-head of the army of the dead in Norse belief.

5.3 The *Úlfheðnar*

It has been theorized that the *úlfheðnar* are a subset of *berserkir*, those who wear *úlfheðnar* (wolf-shirts).[109] This subset of *berserkir* has comparatively little evidence and consequently little research material compared to their *berserkir* counterparts, and therefore cannot be discussed in as much detail. Nevertheless, *úlfheðnar* must be discussed; if scholars do not discuss *úlfheðnar* in tandem with *berserkir*, they risk assuming synonymous definitions where there may not be.

The social function of *úlfheðnar* does not appear to be considerably different from that of *berserkir*, but some scholars do find it necessary to differentiate between them. Aðalheiður

[107]It is reasonable to theorize that a career warrior's ultimate goal in a martial society, such as the *berserkir*, would be to become a warrior in death as well. St. George, the Christian saint that was born a Roman soldier and supposedly slayed a dragon, is similar in this regard as he is depicted as a warrior in saintly, Christian iconography.
[108]Roderick Dale, Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 57; footnote 154.
[109]Roderick Dale, "The Myths and Realities of the Viking Berserkr," pp. 98-99.

Guðmundsdóttir is one such scholar who claims that "*úlfhéðnar* and *berserkir* are two kinds of animal-warriors, first mentioned in *Haraldskvæði* (*Hrafnsmál*)."[110] Aðalheiður cites stanza 8, as discussed and analyzed in chapter 1, from *Haraldskvæði* for their belief that *úlfheðnar* are a subcategory of *berserkir*. Aðalheiður's assertion that *úlfheðnar* are a subcategory of *berserkir* is reasonable given the source material available, and clear differentiation from *berserkir* in *Haraldskvæði*. While the social functions appear to be similar, it would be presumptuous to claim *berserkir* and *úlfheðnar* are synonymous without more information on animal-warrior practices in Classical, Viking Age, and medieval Scandinavia.

The religious function of *úlfheðnar*, like social function, does not appear to be considerably different from that of *berserkir*. Due to the spear-wielding and shapeshifting imagery, as discussed above regarding *Haraldskvæði*, it is possible that *úlfheðnar* and *berserkir* have a similar connection with *Óðinn* on ritualistic grounds.[111] Ármann supports this by pointing out that "at times *berserkir* are also referred to as *úlfheðnar*… which recalls the possible interpretation of the Old Norse word ber-serkr as "in the skin of a bear.""[112] This close relation between *berserkir* and *úlfheðnar* suggests similar religious functions of both, though they are not synonymous.

Defining the social and religious functions of *úlfheðnar* is as difficult, if not more so than, as defining those of *berserkir* due to a comparatively small corpus of evidence and scholarly work. Based on the information currently present, the social and religious function of *úlfheðnar* and *berserkir* will be considered largely the same, though more research may be needed.[113]

5.4 Conclusion

According to two of the most prominent examples of *berserkir* in saga literature recounting past events, *Haralds saga* and *Egils saga*, *berserkir* possess inconsistent social functions, where they may be protagonist and/or antagonist depending on the given situation and

[110]Aðalheiður Guðmundsdóttir. "The Werewolf in Medieval Icelandic Literature." *The Journal of English and Germanic Philology* 106, no. 3 (2007): 277-303. Accessed March 30, 2021. http://www.jstor.org/stable/27712657, pp. 280. The spelling of *úlfheðnar* is presented as *úlfheðnar* by Aðalheiður.
[111]Aðalheiður Guðmundsdóttir. "The Werewolf in Medieval Icelandic Literature," pp. 277-278. Aðalheiður claims that shapeshifting in the form of bears, but most commonly wolves, is prominent in traditions of northern regions, even in Iceland where there are no wolves.
[112]Ármann Jakobsson. "Beast and Man," pp. 34.
[113]Anatoly Liberman. "Óðinn's Berserks in Myth and Human Berserks in Reality," pp. 101. "From the text it is even impossible to tell whether they belonged to the same (and then whose?) army and whether *grenioðo berserkir* is a poetic synonym of *emioðo úlfheðnar*, in which case *berserkir* means the same as *úlfheðnar*."

individual *berserkr*. *Berserkir* are as inconsistent in Norse belief as they are in social function. Though there appears to be a connection between *berserkir* and Óðinn, it is likely that medieval Scandinavians rationalized and understood *berserkir* as shapeshifters in connection with Óðinn, even if not all *berserkir* partook in ritualistic practice. The *úlfheðnar*, commonly referred to as a sub-type of *berserkir* is no easier to define in a social or belief context than *berserkir* due to a comparatively small corpus of evidence, though based on what evidence is possessed, they appear to have very similar functions.

6 Conclusion: The Legendary *Berserkir*

This dissertation has explored the topic of *berserkir* in regard to contextualization via the research history on *berserkir*, testing whether or not it can be reasonably claimed that *berserkir* existed to begin with, the data gathered from conducting practical experiments and what they state, and finally contributing an overall picture of historical *berserkir* based on the research conducted. This dissertation has considered various theories from a range of scholars and has tested them in terms of stringency, finding improbabilities and removing them from the historical image of *berserkir*. To conduct this testing this dissertation provided: a critical analysis of the likelihood that *berserkir* existed with research on the term's etymology as well as the Viking Age poem, *Haraldskvæði*; pre-Viking Age archaeological finds that depict *berserkir* or earlier precursors to; two experiments utilizing personal Historical European Martial Arts (HEMA) experience with Blood and Iron Martial Arts (B&I) in order to discern whether or not *berserkir* wore bear pelts or consumed substances to reach *berserksgangr*; a final overview of this dissertation's contribution to the scholarly record based on these findings.

The 'bear-shirt vs. bare-shirt' controversy has largely taken a literary and etymological focus. Stanza 8 of *Haraldskvæði* provides valuable information on *berserkir* in the form of the verb *grenja*, which is only used to describe cries made by dangerous and/or predatory animals. *Haraldskvæði* also contains the description of spears being wielded by *berserkir* and *úlfheðnar*, indicating a ritual connection with Óðinn.

The archaeological record remains a difficult evidential category for scholars to make claims with enough certainty. Trajan's Column, while depicting what may be a precursor warrior-type to *berserkir*, has few explicit pieces of evidence. The Gallehus Horns depict an animal

warrior or animal mask. When interpreted altogether, the Torslunda Plates appear to represent a ritualistic event including Óðinn-ic ritual practice.

The ‘bear-shirt’ and alcohol-combat experiments have shown that the ‘bear-shirt’ interpretation of *berserkir* holds credence as bear pelts have proven effective pieces of armour, and the theory that *berserkir* may have fought under the influence of alcohol is highly unlikely. Though effective, these experiments are limited in scope in their ability to discern either point acutely.

According to two of the most prominent examples of *berserkir* in saga literature, *Haralds saga ins Hárfagra* and *Egils saga*, *berserkir* possess inconsistent social functions, where they may be protagonist and/or antagonist. Though there appears to be a connection between *berserkir* and Óðinn, it is likely that medieval Scandinavians understood *berserkir* as shapeshifters in connection with Óðinn rather than inherently cult-practitioners. It is also difficult to define the social or belief context of *úlfheðnar* due to a comparatively small corpus of evidence with *berserkir*, though based on what evidence is possessed, they appear to have very similar functions.

This dissertation has concluded that many of the previous scholarly theories have lacked stringency through the testing of theories for probability, and have a complete absence of practical experiments that can support theories and arguments. The historical image of *berserkir* appears to be far less engrossed in the fantastical imagery often given them with Óðinn-ic cult practice and the usage of substances to reach a mystical mental state, but rather, they appear to be a warrior-figure type that is far more likely to be a product of mental disposition along with influences from martial culture; mental disposition which, in future, will be explored to find potential psychological processes and/or disorders as well as medical conditions that may explain the mental state of *berserkir* and similar concepts in other cultures.

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