

Transforming Gold in the Baltic Sea Region—From Raw Material to Cultural Heritage*

The so-called Hiddensee Hoard, a gold treasure of exceptional quality attributed to tenth-century Denmark, testifies to the great artistry of Viking-age goldsmith work (Fig. 1). The hoard, which was found on the northern German island of Hiddensee in the late nineteenth century, has a total weight of ca. 600 g. It consists of sixteen pieces of jewellery, including a neck ring (Ø ca. 13,5 cm), a disk brooch (Ø ca. 8 cm), six large and four smaller cross-shaped pendants (H ca. 6/5 cm) and four small rectangular pendants (H ca. 2 cm).¹



Figure 1: Hiddensee Hoard, 10th c., Stralsund Museum (LAKD M-V, Landesarchäologie, photo: Sabine Suhr)

* This contribution draws on research conducted for our digital exhibition Viking Gold. Treasure politics since 1800 (www.vikinggold.org), which was launched in November 2024. The exhibition was developed within the framework of a research project in cooperation with the Stralsund Museum (2021–2025), in which outreach—both in schools (cf. Dolezalek/Fries 2023) and within the museum setting—constituted a central objective. The second part of the article is informed by our investigation into modes of communicating art historical research to wider publics. It takes the form of a ›Choose Your Own Adventure‹ narrative.

1 The Hiddensee Hoard was found on the northern-German island of Hiddensee between 1872 and 1874. It is preserved in the Stralsund Museum. See Armbruster, Barbara/Eilbracht, Heidemarie (eds.): Wikingergold auf Hiddensee, Rostock 2010.

The pendants and brooch are ornamented with intricate gold-filigree and granulation, using a complex technique by which small granules of gold are fused with the underlying metal support.² Whoever produced this delicate work must have been an expert well acquainted with the properties of gold. And yet, gold was not mined in the Baltic Sea region—nor indeed was silver.³ Gold- and silversmiths of the Viking Age (ca. 800–1100) thus relied on the transfer to the Baltic Sea region of precious metals that originated from elsewhere.

According to evidence provided by the elemental and isotope analysis of coins and other silver artefacts from archaeological finds, silver was most probably obtained from two major sources: Western Europe—mainly Britain and the Carolingian Empire—and coins from the Abbasid caliphate.⁴ Gold, on the other hand, could have originated from a variety of different mines in Europe and beyond.⁵ Gold mining in Europe was known already in Neolithic times and it reached a first peak during the Roman Empire, with most production sites being located on the Iberian peninsula.⁶ Further sources for gold were located in and around the Alps and in the German regions of Harz and Erzgebirge, for example (Fig. 2).⁷ It is unlikely that gold was transferred to the North in an unprocessed, raw form and refined there. Rather, high quality

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- 2 Eilbracht, Heidemarie: Filigran- und Granulationskunst im wikingischen Norden: Untersuchungen zum Transfer frühmittelalterlicher Gold- und Silberschmiedetechniken zwischen dem Kontinent und Nordeuropa (Zeitschrift für Archäologie des Mittelalters 11), Köln 1999.
 - 3 Eilbracht, Heidemarie: Edelmetallschmuck der Wikingerzeit—Analysen und Interpretationen, in: Armbruster, Barbara/Eilbracht, Heidemarie et al. (eds.): Verborgenes Wissen: Innovation und Transformation feinschmiedetechnischer Entwicklungen im diachronen Vergleich, Berlin 2016, pp. 241–262: p. 255; Merkel, Stephen W.: Provenancing Viking silver: Methodological and theoretical considerations and a case study, in: Kershaw, Jane/Williams, Gareth: Silver, butter, cloth: Monetary and social currencies in the Viking age, Oxford 2019, pp. 206–226.
 - 4 Kershaw, Jane/Merkel, Stephen W.: Silver recycling in the Viking Age: Theoretical and analytical approaches, in: Archaeometry 64, (2022), No. 1, pp. 116–133: p. 120.
 - 5 On gold from Western Africa see for example the catalogue of the groundbreaking exhibition *Caravans of Gold, Fragments in Time: Art, Culture, and Exchange across Medieval Saharan Africa*, Berzock, Kathleen Bickford: Caravans of gold, fragments in time: Art, culture, and exchange across medieval Saharan Africa, Evanston 2019.
 - 6 Lehrberger, Gerhard: The gold deposits of Europe: An overview of the possible metal sources for prehistoric gold objects, in: Morteani, Giulio/Northover, Jeremy P. (eds.), Prehistoric Gold in Europe. Mines, Metallurgy and Manufacture, Dordrecht 1995, pp. 115–144: p. 115.
 - 7 Lehrberger: The gold deposits of Europe, p. 116f.

Scandinavian jewellery would have been made from imported gold objects that were melted down and reused.⁸



Figure 2: Gold in Europe (from: Lehrberger: The gold deposits of Europe, p. 117)

8 Eilbracht: *Edelmetallschmuck der Wikingerzeit*, p. 255; Wicker, Nancy: *Mapping Gold in Motion: Women and Jewelry from Early Medieval Scandinavia*, in: Chapman Hamilton, Tracy/Proctor-Tiffany, Mariah (eds.): *Moving Women Moving Objects (400–1500)*, Leiden 2019, pp. 13–32: p. 19.

Many thousands of kilograms of silver made their way to the Baltic Sea region via trade routes. Finds of an estimated 400,000 silver coins of Near-Eastern provenance,⁹ sometimes broken up into smaller parts as hacksilver, suggest that imported silver was weighed and then used for everyday business transactions.¹⁰ The metal was traded in exchange for desirable commodities such as furs, but presumably also for slaves.¹¹ Unlike silver, imported gold does not appear to have played a role in trade. Gold finds are much rarer than those of silver and they are usually recovered from pure gold deposits, containing undamaged objects.¹² Hackgold, which would hint at a use of gold in trading operations, is uncommon. Rare examples include a hoard discovered in Østre Mose (Western Denmark) and another one in Lackalänga (Sweden).¹³

Analyses carried out on the occasion of Barbara Armbruster and Heidemarie Eilbracht's publication of the Hiddensee Hoard of 2010, have shown that the sixteen items of jewellery have a uniform chemical composition. The alloy is almost entirely gold-based with only minute additional traces of copper, silver and tin.¹⁴ This similarity across the different items suggests that they were most probably conceived as a group and perhaps even made by the same goldsmith.¹⁵ Regrettably, we can no longer identify the source (or indeed sources) used to obtain this very purified gold. Individual gold objects may occasionally have come to the Baltic Sea region as gifts. A ninth-century source, for example, reports that the Andalusian diplomat Al-Ghazāl brought coffers with gifts of clothing and containers to a Viking ruler in 845.¹⁶ Others may have brought along precious metals. However, a large proportion of the gold that was processed in Scandinavia seems to have been acquired through tribute payments and raids: Frankish chronicles note that the Viking leader Ragnar received a ransom of 7000 Frankish pounds of gold and silver after the attack on Paris in 845. Moreover, in 991, an agreement with King Aethelred, following his defeat in the Battle of Maldon, stipulated the payment

9 Gruszczynski, Jacek: *Viking Silver, Hoards and Containers: The Archaeological and Historical Context of Viking-Age Silver Coin Deposits in the Baltic c. 800–1050*, London 2019, p. 1.

10 Gruszczynski: *Viking Silver, Hoards and Containers*.

11 *ibid.*, p. 13.

12 Hårdh, Birgitta: *Silver in the Viking Age. A regional-economic study* (*Acta Archaeologica Lundensia* 28), Stockholm 1996, pp. 160f.

13 Hårdh: *Silver in the Viking Age*.

14 Armbruster/Eilbracht: *Wikingergold auf Hiddensee*, p. 139.

15 *ibid.*, pp. 143f.

16 Allen, William E. D.: *The Poet and the Spae-Wife: An Attempt to reconstruct Al-Ghazal's Embassy to the Vikings*, Dublin 1960, p. 21; Gruszczynski: *Viking Silver, Hoards and Containers*, p. 14.

of 22,000 pounds of silver and gold to the victorious Scandinavians.¹⁷ Gold was thus associated with political power and served a different social purpose to silver. While large amounts of silver were in circulation as currency, gold was reserved for the highest social classes.

Old Norse texts include passages in which Viking-age Scandinavian rulers are said to have distributed golden arm rings as gifts to secure the loyalty of their minions and to consolidate political ties. Owning and displaying gold jewellery could thus have been understood as a sign of allegiance to a specific social group.¹⁸ Beyond the material, style may also have played a role in the early medieval transmission of social meaning through jewellery. Archaeological evidence suggests that women held a special place in these politics of ornament, for example through diplomatic marriages. An example is provided by the disc brooches of the Hiddensee-style, which were worn exclusively by women and can be associated with the Danish realm.¹⁹ Their dissemination is attested in the Baltic Sea region by finds from female burials extending into modern Poland and Russia.²⁰

It is possible, that pieces of jewellery with identifiable regional styles, such as these, may have functioned as markers of identity and of belonging to a social group (Fig. 3). While certainly not many of these objects were made of gold, those who were must have functioned as recognisable symbols of the Scandinavian ruling elite—perhaps not only for their use of the precious material, but also for their style.

In the context of its production and use in the Baltic Sea region, the Hiddensee Hoard thus materially conserves, or even ›embodies‹ the transformation from one or several no more identifiable imported golden artefacts to a group of objects of Scandinavian manufacture, whose material and appearance was associated with the ruling elite. Another transformation—an imma-

17 Gruszczynski: Viking Silver, Hoards and Containers, p. 11.

18 Andrén, Anders: Guld och makt—en tolkning av de skandinaviska guldrakteaternas funktion, in: Fabech, Charlotte/Ringtved, Jytte, Samfundsorganisation og regional variation. Norden i romersk jernalder og folkevandringstid, Århus 1991, pp. 245–256; Wendt, Antje: Viking Age Gold Rings and the Question of »Gefolgschaft«, in: Lund Archaeological Review 13/14 (2008), pp. 75–89; Wendt, Antje: Wikingerzeitliche Goldringe. Eine Fundgruppe ohne Kontext?, in: Gammeltoft, Peder/Hilberg, Volker (eds.): Beretning fra niogtyvende tværfaglige vikingesymposium, Højbjerg 2012, pp. 50–68; Bertram, Marion/Eilbracht, Heidemarie: Der Goldarmring von Hiddensee, in: Acta Praehistorica et Archaeologica 46 (2014), pp. 171–184; p. 179.

19 Armbruster, Barbara: Haithabu und der Hiddenseestil, in: Armbruster, Barbara/Eilbracht, Heidemarie (eds): Wikingergold auf Hiddensee, Rostock 2010, pp. 149–170.

20 *ibid.*



Figure 3: Moulds for jewellery in the ›Hiddensee style‹ found at Haithabu (Source: Wikinger Museum Haithabu Stiftung Schleswig-Holsteinische Landesmuseen)

terial transformation—then occasioned these pieces of high-class jewellery to be laid down as hoards.

Medieval hoarding behaviour is typically explained with reference to political, economic or symbolic reasons.²¹ In times of war or impending conflict, it would have been vital to secure valuables by hiding them in the ground. Sustained periods of economic prosperity, on the other hand, may have encouraged people to hoard their savings. But there is also a possible spiritual dimension to the deposit of hoards, which may well have been intended as offerings. Unlike most silver finds, many gold hoards were recovered from swamps, or found in or near water. They were probably not meant to be retrieved.²² Although the exact circumstances of its recovery remain unknown, this was probably also the case of the Hiddensee Hoard. According to its finders—inhabitants of the island of Hiddensee—the jewellery had been washed on to the beach after the great flood of 1872.²³ However, the occurrence of peat-like particles, which were noted on some of the items after they had been acquired by the Stralsund Museum in 1873 and 1874, rather point to the fact that they could have been deposited or immersed in formerly inaccessible marshland.²⁴ And yet, occasionally one of these medieval hoards resurfaces...

The following story about the transformations—both material and immaterial—that may occur when a gold hoard is found, is an experiment in counterfactual history. It was first published in a more interactive form in the digital exhibition *Viking Gold. Treasure politics since 1800* (www.vikinggold.org), which we launched in November 2024. The narrative scenario is fictitious and does not aim for total coherence. Rather, we chose to meander between different times and locations, in order to touch upon factors such as legislation or shifts of political allegiance that led to an increased awareness of the value of Viking-age gold finds as cultural heritage in the Baltic Sea region. While the storylines are invented, the options presented on the path of the transformation of gold from material asset to cultural heritage are based on historical sources.²⁵ These can be consulted with reference to the notes.

21 Hårdh: *Silver in the Viking Age*, pp. 146–153; Gruszczynski: *Viking Silver, Hoards and Containers*, p. 18.

22 Hårdh: *Silver in the Viking Age*, p. 134.

23 Armbruster/Eilbracht: *Wikingergold auf Hiddensee*, p. 56.

24 *ibid.*, p. 58.

25 The contents draw upon archival studies carried out for a dissertation by Charlotte Wenke: *Viking-age gold treasure finds as objects of identification in the Baltic Sea Region c. 1800–1989* (Diss., Technische Universität Berlin, 2026).

... Somewhere in the Baltic Sea region in the ninth century: A Scandinavian woman called Thyra buries her gold jewellery. When will her treasure be found?

1. Never – *go to end y*
2. 1755 – *continue reading there*
3. 1834 – *continue reading there*
4. Today – *continue reading there*

1755

Olof, a boy aged fifteen, is ploughing a field on his father's farm in southern Sweden when he finds a plaited golden armring. What should he do with it?

1. Keep it
2. Sell it
3. Hand it in

1. He keeps it for hard times because it looks valuable. He later reburies it so that it won't get lost.

– *go to end y*

2. He sells it to a local goldsmith²⁶ who has offered him a good price so that he can finally buy a draught horse. The goldsmith vaguely remembers that for a few years now, the pastor has regularly announced²⁷ that if you find an object made of gold or silver and hand it in to the royal authorities, you'll get 1/8 more than the price of the metal for it.²⁸ So, he shows it to the pastor. The pastor hands it in to the bailiff and claims the lawful finder's fee. What happens next?

– *continue reading at 3*

26 Cf. the discovery of the Hiddensee Hoard, which attracted official attention after a part of it had been sold to a local goldsmith. The goldsmith sold it to the district president, who then gave it to the director of the local museum in Stralsund. See Armbruster/Eilbracht: *Wikingergold auf Hiddensee*, p. 59.

27 A Swedish royal letter to their Finnish district officials from 1755 addresses the reporting of precious metal finds from the ground. It stipulates that pastors were to declare the current law from their pulpits once a year. See Johann G. Liljegren: *Transcription of »Till landshöfdingarna i Finland, angående Kungörelsens utfärdande om fynd*. Stockholm then 20. Aug. 1755, from: Johan Jusléen: *Samling af Kongl. Majts. Bref, hvilka på inkomna förfrågningar om Lagens rätta förstånd ... utfärdade blifvit*; 1761, p. 410f.«, Stockholm, ATA, Ämbetsarkivet 1, E1:2.

28 Chapter XLVIII: *Om fynd och hittegods, och huru thet bör lysas up*, § 2, in: *Sveriges Rikes Lag Gillad och antagen på Riksdagen Åhr 1734 (1736)*, p. 262, litteraturbanken.se/f%C3%B6rfattare/Anonym/titlar/SverigesRikesLag1734/sida/262/faksimil?storlek=1 (25.02.2025).

3. The jewellery makes its way into the royal collections, which contain costly and curious objects that reflect the vast kingdom. It remains there until the collections are converted into a public museum around 1850.²⁹ One part of the museum is devoted to the history of the Swedish nation.

– *go to end x*

29 Svanberg, Fredrik: *Museer och samlande* (The Museum of National Antiquities, Stockholm. Studies 12), Stockholm 2009, pp. 46f.

1834

Åsa, a Norwegian servant girl, is planting potatoes when she finds several beautifully decorated items of gold jewellery. She shows them to her employers, a farmer and his wife.

1. They sell them locally
2. They take them to the capital
3. They show them to the authorities

1. The pair decide to sell the treasure to the local goldsmith and share the proceeds with Åsa as a reward for her honesty.
 - a. The goldsmith melts the objects down and uses the gold to make modern jewellery.

– go to end v

- b. In the goldsmith's shop, the items are noticed by Krøyer the schoolmaster, who is keenly interested in the history of his country. He realises that the objects are ancient pendants and brooches. Now we don't know if Krøyer is a nationalist or a unionist. As a nationalist he would think that the objects should be placed in the antiquities collection³⁰ at the Norwegian university in order to illustrate the history of Norway. Let's assume that he is a unionist! As a unionist, Krøyer would think Norway should have remained part of Denmark. He gives the treasure to the state collections in Copenhagen.³¹ They tell the history of the Danish nation, to which Norway belonged until 1814. Much later, the Danish national museum decides to return selected finds, including Åsa's treasure, to Norway as a diplomatic gesture.³²

– go to ends w and x

30 On the early history of the collection of Norwegian Antiquities (Oldsaksamlingen) in Oslo see Mikkelsen, Egil: Før Historisk museum. Universitetsmuseenes eldste historie, in: Bergstøl, Jostein/Eek, Ann Christine/Perminow, Arne Aleksej (eds.): Kulturhistorier i sentrum. Historisk museum 100 år, Oslo 2004, pp. 36–59.

31 On the early history of the National Museum of Denmark see Jakobsen, Tove Benedicte in collab. with Holme, Jan and Adamsen, Christian: Birth of a World Museum (Acta Archaeologica 78/1), Oxford 2007.

32 Single objects transferred to Copenhagen during the Danish-Norwegian Union (1380–1814)

2. The landowner's brother knows a merchant named Coninck in the capital Christiania (Oslo) who deals in treasure trove and gives them a good price. Coninck realises that the items are ancient pendants and brooches. He sells them to the state collections in Copenhagen. They tell the history of the Danish nation, to which Norway belonged until 1814. Norway's requests for restitution during the 1920s³³ are unsuccessful. The objects are to remain in the Danish national museum in order to provide a comprehensive picture of Scandinavian prehistory.

– *go to end w*

3. The farmer's wife knows that there is a law dating back before 1814, when Norway was part of Denmark, which declares that abandoned gold and silver belongs to the state.³⁴ They give the treasure to the bailiff, who pays them its material value from the public purse. He passes it on and the state gives the treasure to the antiquities collection in Christiania (Oslo).³⁵ There it is put on display as national cultural property.

– *go to end x*

have returned to Norway, for example the St. Olav's altar frontal, which was given to Nidaros cathedral in Trondheim upon the nine-hundredth anniversary of Olav's death in 1930. See Lidén, Anne: *Olav den helige i medeltida bildkonst. Legendmotiv och attribut*, (Diss., Stockholm University, 1999), Stockholm 1999, p. 31.

- 33 An overview of Norwegian restitution claims towards Danish museums is given by the board of the Norwegian Association of Museums in a proposition to the Norwegian State Department for Church and Education. See Styret i Norske Museers Landsforbund: *Innstilling til Kirkedepartementet om utlevering fra Danmark av norske museumssaker*, Oslo, 20.05.1927, Kulturhistorisk Museum Oslo, Arkiv, fag 13, hylle 7, boks 33: Dansk-norske arkiv- og museumssaken. The proposition includes a long list of objects to be given back to Norway, containing also archaeological finds of gold and silver. Its success would have to be followed up by further research. We are not aware of any studies of Norwegian restitution claims.

- 34 Grieg, Sigurd: *Da staten innløste Hon-skatten i 1834*, in: *Viking. Tidsskrift for norrøn arkeologi* 32, 1968, pp. 112–114.

- 35 The 1834 story was inspired by the discovery and acquisition of the Hoen Hoard kept at the Museum for Cultural History in Oslo. See Mikkelsen, Egil: *The find in its context*, in: *Fuglesang, Signe Horn/Wilson, David M. (eds.): The Hoen hoard. A Viking gold treasure of the ninth century (Acta ad archaeologiam et artium historiam pertinentia XIV)*, Oslo 2006, pp. 29–54: pp. 34f.

Today

Somewhere in the Baltic Sea region, present day: I'm walking across a freshly ploughed field when I spot a gleaming object in the loose soil. It's obvious that the object is very old.

What should I do with it?

1. Keep it
2. Hand it in

1. I keep it for myself and I only show it to special people. What happens next?

a. I keep it in a drawer in my home—indefinitely.³⁶ [This is a bad idea!]

– *go to end v*

b. I sell it online. [Seriously? This is a bad idea!] What happens next? The jewellery could be bought by a wealthy private collector. They would probably lock it in a safe and it would be lost to everyone else.

– *go to end v*

c. I sell it online. An expert might chance upon the online listing and buy the item. Without proper documentation (I just picked it up on a field...), the context of the find remains unclear and the object's past significance cannot be determined. However, the expert hands in the object to the heritage protection authorities.

– *continue reading at 2*

2. I show it to the local museum, who forwards my treasure to the authorities. The archaeologists in charge are excited and I show them where I found

36 The fact that this happens from time to time is exemplified by the story of the largest single Viking Age gold find on the island of Gotland, an arm ring from around the year 1000. Its finder had kept it secretly in his house for 30 years and only revealed its existence on his deathbed, leading his heirs to give it to the local museum. See Östergren, Majvor: En vikingatida guldarmring från Tore i Sunde socken, in: Gotländskt Arkiv, Visby 1997, pp. 243f.

it so that they can study the site. Based on the law and their previous experience, the authorities decide whether an object qualifies as protected cultural heritage. In the assessment, both the materials and the age of objects play a role as well as the opinion of specialised conservators. What do laws say about finds of treasure in the Baltic Sea region?

In Denmark, gold and silver objects found in the earth are always objects of cultural and historical value. They belong to the state.³⁷

In Norway, only archaeological finds dating from before 1537 automatically belong to the state. But other finds can also be categorised as culturally valuable.³⁸

In Germany, each of the 16 states has its own law on the protection of monuments. In Mecklenburg-Western Pomerania, private archaeological finds belong to the state if they are of outstanding scientific value.³⁹

– *go to end z*

37 Museumsloven § 30. Danefæ og danekræ, www.retsinformation.dk/eli/lta/2014/358#P30 (25.02.2025).

38 Lov om kulturminner, Kap. III Løse kulturminner, § 12 Eiendomsretten til løse kulturminner, www.retsinformation.dk/eli/lta/2014/358#P30 (25.02.2025).

39 Denkmalschutzgesetz (DSchG M-V). In der Fassung der Bekanntmachung vom 6. Januar 1998, § 13 Schatzregal, <http://www.landesrecht-mv.de/bsmv/document/jlr-DSchGMVp13> (25.02.2025).

Ends

- v. The early-medieval treasure is lost.
- w. It is exhibited in its own display case as a significant example of Scandinavia's regional heritage.
- x. It is exhibited in its own display case as a significant example of the country's national heritage.
- y. Safe underground, Thyra's treasure survives through the centuries.
- z. What objects do you think should be preserved as cultural heritage for the future?

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