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A craft perspective on flint dagger skeuomorphism in Late Neolithic to Early Bronze Age southern Scandinavia

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1. Introduction

During the Late Neolithic period in southern Scandinavia, intricate 'fishtail' flint daggers, which archaeologists commonly interpret as imitations of similar metal daggers, were produced. This supposed imitation is recognised as skeuomorphism. In archaeology, the term is mainly used in connection with materials imitating one another, in which a prehistoric craftsperson would attempt to increase an object's value. This however, presents the modern-day perspective of material 'hierarchy', while the imitative nature of the flint daggers goes beyond a value-based hierarchy. While present-day archaeologists often interpret such examples of skeuomorphism as an attempt to replicate value, the complexity of the craftspeople's intentions is often overlooked. The relationship between the imitating and imitated crafts reveals a much more multifaceted perspective on skeuomorphism. By analysing the craft aspect of flint- and metalworking during this time in southern Scandinavia, I argue that the relationship between the crafts is more of a complex dialogue between materials and craftsmanship influencing each other.

1.1 Archaeological background

In the Late Neolithic period of modern-day Denmark, exemplary cases of highly advanced flint craftmanship were produced (see Lomborg, 1973). Some of these are the famous flint daggers found all over southern Scandinavia and beyond (Apel, 2001, pp. 304–305; Frieman, 2021, p. 128). These sophisticated daggers are commonly interpreted as imitations of bronze-hilted daggers due to their shape (Apel, 2001, p. 250). The bronze-hilted daggers were imported examples of the Únětician triangular type daggers originating in Central Europe, which at first glance have obvious morphological similarities with some of the Scandinavian flint daggers (Apel, 2001, p. 250; Vandkilde, 1996, pp. 14–15). The Scandinavian flint daggers, however, were being created long before the Classic Únětice period, that saw the metal dagger imports (Vandkilde, 1996, p. 15), which questions the original intent behind the creation of the flint daggers as being skeuomorphic examples imitating the value of another object. Furthermore, in Early Bronze Age southern Scandinavia, the morphology changed, and completely different types of flint 'imitation' of bronze are observed (Sørensen, 2012, pp. 53–55), which further adds to the complexity of the flint-metal craft relationship. Additionally, some reciprocal imitations have been observed in which the metal supposedly imitated flint (Frieman, 2010, pp. 38–39). This questions the whole notion of a material hierarchy, suggesting that the value

of one material is greater than the other, and poses the question whether a skeuomorphic interpretation is sufficient in describing the relationship and interaction between the two crafts.

1.2 Research questions

The aim with this thesis is to investigate the craft relationship between flint- and metalworking in Late Neolithic to Early Bronze Age southern Scandinavia, questioning the flint daggers as skeuomorphic imitations of Central European bronze-hilted daggers. The common use of this term to describe the flint daggers is too simplistic an interpretation, as it assumes a material hierarchy. The cross-craft perspective seems left out of analyses and most interpretations. This leads me to my goal with my thesis, which is to apply a craft perspective on a re-interpretation of the craft relationship between flint and metal during this period in southern Scandinavia. As background knowledge, I need a general understanding of the craft-circumstances of flint and metal at the time of the production of the flint daggers, as well as a thorough grasp of concepts such as skeuomorphism, craft theory, and cross-craft interactions.

Main question:

- Based on the flint daggers from Late Neolithic to Early Bronze Age southern Scandinavia, what is the relationship between metal and flint, seen from a craft perspective?

Sub-questions:

- How can the term skeuomorphism be questioned in connection to the flint daggers of southern Scandinavia?
- The flint daggers are often called skeuomorphs, imitating metal daggers of the time, but what evidence is there for metal imitating flint?
- What modern examples exist of similar interactions between crafts?

1.3 Research design

To introduce the topic of the southern Scandinavian flint daggers, I will firstly present in chapter 2, the archaeological background of the daggers themselves in the context of the Late Neolithic and Early Bronze Age in the region. Furthermore, I will go in-depth into the technical

craft aspect of creating the flint daggers as well as present interpretations of their symbolism to prehistoric southern Scandinavian societies.

In chapter 3 I will establish a theoretical framework in which I will describe the necessary theoretical concepts in order to analyse my dataset. These include skeuomorphism, craft theory, and cross-craft interactions. This framework will be crucial to the later chapters on analysis and discussion.

Based on the theoretical framework, I will in chapter 4 present my selected dataset consisting of various examples of flint daggers from southern Scandinavia. It will also include unique cases of bidirectional imitation of both flint and metal. This dataset will be analysed in the following chapter.

Chapter 5 will include a thorough analysis of the established dataset in relation to the theoretical framework. Using the presented craft-focused theoretical ideas, the interpretation of the intention behind the creation of the skeuomorphic examples will be re-evaluated based on the concepts within cross-craft theory.

Lastly, chapter 6 will discuss the results of the analysis in relation to skeuomorphism and cross-craft ideas. Additionally, the role of the prehistoric craftsperson will be discussed, as this is crucial to the understanding of the intention behind crafting an object. For a more modern perspective on these concepts, several present-day examples will be presented as parallel comparisons to the creation of the skeuomorphic flint daggers.

2. Background

To understand the relationship between the flint and metal crafts, it is important to have a base knowledge of the relevant archaeological background. I will dive into the tradition of flint dagger crafting, presenting its origin, timeline, defined typology, and symbolism. Additionally, I will go further into depth with the crafting process of a flint dagger, to give a perspective of the craftspeople themselves. The social significance of these crafts will also be investigated, to understand the symbolism and supposed social value of the different materials. This background is crucial to properly interpret the imitative nature of the flint daggers in relation to skeuomorphism and cross-craft interactions.

2.1 The flint daggers

When talking about the flint daggers of Late Neolithic Denmark, it is important to keep in mind that a dagger is a much later construct, from which archaeologists recognise those from the Neolithic. According to the Merriam-Webster dictionary, a dagger is a 'a sharp pointed knife for stabbing' (Merriam-Webster, n.d., Definition 1). This evidently fits nicely with the morphology of the Late Neolithic flint dagger, but it is only a dagger since it fits with our modern norms of what a dagger should be. Therefore, it is important to bear in mind, when working with the flint daggers, to not see them as definite constructs of our modern image of a tool made for killing, but that it only resembles that category. This way, it is possible to regard the flint daggers beyond their weapon label, and further understand the social and craft aspects of their nature, as it is essential to keep in mind that archaeologists are putting modern labels on Neolithic objects.

The Late Neolithic period in southern Scandinavia is typically divided into two separate periods: LN I (2350-1950 cal BCE) and LN II (1950-1700 cal BCE) (Apel, 2001, p. 10; Vandkilde, 1996, p. 140). However, a typology of the Scandinavian flint daggers have been made by Sophus Müller (1888, pp. 18–22) and John-Elof Forssander (1937, pp. 121–128), which Ebbe Lomborg (1973) placed into a division of the Late Neolithic as LN A, LN B, and LN C (p. 69). I will work with Helle Vandkilde's (1996) division (LN I and LN II) which combines Lomborg's LN A and LN B into LN I (p. 13).

Lomborg (1973) separated the flint daggers into six groups, categorising types I-III as characterising Vandkilde's LN I, types IV-V as belonging to LN II, and finally type VI being ascribed to Period I of the Early Bronze Age in southern Scandinavia (Lomborg, 1973, p. 69;

Vandkilde, 1996, p. 13). The types I-III all share a lanceolate shape, but gradually the handle is observed to become more prominent (Lomborg, 1973, pp. 11, 207). It is during LN II that daggers of type IV and V start to show similar forms to those of the Únětician metal-hilted daggers, as the handle starts exhibiting its pronounced fishtail shape as well as a triangular blade, widest near the handle (Lomborg, 1973, pp. 11, 207). Type VI daggers characterise Period I of the Early Bronze Age and display a larger variety of shapes, and extreme cases were seemingly meant to imitate bronze equivalents. Two examples of this are the Favrskov flint scimitar (Fig. 17) and the Åtte flint composite sword (Fig. 18), both found in Denmark (Sørensen, 2012, pp. 53–55).

The later types of LN II represent a clear shift in the making of the daggers towards possible imitation, with external influence and an aesthetic and possibly a functional shift in the Early Bronze Age.

Creating these flint daggers, especially types IV-VI, could not have been possible without the high-quality Senonian flint found throughout Denmark such as the Limfjord area and southeastern islands such as Møn and Sjælland (Apel, 2001, p. 31). Of course, other types of flint, such as Danian flint, were also used, but the Senonian flint made it possible to create intricately detailed daggers which largely represent the greatest majority of the southern Scandinavian flint daggers (Apel, 2001, pp. 31–32).

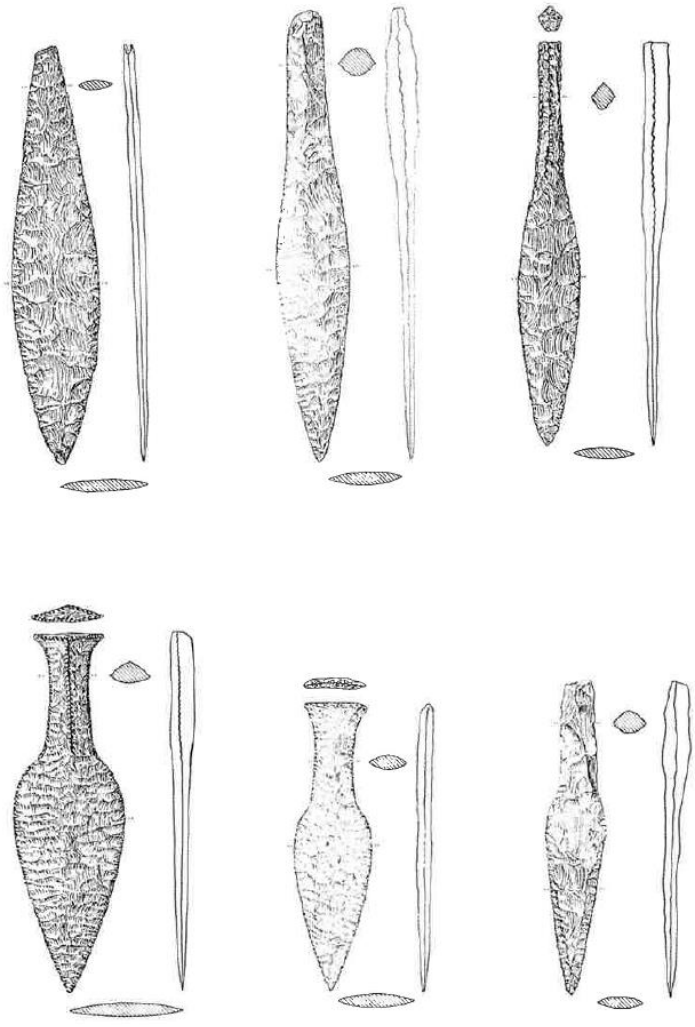

Fig. 1. The six types of flint daggers from southern Scandinavia (assembled by Apel (2001, p. 234) from various pictures from Lomborg (1973)).

2.2 The introduction of metal

Some of the earliest metalwork examples in southern Scandinavia were found in the Gallemose and Pile hoards. Some of these examples include Únětician metal-hilted halberds and triangular bladed daggers, Anglo-Irish bronze flat axes, and local 'Pile type' low-flanged axes (Vandkilde, 1996, p. 14). Throughout the Late Neolithic period in southern Scandinavia, most of the early western imports of metalwork came primarily from Ireland such as axes and halberds (Butler, 1963, pp. 12, 206). Additionally, with Irish influence, southern Scandinavian locally-made gold lunulae also represent the introduction of different foreign metals (Vandkilde, 1996, p. 14).

2.3 Creating the flint daggers

The crafting of a flint dagger is a meticulous process of skilled craftsmanship and theoretical and practical knowledge. To gain an overview of the craft process of a bifacial flint dagger, it is first necessary to understand the process of creating a general bifacial product. Apel (2001) used Callahan's (1979) general 7-stage bifacial production process as a baseline for the southern Scandinavian flint daggers (Apel, 2001, p. 35; Callahan, 1979, pp. 9–13).

Stage 1: Blank	Collect any blank, unmodified raw material suitable for the intended final product.
Stage 2: Rough out	Focusing on the outer zone of the raw material, create a roughly centred, bi-convex edge.
Stage 3: Primary preform	Focusing on the middle zone, form a proportioned handaxe-like outline.
Stage 4: Secondary preform	Once again focusing on the middle zone, create an outline with cross-sections which are both flat and lenticular, reducing the thickness.
Stage 5: Final preform	Focusing on the middle *and* outer zones, create an outline, which is somewhat parallel-sided. Width-thickness ratios should be equivalent to the final product.
Stage 6: Flaked implement	On the outer zone, make sure the edges are fairly straight without retouch, implementing a specific flake-removal sequence to form a symmetrical shape.
Stage 7: Retouched implement	Focusing solely on the outer zone, create the finished product with retouch and possibly hafting elements.

Table 1. Overview of the seven stages of general bifacial production inspired and to some extent paraphrased from Apel (2001, p. 35), which was originally compiled from Callahan (1979, pp. 9–13).

In his experimental dagger-crafting course and subsequent assessment, Apel (2001) noted that stage 1 essentially required mainly a theoretical base of knowledge to determine a suitable piece of raw material, although stage 2 in fact does not seem to require much skill, and can be done fairly simply with hard, direct techniques. The third stage seemed to involve more soft, direct percussion techniques, for example with an antler billet, to create the lenticular cross-section. What he discovered soon after was that the transition from the third to the fourth stage was the first plateau of skill which he encountered (p. 36).

To explain the seemingly difficult transition, Apel (2001) compares stages 3 and 4 with the shift from the first bifacial handaxes to those of the Acheulean type. He also emphasised the fact that he solely had the complete theoretical knowledge required to create the dagger though not the craft-based know-how. This, he argued, would be entirely different in a 'living technological tradition' in which one would learn by observation and practice (pp. 36–37). However, with practice over two weeks and a successful execution of stage four on a small obsidian dagger, Apel (2001) notices: 'When these acts were established in my body, they did not even appear to be difficult any more' (p. 39). This is a highly accurate observation from a craftsperson's perspective, as, with repetitive practice, a new craft and/or technique will start to feel familiar and slowly becomes a natural body movement. It resembles how someone can ride a bike without thinking about it, even though it might have been difficult to learn as a new skill.

2.4 Social significance

Throughout southern Scandinavia, flint daggers have been found in contexts of burials, hoards, and single finds, and in very large numbers. Approximately 13,000 flint daggers are thought to have been produced and distributed around northwestern Europe (van Gijn, 2015, p. 76). According to Vandkilde (1996), the flint dagger was perceived as an object of prestige for males, with whom they follow to their graves. The reason for the significant amount of flint dagger finds especially comes from the abundance of the raw material, which often was made into daggers (p. 267).

However, Eva Stensköld (2004) argues that the idea of the flint dagger being personal property should be questioned, as ritualistic deposition indicates that they would have been owned by e.g., shamans, or other ritual authorities. This is due to the large number of flint daggers found as single finds, which could have been deposited in this way after ritual use. Stensköld also suggests that reworked flint daggers could be the result of a ritual purification

or renewal before it would be reused. This would function as resetting the symbolic meaning of the dagger after it had already been used. One of these ritual usages could be initiative or transitional rituals such as scarification, circumcision, or similar cutting of the body to symbolise a transition (pp. 225–240).

While flint was an abundant resource in southern Scandinavia, bronze/copper certainly was not. During the Late Neolithic, most metal objects were of foreign origin, with the possible exception of a dagger from Emb Mose. The metal was mostly deposited in hoards and as single depositions, not in graves. According to Vandkilde (1996), there seemed to be a principle preventing metal objects from being placed in burials, and even later on when this was still rarely done. It was only in Period IB of the Early Bronze Age where metal began to appear more commonly in graves (p. 267).

3. Theoretical framework

To fully understand the complexity of the imitative nature of the southern Scandinavian flint daggers, it is necessary to be familiar with the key concepts of skeuomorphism and cross-crafting. This chapter will dive into the different definitions and types of skeuomorphism required to understand the nature of imitation in archaeology. Additionally, craft theory and cross-crafting will be defined and described in relation to crafts interacting with one another including terms such as multicraft and coproduction. This is a fundamental framework to reassess the assumptions of a material hierarchy based on value in relation to flint and metal in southern Scandinavia.

3.1 Skeuomorphism

First coined in 1889 by H. Colley March, the term *skeuomorphism* was originally defined as ornamentation derived from structure. March (1889) argued that as structures originally serving a functional purpose lost their function, the structure would instead remain as decorative ornamentation. This would serve the purpose of giving familiarity to the object (pp. 166–167; Frieman, 2010, p. 34). Since then, however, the term has been given various definitions differing it from March's original description.

3.1.1 Definitions

In their book *Artful crafts*, Michael Vickers and David Gill (1994) presented a new interpretation of the term, which revolved around a value-based material hierarchy. The meaning of skeuomorphism, according to Vickers and Gill (1994), is to give a higher intrinsic value to a low-value material. This idea of skeuomorphic imitation was backed up by a collection of Attic pottery, which seems to have been covered in a glaze supposedly meant to mimic metallic surfaces. This would evidently create a cheaper copy of a high-status object, as they would have imitated contemporary metal vessels (pp. 106–123).

However, in 2002, Carl Knappett suggested that skeuomorphism is grounded in the idea of subverting the material hierarchy already established. This would have had the purpose of gaining power over a more valued material. As an example, Knappett (2002) uses Minoan pottery presumed to be skeuomorphic imitations of metal objects. This would have worked as a way to control or influence the metal-using elite (pp. 109–111).

Relating more to March's original definition, David Wengrew (2001) shifts the perspective on skeuomorphism towards one, which is more focused on cross-craft relationships. He uses the example of Neolithic Samarran pottery in the Near East, which have weaving patterns seemingly imitating woven baskets (pp. 177–178). Wengrew (2001) suggests a new interpretation of skeuomorphic imitation focused on the crafts influencing each other technically, as with the pottery which was influenced by basket weaving, as evidence shows that the pots were moulded in weaved baskets (pp. 178–179).

3.1.2 Typology

While many have defined skeuomorphism in various ways, a clear typology in relation to archaeology has not been determined. For that reason, I have established four main types of skeuomorphism within archaeology.

1. *Morphological skeuomorphism* is the most visibly obvious type of skeuomorphism in which one object mimics (a) visual characteristic(s) of another. The type IV fishtail flint daggers of southern Scandinavia are excellent examples of morphological skeuomorphism as they seem to imitate the handle and blade shape of the Únětician metal-hilted daggers. However, these morphological changes to the flint daggers did not hinder their functionality as they still had practical use.

2. *Aesthetic skeuomorphism* is the type which includes instances of imitation solely for the sake of the visual appeal of another object. The Favrskov flint scimitar is an example of mimicking the aesthetics of the bronze scimitars from Rørby, without the intention of practical functionality (Sørensen, 2012, pp. 53–54). The lack of a practical use of an object is what makes aesthetic skeuomorphism deviate from morphological functionality.

3. *Technical skeuomorphism* involves objects produced with techniques from one craft to another. If a metal object made of bronze or copper has visual evidence of flint knapping techniques having been applied, such as percussive techniques, making the metal object resemble flint, then it would be characterised as technical imitation. For that reason, technical skeuomorphism is different from morphological and aesthetic skeuomorphism, as it essentially represents a specific cross-craft relationship.

4. *Symbolic skeuomorphism* varies greatly from the other three types, as it is not noticeably visible at first. In this case, it is the symbolic or social meaning of another object which is being imitated. It could be that an object regarded in a society as having high symbolic or social value is 'copied' in an entirely different craft, possibly by another society who would not necessarily have had access to that specific material. This puts skeuomorphism into a more socio-cultural context of symbolism and material/object value.

Many objects in the archaeological record will not fit solely into one singular type, but will often be described by multiple nuances of skeuomorphism. Therefore, it is important not to make assumptions about the intention behind the imitation of an object exclusively based on one skeuomorphic type. An object which could possibly be an example of symbolic skeuomorphism should not inherently be understood of being of lower value than that which it imitates. This has often been done within archaeology, but while a specific symbolic or social meaning might have been intended, it is necessary to consider other types of skeuomorphism and understand the craft(s) to truly determine whether the question of value can even be considered.

3.2 Craft theory

Craft theory, as described by Maikel Kuijpers in his book *An Archaeology of Skill*, is largely affected by skill, which Kuijpers defined by four different elements: '1) an engagement with material, 2) a fundamental dependence on the senses, 3) the involvement of the body as/and tool(s), 4) the drawing upon explicit *and* embodied knowledge' (Kuijpers, 2018, p. 37). This framework presented by Kuijpers describes craft as a dynamic process influenced by skill, which goes against the common idea of a craft as being a more fixed set of techniques.

1. Firstly, Kuijpers (2018) describes skill in relation to the material itself. Craftspeople learn from engaging with the material and understanding its properties as well as how it responds to being worked with. This suggests that skill is acquired by handling the

material and responding to how it reacts. This implies the need of understanding the qualities of the material itself to become a skilled craftsperson (pp. 36–58).

2. According to Kuijpers (2018), using one's senses is crucial to become a skilled craftsperson. All the senses, whether it be sight, touch, or sound, can define skill themselves. A truly skilled craftsperson knows what to do based on, for example, the colour of a heated metal, the smoothness of an edge, or the sound made from hammering a blade (pp. 36–58).

3. As a craftsperson, the tools you use become extensions of your body, but your body in itself also becomes a tool. As an example, Kuijpers (2018) mentions a weaver using many different parts of his body, such as his hands, feet, and teeth, to weave a basket. This use of the body as a tool and training it to become skilled, is inherently developing muscle memory in order to skilfully perform a craft (pp. 36–58).

4. As described by Kuijpers (2018), apperception is the ability to understand, for instance, changes in colour or shape in metalworking, and, without thinking too much about it, immediately be able to know what to do. This element of skill is one gained after significant experience with a craft, as your body is able to recognise what to do automatically only by hearing or seeing changes in a material (pp. 52–56). In a way, this could be regarded as the key aspect which describes a skilled craftsperson.

As Kuipers (2018) describes these elements, it becomes clear that skill is much more complex than simply and explicitly learning a craft. What makes a craftsperson skilled is rather the implicit aspects of working with a material and crafting an object (pp. 52–55). This becomes even more complex when different crafts start to interact and influence one another.

3.2.1 Cross-craft

In 1989, Patrick McGovern defined cross-craft interactions as taking three different forms: 1) borrowing of styles and/or techniques, 2) adaptation to new contexts, or 3) imposition of external styles and techniques (McGovern, 1989, p. 1).

1. When two different societies or cultures interact with one another through, for example, trade or simply geographical proximity, different crafts start to interact as well. When a technique or style from one craft is used in another, without fundamentally changing the technique/style, it is seen as the craft borrowing from another (McGovern, 1989, pp. 1–8).

2. When the borrowed technique cannot be used the same way with a different craft/material, then the technique will have to be adapted, which involves innovating. This can often be due to, for example, a difference in the material properties of the other craft which is borrowing the technique (McGovern, 1989, pp. 1–8).

3. Techniques or styles can also be imposed onto a culture/craft by, for example, a colonial power. This often results in hybrid forms of different styles with traces from both the original and imposed culture (McGovern, 1989, pp. 1–8).

Recently, Hallie Meredith and Elizabeth Murphy built further on McGovern's classification to include skeuomorphism, among others. Meredith and Murphy (2024) attempt to show that cross-craft interaction is part of a complex network of exchange and influence. They use the example of Late Antiquity, where, for example, metalworkers would assist sculptors in the making of statues (pp. 138–139). This emphasises the fact that crafts were far from fixed in terms of material but rather a dynamic dialogue between crafts interacting and influencing each other.

In his book, *Craft Production in Complex Societies*, Izumi Shimada (2007) describes *multicraft*, which he defined as craftspeople being able to work with or are simply engaged in more than one craft. This was most likely due to factors like close proximity of different crafts or familial relations, and would probably have been in a seasonal context in which the craftsperson's work depended on the season (pp. 4–5). Multicrafting would question the boundaries between crafts, instead making it more fluid, challenging the notion that ancient craftspeople were specialised in a single craft only.

Relating to multicraft, Shimada (2007) also defines the term *coproduction*, which describes the process in which multiple craftspeople work together to produce an object using different crafts. This could often be done in shared workshops or simply being in close proximity, where each craftsperson uses their own expertise to contribute to the creation of the object. This could

either have happened simultaneously or in sequence (p. 4). This would further complexify the idea of crafts interacting with one another, showing that there was an advanced interactive network between crafts.

In conclusion, skilled craftspeople and the crafts themselves are far more complex than assuming craftspeople to be isolated specialists in a single craft only. The inherent skill and interaction between crafts create a much more nuanced image of craftmanship which questions the idea of simple value-related imitation of the fishtail flint daggers from southern Scandinavia. It is quite clear that the relationship between the flint knapper and the metalworker is far more complex when focusing on the crafts themselves and how they may have interacted with one another.

4. Data

The dataset needed to support the argument of this thesis should include various different flint daggers of varying types. This is needed to demonstrate the long tradition of dagger making in southern Scandinavia, including early types to convey that the daggers were being produced before the introduction of metal to the region. Some should also be examples of possible imitation, like those of type IV, V, and VI, the latter including instances of uniquely unmistakable imitations of metal objects. Additionally, to disprove a material hierarchy based on value, reciprocal examples of imitation are also necessary to show a more nuanced idea of the material relationship between flint and metal.

4.1 Flint daggers

To represent the variety of flint daggers produced during the southern Scandinavian Late Neolithic and Early Bronze Age, several examples of each type of flint dagger (I-VI) have been selected. Each type has multiple sub-types. However, I will not include them all, as it is not necessary to create a basis for the later analysis and discussion. Therefore, I have only included those which would represent the morphological variety of each type.

4.1.1 Type I

Fig. 2. The type I flint dagger from Ødis-Brandrup, Denmark (Nationalmuseet, object number: A7666, https://samlinger.natmus.dk/do/object/210446).

Around Ødis-Brandrup in Jutland, Denmark, a typical type I flint dagger was found with a characteristic lanceolate shape (Fig. 2). According to Vandkilde (1996), a dagger of type I should be dated to the LN I period (2350-1950 cal BCE), where the type I dagger (excluding type Ie) is typical for western Denmark, where it was found (p. 13).

Fig. 3. The type I flint dagger from Samsø, Denmark (Nationalmuseet, object number: A52270, https://samlinger.natmus.dk/do/object/5175).

This type I flint dagger (Fig. 3) was discovered as a stray find on the island of Samsø in Denmark. It is heavily retouched, but would probably have had a similar lanceolate shape to the dagger from Ødis-Brandrup.

Fig. 4. The type Ia flint dagger from Haverslev, Denmark (Nationalmuseet, object number: A9900, https://samlinger.natmus.dk/do/object/108388).

This type I flint dagger of the sub-type Ia (Fig. 4) was discovered near Haverslev in Jutland, Denmark. It has a very clear lanceolate shape and has been partially polished on one side. This differs it from the type I daggers from Ødis-Brandrup and Samsø.

4.1.2 Type II

Fig. 5. The type IIa dagger from Stevns, Denmark (Nationalmuseet, object number: A36149, https://samlinger.natmus.dk/do/object/210717).

Near Stevns on the island of Sjælland, Denmark, this type IIa flint dagger was found broken in two (Fig. 5). Like the type I dagger from Ødis-Brandrup, this dagger dates to the LN I period (Vandkilde, 1996, p. 13). It has a visible lanceolate shape, though with a more prominent handle compared to a type I dagger. This is one of the many type II flint daggers discovered on the eastern Danish islands, where most of the hoards have been found (Apel, 2001, pp. 237–238).

Fig. 6. The type IIb flint dagger from Filholm, Denmark (Nationalmuseet, object number: A38100, https://samlinger.natmus.dk/do/object/88500).

At Filholm in northern Jutland, Denmark, this type II flint dagger of the sub-type IIb (Fig. 6) was discovered with its characteristic lanceolate shape. This dagger has, like the dagger from Stevns, a more defined handle compared to type I daggers. However, it differs from the rest as the handle bends to one side, uniquely giving it an exceptional shape.

4.1.3 Type III

Fig. 7. The type IIIa flint dagger from Råbylille, Denmark (Nationalmuseet, object number: A49061, https://samlinger.natmus.dk/do/object/88675).

This type III flint dagger of the sub-type IIIa (Fig. 7) was found near Råbylille on the island of Møn in Denmark. Like the type I and II daggers, this type III dagger maintains the characteristic lanceolate shape of the blade, though with a much more defined handle with pressure-flaked seams on both sides which is typical for this sub-type (Apel, 2001, p. 239). Like the previous types, the type III dagger belongs to the LN I period (Vandkilde, 1996, p. 13).

Fig. 8. The type IIIb flint dagger from Flegum, Denmark (Nationalmuseet, object number: A19284, https://samlinger.natmus.dk/do/object/88640).

Near Flegum in northern Jutland, Denmark, this type III dagger of the sub-type IIIb (Fig. 8) was found with its clearly defined handle. This sub-type differs from IIIa in the way not only are both sides of the handle pressure-flaked, but so are the edges (Apel, 2001, p. 239).

4.1.4 Type IV

Some of the most famous examples of flint daggers from southern Scandinavia are categorised as type IV daggers. However, most of those examples have been specifically labelled type IVd, not including many of the other sub-types which can look quite different from the skeuomorphic looking type IVd.

For this reason, I have included a few different types to show the variety within the type IV category specifically. These could broaden the view of the supposedly imitative nature of the type IV daggers and the craftsmanship behind it.

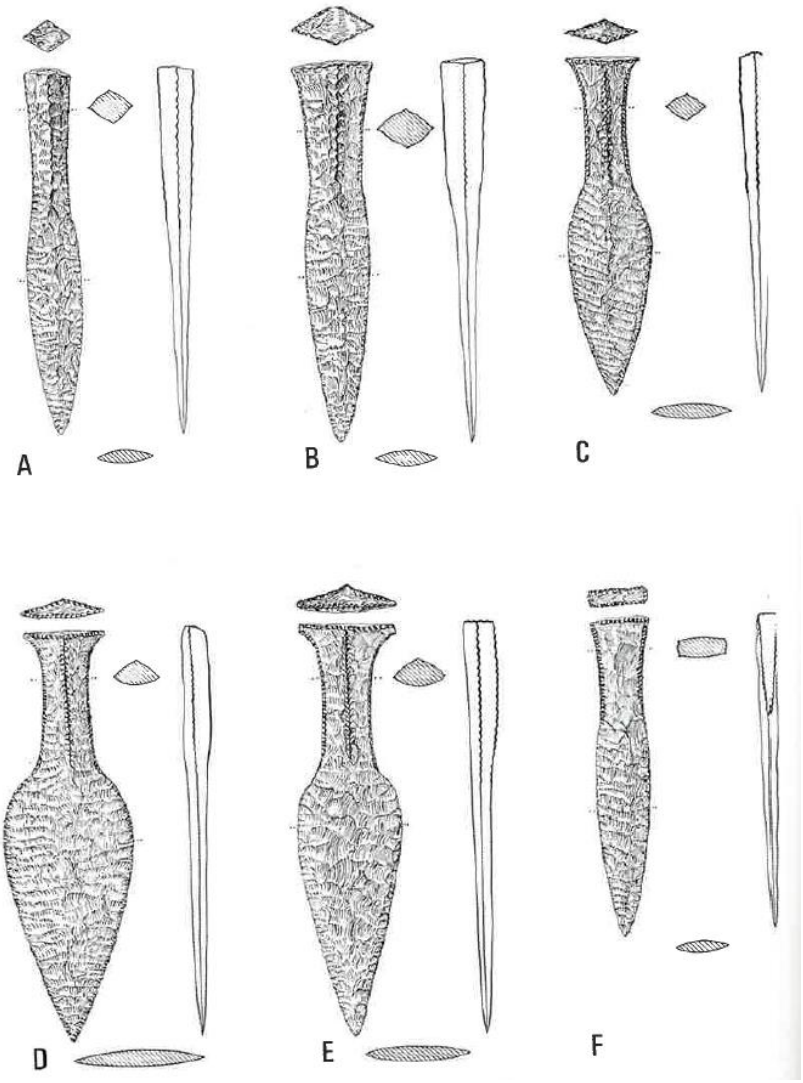

Fig. 9. The six different sub-types of the type IV category of southern Scandinavian flint daggers (Lomborg, 1973, p. 53).

Fig. 10. The type IV flint dagger from Hindsgavl, Denmark (Nationalmuseet, object number: A33093, https://samlinger.natmus.dk/do/asset/9586#location).

A typical flint dagger of the LN II period (1950-1700 cal BCE) is the famous Hindsgavl flint dagger (Fig. 10), discovered near Hindsgavl on the island of Fyn, Denmark (Vandkilde, 1996, p. 13). The 29.6 cm long dagger is, according to Callahan (2006), one of the most excellent examples of the type IV dagger with the handle ending in a characteristic fishtail shape (pp. 116, 119), and can even be found on the Danish 100 crown note, implying its modern cultural significance.

Fig. 11. The type IV flint dagger from Skatelöv, Sweden (Historiska Museet, object number, 12750, https://samlingar.shm.se/object/350BFED1-5F10-4211-B1E4-9563859E9839).

Along with the Hindsgavl dagger, the type IV flint dagger (Fig. 11) found Near Skatelöv in Småland, Sweden, is another exceptional example from the LN II period. It is thought by Callahan (2006) to be, alongside the Hindsgavl dagger, one of the most remarkable examples of flint knapping at the time, and even exceeds the dagger from Hindsgavl in length by 6.5 cm (pp. 116, 119).

Fig. 12. The type IVb dagger from Bramming Hovedgård, Denmark (Nationalmuseet, object number: A17132, https://samlinger.natmus.dk/do/object/87722).

This type IV flint dagger (Fig. 12) from Bramming Hovedgård in southwestern Jutland, Denmark, is, like the famous Hindsgavl and Skatelöv daggers, dated to the LN II period. At the National Museum in Copenhagen, where the dagger is housed, it has been incorrectly associated with the sub-type IVd, which includes the daggers from Hindsgavl and Skatelöv. When looking at the different sub-types for type IV (Fig. 9), the dagger from Bramming Hovedgård should rather be categorised as a type IVb, as this type has a significantly less flared blade, but maintains its centred seam along the handle, which is typical for this sub-type (Apel, 2001, p. 244).

4.1.5 Type V

Fig. 13. The type V flint dagger from Tågerudsgård, Denmark (Nationalmuseet, object number: A24448, https://samlinger.natmus.dk/do/object/86783).

At Tågerudsgård on the island of Lolland, Denmark, this type V dagger (Fig. 13) was discovered with a small characteristic fishtail handle base. Like the type IV daggers, this type V dagger dates to LN II as the last flint dagger type of the Late Neolithic in southern Scandinavia (Vandkilde, 1996, p. 13). This example shows the lack of a seam on the handle, missing on either side, compared to the type IV daggers, as well as a slightly protruding blade near the handle. These are common traits of the type V flint daggers (Apel, 2001, p. 245).

Fig. 14. The type Vb flint dagger from Svedstrup Brydhøj, Denmark (Nationalmuseet, object number: A6695, https://samlinger.natmus.dk/do/object/89006).

Around Svedstrup Brydhøj on the island of Sjælland, Denmark, this type V flint dagger of the sub-type Vb (Fig. 14) was discovered. Like the type V dagger from Tågerudsgård, this dagger has the characteristic fishtail handle of LN II. Specifically this sub-type displays a wide flare of the blade from the handle, and pointed ridges along across the base (Apel, 2001, p. 247).

4.1.6 Type VI

Fig. 15. The type VI flint dagger discovered at the Syltholm site in Rødbyhavn, Denmark (Andersen, T. H. (2014, October 6). Arkæologer gør enestående fund på Lolland. B.T. https://www.bt.dk/danmark/arkaeologer-goer-enestaaende-fund-paa-lolland).

During the Syltholm excavation in 2014 near Rødbyhavn on the island of Lolland, Denmark, a flint dagger dating to the Early Bronze Age (1700-1100 BCE) was discovered with one side of a birch bark handle still preserved (Fig. 15) (Vandkilde, 1996, p. 13). This is the first and so far only example of the preservation of an organic handle on a flint dagger in Denmark (Hebelstrup et al., 2015, pp. 22–23). Due to its shape, and being dated to the Early Bronze Age, it is considered an example of a type VI dagger (likely of the sub-type VIa), which is generally seen in Period I and II of the Early Bronze Age in Denmark (Lomborg, 1973, p. 70).

Fig. 16. The type VIb flint dagger from Sigersted, Denmark (Nationalmuseet, object number: A14178, https://samlinger.natmus.dk/do/object/87264).

Near Sigersted on the island of Sjælland, Denmark, this type VI dagger of sub-type VIb (Fig. 16) was discovered, dating to the Early Bronze Age like the dagger from Rødbyhavn. While the sub-type VIa has a thicker handle than the blade, the VIb dagger displays no difference in thickness from the handle to the blade (Apel, 2001, p. 248). Additionally, this specific dagger indicates a retouched base which is also seen on type Vb daggers.

4.1.7 Unique examples

Fig. 17. The flint scimitar from Favrskov, Denmark (top), and a bronze scimitar from Rørby, Denmark (bottom) (Nationalmuseet, object numbers: 9192, B14174, https://samlinger.natmus.dk/do/asset/746).

In Favrskov, Jutland, Denmark, a scimitar was discovered, not made of bronze but uniquely made of flint (Fig. 17). When compared to the bronze scimitar from Rørby, Denmark, which the 31.3 cm long flint scimitar is believed to have been modelled from, and as seen on the bottom of Fig. 17, the similarities are clearly visible. The intended function of the flint scimitar is also thought to be different from that of the ones in bronze, which questions the original intention behind the production of this unique object (Sørensen, 2012, p. 53). According to Lomborg (1973), the flint scimitar is categorised as a flint dagger of type VIc, dating to the Early Bronze Age Period I/II (pp. 62, 70).

Fig. 18. The flint composite sword from Åtte, Denmark (bottom), and a bronze Hajdúsámson-Apa type sword from Torupgårde, Denmark (top) (Nationalmuseet, object numbers: A17965-70, B10600, https://samlinger.natmus.dk/do/asset/649).

Another example of unmistakable flint-bronze imitation is a flint composite sword (Fig. 18) discovered in Åtte in Jylland, Denmark. This composite sword is believed to have been modelled to imitate bronze swords either of the Sögeler or the Hajdúsámson-Apa type (Sørensen, 2012, p. 53). On Fig. 18, an example of a Hajdúsámson-Apa type sword (top), found in Bregninge on the island of Lolland, Denmark, is seen compared to the much smaller flint sword. The flint composite swords is one of 17 found in Denmark, and is made up of six pieces of flint including a handle, a point, and four blades for the sides (Sørensen, 2012, p. 53). Like the flint scimitar from Favrskov, the composite sword is classified by Lomborg (1973) as a flint dagger of type VIc, dating to the Early Bronze Age Period I/II (pp. 62, 70).

4.2 Metal objects

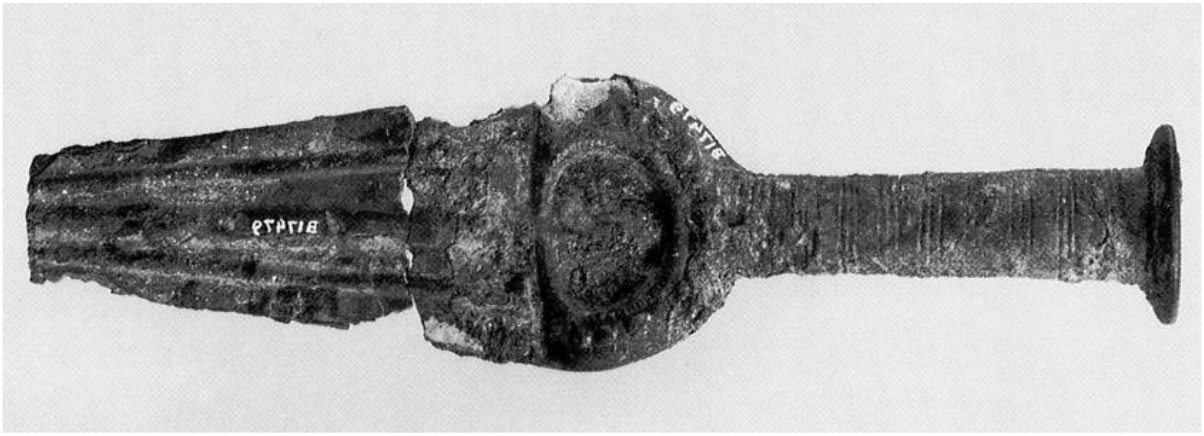

Fig. 19. The Únětician metal-hilted dagger from Vigerslev, Denmark (Vandkilde, 1990, p. 104).

As commonly believed, the flint daggers of type IV and V are supposed imitations of the Únětician bronze-hilted daggers. One such dagger (Fig. 19) was discovered in a hoard from Vigerslev on the island of Sjælland, Denmark, and is thought to be an Únětician import from Central Europe. The dagger has also been dated to LN II (1950-1700 cal BCE), which makes it contemporary with flint daggers of type IV and V (Vandkilde, 1996, p. 192).

4.2.1 Metal imitating flint

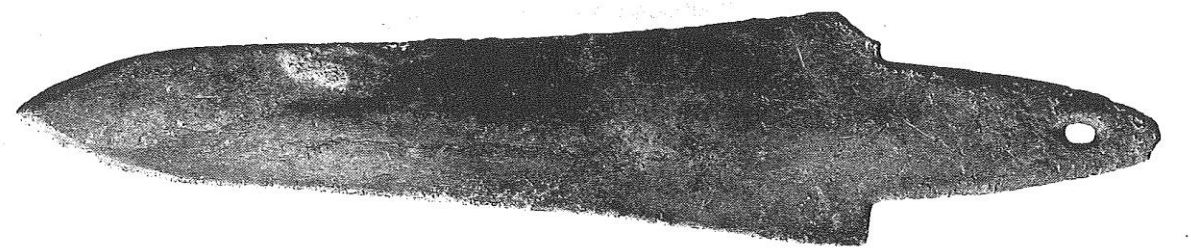

Fig. 20. The copper dagger blade from Varanger, Norway (Schanche, 1989, p. 63).

An example of a metal object imitating flint is a 15 cm long copper dagger blade (Fig. 20) discovered in a midden in Varanger in Finnmark, Norway. According to Schanche (1989), the copper blade, dated to the Neolithic from the context of the midden, has been cold-hammered to give it a more familiar shape. The familiarity in question is thought to be that of daggers and spearheads which were more commonly made from slate (pp. 62–64).

Additionally, a bronze arrowhead was discovered at the site of Les Auges in Rethel in Ardennes, France, which seems to have traits similar to that of flint arrowheads. Dating to the

Early Bronze Age, it is thought to have been cast in a mould made from a flint arrowhead, thus resembling the flint along with knapping scars (Blanchet, 1984, p. 142; Frieman, 2010, p. 39). Even though it does not originate in Scandinavia, it remains an interesting example of a bronze object likely imitating flint.

Fig. 21. The bronze axe from Riethoven, the Netherlands (Theunissen et al., 2021, p. 9).

Near Riethoven in Noord-Brabant, the Netherlands, a bronze axe dating to the Late Neolithic/Early Bronze Age was discovered (Fig. 21), which shows unique hammering scars on its surfaces. It is thought that the intention of the scars was to imitate a partially polished flint axe (Theunissen et al., 2021, pp. 8–9, 14). Like the copper dagger blade from Norway, this is a great example of hammering at a later production stage with the intent of imitating flint.

5. Analysis

In this chapter I will apply the essential theoretical framework, established in chapter 3, to the selected set of data. The designated theoretical terminology and ideas will shed new light on the imitative nature of the flint daggers of southern Scandinavia during the Late Neolithic and Early Bronze Age. This way, a more nuanced assessment of skeuomorphic imitation in this context can be developed, challenging the idea of a value-based material hierarchy. The data will be analysed in relation to the defined skeuomorphic typology and various theoretical concepts relating to (cross-)craft and the relationship between flint knapping and metalworking.

5.1 Dating: flint daggers long before metal

Before the introduction of Únětician metal-hilted daggers in southern Scandinavia during LN II, flint daggers of type I-III had already been produced and used for centuries (Apel, 2001, p. 10; Vandkilde, 1996, p. 15). While flint daggers of type IV-V (e.g., the Hindsgavl and Skatelöv daggers) seem to be obvious imitations of the Únětician daggers, daggers of type I-III are entirely stylistically independent productions. The drastic change in shape from type III-IV can also be seen on Fig. 1 and the various examples presented in my dataset, where the introduction of Únětician daggers becomes clear in contrast to the very different type I-III daggers.

Since the creation of the flint daggers of type I-III happened before the initial introduction of metal to the region, they are entirely independent productions and cannot be labelled skeuomorphs. This presents a flint dagger tradition being well established before the skeuomorphic flint daggers of type IV-VI. This questions the general intention of the creation of the flint daggers, which, before the introduction of metal, had an original purpose, while daggers like the Favrskov scimitar appears to have been almost exclusively created to imitate.

Taking a closer look at the development of the flint daggers of types I-III, it is evident that they underwent an independent change in morphology, not influenced by new foreign objects. As time progressed, the handle of the flint daggers became gradually more prominent. This demonstrates that the flint dagger craft was already undergoing changes and was being developed even before the first metal-hilted daggers were introduced to the region.

This gradual development of a defined handle can be observed on the various examples of type I-III daggers found in the previously established dataset. The three type I daggers from Ødis-Brandrup, Samsø, and Haverslev (Fig. 2–4) all have the same lanceolate morphology with

a very vaguely defined handle. The handle started becoming more distinct in the two type II dagger examples from Stevns and Filholm (Fig. 5–6), the latter being an exceptional example with its bent handle. The type III daggers from Råbylille and Flegum (Fig. 7–8) display clearly defined handles with visible seams.

5.2 Different types of imitation

To understand the imitative nature of the various objects which make up my dataset, it is necessary to analyse them using the established skeuomorphism typology and additional theoretical concepts from chapter 3. The necessity of this comes from the need to better understand the intention behind the imitation of the individual object. This will build on an understanding of the relationship between the two crafts of flint knapping and metalworking in Late Neolithic to Early Bronze Age southern Scandinavia.

5.2.1 Flint imitating metal

Looking at the two famous examples of Late Neolithic fishtail flint daggers from Hindsgavl, Denmark (Fig. 10), and Skatelöv, Sweden (Fig. 11), as well as the Únětician metal-hilted dagger from Vigerslev, Denmark (Fig. 19), the flint daggers are evident imitations of the Únětician daggers. These type IV flint daggers are examples of morphological skeuomorphism, as they mimic the shape and form of the bronze counterparts. They could also have had a certain symbolic or social meaning, thus also making them cases of symbolic skeuomorphism. The importance of the flint dagger is evident, as I explained in chapter 2.4, as most males would have been buried with them and they might have had significant importance within ritual settings. Since there seemed to have been an established agreement not to include metal daggers in graves during most of the Late Neolithic, the later flint daggers with imitative morphology could have worked as an alternative to the commonly excluded metal daggers.

However, not all type IV flint daggers are equally skeuomorphic. The dagger from Bramming Hovedgård (Fig. 12), which is a type IVb flint dagger, does have the characteristic fishtail handle base, but lacks the widely flared triangular dagger blade. This could indicate an adaptation of the otherwise imitative type IV daggers, but it could also question the inherent intention of the creation of this type of flint dagger.

The type V flint daggers (Fig. 13–14) further illustrate this probable adaption of the imitative daggers. These daggers preserve the fishtail handle base which is also seen on the type IV daggers, but they lack a central seam, indicating a shift in the craft itself. The blade morphology

of the type V daggers also differ slightly from many of those identified as type IV daggers, with the exception of daggers like the Bramming Hovedgård dagger.

Furthermore, the type VI daggers (Fig. 15–16) of the Early Bronze Age rather relate to a society in which metal and flint objects were produced side by side. Compared to the type IV and V daggers of the LN II period, the type VI daggers are missing the characteristic fishtail handle, and has a significantly different blade morphology. For some reason, it seems to no longer have been necessary to imitate the metal daggers. The flint daggers supposedly (re)gained their own unique identity and independent development, possibly because metal objects by then had become much more widespread in the region.

The flint scimitar from Favrskov, Denmark (Fig. 17), dating to the Late Bronze Age, would at first glance be assumed to be an example of morphological skeuomorphism. However, the unique flint scimitar did not have the same (or possibly any) practical function, instead making it an example of aesthetic skeuomorphism. The flint scimitar tries to copy the aesthetic of, possibly, a bronze scimitar found at Rørby, Denmark (Fig. 17). When an object imitates another, it would be obvious to assume that the imitated object has had some kind of additional significance at the time, whether it be social, symbolic, or simply being a new, foreign, and interestingly strange object. If this is to be assumed, it would make the Favrskov scimitar a case of symbolic skeuomorphism as well. This is emphasised by the fact that the scimitar was never actually used (Sørensen, 2012, pp. 53–54).

In Åtte, Denmark, the composite flint sword (Fig. 18), also dating to the Late Bronze Age, was discovered, which, like the Favrskov scimitar, is another example of aesthetic skeuomorphism. It supposedly imitates similar-looking Hajdúsámson-Apa type bronze swords like the one found at Bregninge, Denmark (Fig. 18). Just like the Favrskov scimitar, the Åtte composite sword had possibly no intended practical function, and for the same reasons as mentioned above, the sword from Åtte could be categorised as symbolic skeuomorphism as well.

5.2.2 Cross-craft

It is without a doubt that a thorough knowledge of the craft of flint knapping is needed to create a flint dagger, but there is far more to it than that. The creation of an object often includes the involvement of multiple crafts. A flint knapper might have had the necessity of knowing not only how to knap the flint to create a dagger, but also to craft a handle made possibly from organic material. At the Syltholm excavation near Rødbyhavn, Denmark, the type VI flint

dagger (Fig. 15) was discovered with its birch bark handle still semi-intact (Hebelstrup et al., 2015, pp. 22–23). The dagger is a simple example of multiple crafts involved in the creation of a singular object, but then the question rises whether the same craftsperson would have created both dagger and handle or if there was a need to pass the dagger onto another.

It is very plausible that the creation of the organic handle would have been an inherent skill to know when learning the craft of flint knapping a dagger. It could be seen as a necessary and natural step in the process. When a modern electrician has to repair cables or power outlets in a building, they are not going to need a second person to, for example, drill a new hole in the wall or replace a floor panel. Those tasks are necessary steps in the process of doing electrical work, the same way that creating an organic handle is for the flint knapper. It is therefore not unthinkable that this is an example of Shimada's multicraft, where the same craftsperson has knowledge of and access to more than a single craft.

While the creation of an organic handle could have been an essential part of producing a flint dagger, what is the more disconnected link to metalworking? The Favrskov scimitar as well as the Åtte composite sword are examples of very unique and highly experimental objects. Their lack of functionality further emphasises their significance which can symbolically indicate a domain shift in the region of southern Scandinavia during the time of the Early Bronze Age. Due to their unmistakable morphological and aesthetic similarity with certain bronze objects discovered in the region, they could represent the shift from flint knapping, as they incorporated metalworking ideas and styles into the local tradition. These objects reflect a unique craft-related relationship between flint knapping and metalworking, in which there seems to have been a direct influence from one craft to another.

Coming back to multicrafting, it is also possible that the flint knappers either had access to objects of both materials or to the knowledge of both crafts from interacting with other craftspeople. This would explain the unique and extremely visible resemblance of the flint objects to those of metal.

5.3 Metal imitating flint

The flint daggers of southern Scandinavia are popular examples of imitation of a newly introduced material. However, the material hierarchy grounded on this value-based imitation is questioned when some metal objects have been discovered to be evidence of imitation in the opposite direction. Metal objects mimicking elements of the traditional flint objects give whole new nuances to the relationship between these crafts during the Late Neolithic and Early

Bronze Age in the region. It is therefore extremely necessary to analyse some of these examples thoroughly.

5.3.1 Examples

In Varanger, Norway, a Late Neolithic copper dagger blade (Fig. 9) was discovered to have been cold hammered, thought to imitate the look of similar, more local objects made from slate (Schanche, 1989, pp. 62–64). Certain techniques from the craft of working with slate has been borrowed and used in the creation of this dagger made from a completely new and foreign material. The locally familiar technique of using percussion on a material could have been implemented here, making the Varanger dagger a great example of technical skeuomorphism, as it not only imitates the morphology of another object, but the techniques of the imitated object has been applied and adapted to fit the new material. This fits nicely with McGovern's second form of cross-craft interaction in which a technique is borrowed from another craft, but where innovation is necessary to adapt said technique to another material with different properties. According to Schanche (1989), the dagger has been crafted to resemble similar dagger blades and spearheads made from local materials (pp. 62–64). This would imply that the dagger would, in some way, also be an example of morphological skeuomorphism, as the shape of the dagger is meant to imitate another, while still having a practical function.

Another, very similar example of technical skeuomorphism would be a bronze axe (Fig. 10), dating to the Late Neolithic/Early Bronze Age, which was discovered in Riethoven, the Netherlands. The axe has very visible scars from being cold hammered, very similarly to the Varanger dagger, which is likely supposed to make it resemble a partially polished flint axe (Theunissen et al., 2021, pp. 8–9, 14). The same percussion technique, used when working with stone, seems to have been applied to the making of this bronze object. As a result, McGovern's second form of cross-craft interaction likewise fits nicely with this example as well. The technique has been borrowed from the craft of creating flint axes during this time in the region, and adapted to fit the new material. But, just as with the Varanger dagger, since it is assumed that the look of the partially polished flint axe was also a goal when creating the bronze axe, it can also be categorised as morphological skeuomorphism, as it imitates the visible characteristics of the flint counterparts.

A very different example of metal objects imitating flint is the bronze arrowhead discovered at Rethel, France, which has been cast in a mould made from the basis of a flint arrowhead (Blanchet, 1984, p. 142; Frieman, 2010, p. 39). Differently from the Varanger dagger and the

Riethoven axe, the making of the Rethel arrowhead did not necessarily include the borrowing of any techniques commonly linked to working with flint. The mould in which it was cast seems to have been made from a flint arrowhead, purely to give it the familiar look of a local, more recognisable object. For that reason, the Rethel arrowhead would not be classified as an example of technical but rather morphological/aesthetic skeuomorphism depending on its functionality.

5.3.2 Symbolic skeuomorphism

Apart from visually being examples of skeuomorphism, these metal objects imitating flint could have roots in the socio-cultural importance of flint at the time. As Stensköld (2004) describes, the flint daggers could have had an immense social and cultural significance in, for example, ritual settings (pp. 225–240). It is possible, that the craftspeople of the Late Neolithic and Early Bronze Age attempted to imitate the social value given to flint as a material used traditionally for millennia.

Both the Varanger dagger and the Riethoven axe might have carried a kind of social memory when made to look like their flint counterparts, implementing well-known techniques from the flint craft, which quite possibly could have been immensely important to the contemporary societies. Likewise, the Rethel arrowhead would have carried the same social value, as even the mould itself had been made from a flint arrowhead.

While these examples do not derive from southern Scandinavia specifically, they all resemble reactions to the introduction of metal to a region in which flint was the dominant and traditionally pursued craft. For this reason, it is not unthinkable that the situation in southern Scandinavia was positively similar to the origins of these objects, being northern Norway, the Netherlands, and France. Therefore, it is somewhat safe to assume that, since these surrounding regions experienced and reacted to the introduction of metal in this way, possibly reflecting the social significance of the former flint craft, that the societies of southern Scandinavia would have reacted very similarly.

5.3.3 Cross-craft

While many flint objects seem to imitate the morphology and aesthetic of newly introduced metal objects, the relationship between the two crafts is undoubtably a clear dialogue. The imitation seen on the metal objects is evidence in itself that it is plausible to state that the flint craft was not immediately left behind as a less valuable and less socially important material,

but it rather continued in its influence on metalworking. The techniques and ideas of flint knapping working with flint/stone in general lived on in these examples of imitative metal objects.

The two crafts seem to have been cooperating, side by side, during the Late Neolithic and Early Bronze Age, as techniques were borrowed bidirectionally. Shimada's idea of coproduction could very well fit nicely into the overall picture of this craft dialogue, as craftspeople would probably have interacted and influenced one another. The metalworking craftsperson creating the Riethoven axe would have had to either be in contact with someone with knowledge of the flint craft, or they would have had to have that knowledge themselves. In that case, multicrafting would be the correct term to use, as one craftsperson would have had to be skilled in (or have sufficient knowledge of) both metalworking and flint knapping. The same idea of craftspeople coproducing these metal objects can be applied to the Rethel arrowhead, which could not have been made without the metalworking craftsperson having access to the flint arrowhead necessary.

In conclusion, the observed imitation of the Late Neolithic and Early Bronze Age was not solely restricted to the flint craft, but metal examples provide evidence for a bidirectional influence between the two crafts. Craftspeople would have had to work together, either directly or indirectly by providing objects of their craft, to create these skeuomorphic metal objects. This further nuances the craft-relationship between metalworking and flint knapping, and challenges the notion of the materials being ranked by value as part of a material hierarchy.

6. Discussion

Based on the results of my analysis, it is now possible to establish an idea of the relationship between the flint and metal crafts during the Late Neolithic and Early Bronze Age in southern Scandinavia. What is already evident from the analysis, is that this relationship is highly complex from a craft perspective, and this challenges the notion of a value-based material hierarchy. Therefore, I will discuss the use of the term skeuomorphism both in relation to the flint daggers and the metal objects from my dataset. The interaction between these two crafts will also be discussed to interpret the visual influences observed on the data. These concepts will then be compared to some modern parallels, with which I wish to show that both skeuomorphism and cross-craft interactions are repeated phenomena throughout time.

6.1 Rethinking skeuomorphism

Based on my theoretical framework and analysis of the selected dataset, it is unmistakable that there are many nuances to skeuomorphism. The term does not by itself suggest that one object imitates another with a higher value. The complexity of skeuomorphism becomes evident when taking a deep dive into the imitating and imitated crafts, as this aspect alone complexifies the intentions behind mimicking features or ideas of another object.

When regarding the first three types of flint daggers (see Fig. 2–8), it is without a doubt that this technological trend started entirely independently in the LN I period of southern Scandinavia. Before the introduction of metal to the region in LN II, the type I-III flint daggers developed a prominent handle with lanceolate blades. This verifies that the flint dagger craft had already been established before any outside influence.

While flint daggers of type I-III were certainly not examples of any kind of skeuomorphism, types IV and V are a different story. As determined in my analysis, the type IV daggers show clear similarities with the Únětician metal-hilted daggers which came to the region during the LN II period, with which the type IV and V flint daggers are associated as well. However, as seen with the Bramming Hovedgård dagger (type IVb), this is not always the case. There are many variations of these specific types of daggers, and most often the exceptional examples like those from Hindsgavl or Skatelöv (Fig. 10–11), are regarded. Also seen is the variation of the type V daggers, which also indicates an independent development of the flint daggers. This is even clearer with the type VI daggers from the Early Bronze Age, which were being made side by side with metal objects, as these became more numerous in southern Scandinavia. This

type entirely lost the fishtail handle base seen on types IV and V, indicating a shift away from imitation in a time where metal objects were more abundant. Some exceptions of imitation during the southern Scandinavian Early Bronze Age are the Favrskov scimitar and the Åtte composite sword (Fig. 17–18), which imitated the aesthetic, (likely) as well as the symbolism, of (possibly) the Rørby bronze scimitars and Hajdúsámson-Apa type bronze swords (Fig. 17–18). The imitation of these two unique examples is very different from that of the rest of the flint daggers, as these were not meant to have a practical function. This means that the intention behind the creation of the Favrskov flint scimitar and the Åtte flint composite sword is entirely different from that of the creation of, for example, the type IV flint daggers.

That said, skeuomorphism as an idea is without a doubt far more nuanced than how it is often used in archaeology, in which it is frequently a question of material hierarchical value. I have defined a typology of skeuomorphism, in which four distinct types are established: morphological, aesthetic, technical, and symbolic skeuomorphism. This typology, along with its application in my analysis, shows the complexity of the term far beyond the complex of material superiority/inferiority which it is so often associated with.

6.2 Cross-craft interaction

It is without a doubt that some flint dagger types indeed borrowed from the morphology of some metal objects. That is clear from my data and analysis. However, as I have already underlined, this is not a monologue of craft influence, but rather a dialogue between the flint and metal crafts.

Regarding my analysis, it is evident that from the southern Scandinavian LN II period, a pattern of imitation can be observed in the flint dagger craft. Daggers of type IV-V during the Late Neolithic clearly borrowed from metal objects, specifically the foreign Únětician metal-hilted daggers. Their morphology has visually been incorporated into the crafting of these flint daggers. The influence of these crafts interacting, however, is visibly reciprocal. Multiple metal objects, such as the Varanger copper dagger (Fig. 20) and the Riethoven bronze axe (Fig. 21), have traces of imitating elements seen on flint objects. Both of these metal objects have been found to imitate flint on an aesthetic/morphological level, as well as borrowing, to a certain extent, more familiar percussive techniques. Based on this, the influence across these crafts undoubtedly went both ways, and was not restricted to the flint craft imitating metal.

This relates to McGovern's (1989) three forms of cross-craft interaction: borrowing, adaptation, and imposition (p. 1). Both crafts borrow from one another whether it be

aesthetic/morphological or technical, showing that there was never a clear imposition on the flint craft. The interaction was rather a craft dialogue; two vastly different materials with different properties which influenced each other reciprocally.

The terms multicraft and coproduction, defined by Shimada, are also highly relevant to this interaction. The type VI dagger from Rødbyhavn, Denmark, is itself an example of different crafts working together as it displays a semi-preserved birch bark handle. Whether it is an example of multicraft (one craftsperson knowing different crafts) or coproduction (multiple craftspeople with each their specialised knowledge) cannot be known for sure, but it is clear that there is an interaction between different crafts. For that reason, it is not unthinkable that flint knappers and metalworkers could have worked side by side. The Favrskov flint scimitar (Fig. 17) and Åtte flint composite sword (Fig. 18) might even be examples of exactly this, as their creators would have needed to at least be in possession of exemplary metal objects.

Flint craftspeople imitating metal objects highly likely did also not simply wish to copy them. They were found to experiment with the new shapes of metal objects and innovate greatly within the flint craft. The Late Neolithic and Early Bronze Age craftspeople in southern Scandinavia reacted to a very foreign material suddenly placed in a whole new social context.

Therefore, the craft influence was certainly not only restricted to metal influencing flint, but the other way around as well. With the introduction of metal, the flint and metal crafts seem to have significantly interacted with each other. This is evident based on the evidence from my data and the subsequent analysis, proving that a complex relationship existed between these two very different crafts.

6.3 Modern parallels

The concepts of skeuomorphism and cross-craft are, however, not only restricted to the past. Objects of one material are often seen to imitate that of another in the present day. This could be something as evident as IKEA furniture made of plastic while mimicking wooden textures, but there is also imitation in many other varieties. Some electric vehicles, for example, have fake engine sounds, which brings more familiarity to a world accustomed to engines, but which also has a practical function as it makes the vehicle more noticeable in public and thus increases safety. Additionally, modern-day cross-craft influences exist, such as metal furniture borrowing from woodworking joint techniques, which are entirely unnecessary when working with metal. However, this provides the more familiar look of wooden furniture, which

obviously cannot be welded together as can be done with metal. That said, skeuomorphism as well as cross-craft interactions are recurring concepts repeated throughout time.

7. Conclusion

Coming back to the main research question of this thesis, I sought to dive into the relationship between metal and flint in Late Neolithic to Early Bronze Age southern Scandinavia, seen from a craft perspective. Contrary to common beliefs in the archaeological world, there was not a simple value-based hierarchy of material superiority/inferiority. The relationship between these two crafts was rather a complex dialogue of borrowing and adapting shapes and craft techniques between one another. Due to this, the skeuomorphism of the objects analysed is far more multifaceted compared to how it often is and has been used by archaeologists.

To touch on the sub-questions I wanted to answer throughout this thesis, I first asked how the term skeuomorphism can be questioned in relation to the flint daggers of southern Scandinavia. While skeuomorphism describes the imitation of objects, in its archaeological context, it is much more nuanced. I have illustrated this with a typology presenting four different aspects of skeuomorphism, giving evidence to its complexity. The multiple metal objects found to imitate flint also work as a way to portray the complex nuances of cross-craft interaction and skeuomorphism during the southern Scandinavian prehistory, which also answers my second sub-question. Lastly, I wanted to show how this is not uniquely a characteristic of prehistory, but these concepts can be observed even in the modern world, as crafts borrow and adapt, presenting the complex dynamic of craft relationships.

This new perspective on the craft relationship between flint and metal presents a different understanding of the craft dynamic of prehistoric societies. As the crafts and how they interacted with each other is looked further into, it becomes clear that the craftspeople of Late Neolithic and Early Bronze Age southern Scandinavia were not simple copyists but rather worked together to innovate creatively. They worked side by side in a dynamic relationship of reciprocal influence, shaping a changing society in which a new material was slowly being introduced.

Abstract

During the Late Neolithic to Early Bronze Age in southern Scandinavia, large amounts of flint daggers, characteristic of this region, were produced. As metal was introduced to southern Scandinavia as a new and foreign material, the flint daggers are observed to begin displaying imitative traits in their morphology. This leads to an investigation in the intention behind the creation of objects imitating another of a different material. This relates to the concepts of skeuomorphism and cross-craft interactions and influences, which, when understood correctly, can paint a picture of the craft relationship between flint and metal during this time. Skeuomorphism describes the way objects imitate one another, but it has often been inadequately used within archaeology to describe value-based material hierarchies. Furthermore, cross-craft interactions describe the way craftspeople might have interacted and/or influenced each other. This gives the relationship between flint and metal a more craft-focused perspective, which centres on the intention behind objects and their innovative nature. A broad dataset, including multiple flint daggers from southern Scandinavia as well as some metal objects assumed to imitate flint, is thoroughly analysed based on the theoretical framework, including a newly defined typology of skeuomorphism, meant to provide nuance to the term. This provides evidence for an interpretation of the skeuomorphic flint daggers being more than simple mimicking to copy value. Contrarily, the southern Scandinavian flint daggers show an original independent development predating the introduction of metal to the region. Later flint dagger types do show characteristic imitation, but, based on examples of metal imitating flint, the skeuomorphic nature of the flint daggers proves to be much more complex than originally thought. They symbolise a multifaceted relationship between the flint and metal crafts. This changes the entire perspective on cross-craft interactions and influence in prehistoric southern Scandinavia, broadening the understanding of this craft relationship. It goes to show that this type of imitation is far from limited to an interpretation of being motivated by material value, but rather describes a dialogue between crafts.

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Appendix

Flint daggers

Find location	Type	Dating	Source
Ødis-Brandrup (Denmark)	I	LN I	Nationalmuseet, object number: A7666, https://samlinger.natmus.dk/do/object/210446
Samsø (Denmark)	I	LN I	Nationalmuseet, object number: A52270, https://samlinger.natmus.dk/do/object/5175
Haverslev (Denmark)	Ia	LN I	Nationalmuseet, object number: A9900, https://samlinger.natmus.dk/do/object/108388
Stevns (Denmark)	IIa	LN I	Nationalmuseet, object number: A36149, https://samlinger.natmus.dk/do/object/210717
Filholm (Denmark)	IIb	LN I	Nationalmuseet, object number: A38100, https://samlinger.natmus.dk/do/object/88500
Råbylille (Denmark)	IIIa	LN I	Nationalmuseet, object number: A49061, https://samlinger.natmus.dk/do/object/88675
Flegum (Denmark)	IIIb	LN I	Nationalmuseet, object number: A19284, https://samlinger.natmus.dk/do/object/88640
Hindsgavl (Denmark)	IV(d)	LN II	Nationalmuseet, object number: A33093, https://samlinger.natmus.dk/do/asset/9586#location
Skatelöv (Sweden)	IV(d)	LN II	Historiska Museet, object number: 12750, https://samlingar.shm.se/object/350BFED1-5F10-4211-B1E4-9563859E9839
Bramming Hovedgård (Denmark)	IVb	LN II	Nationalmuseet, object number: A17132, https://samlinger.natmus.dk/do/object/87722
Tågerudsgård (Denmark)	V	LN II	Nationalmuseet, object number: A24448, https://samlinger.natmus.dk/do/object/86783
Svedstrup Brydhøj (Denmark)	Vb	LN II	Nationalmuseet, object number: A6695, https://samlinger.natmus.dk/do/object/89006

Rødbyhavn (Denmark)	VI(a)	EBA	Hebelstrup et al., 2015, pp. 22–23
Sigersted (Denmark)	VIb	EBA	Nationalmuseet, object number: A14178, https://samlinger.natmus.dk/do/object/87264
Favrskov (Denmark)	VIc	EBA	Nationalmuseet, object number: 9192, https://samlinger.natmus.dk/do/asset/746
Åtte (Denmark)	VIc	EBA	Nationalmuseet, object number: A17965-70, https://samlinger.natmus.dk/do/asset/649

Metal objects

Find location	**Type**	**Material**	**Dating**	**Source**
Rørby (Denmark)	Scimitar	Bronze	EBA	Nationalmuseet, object number: B14174, https://samlinger.natmus.dk/do/asset/746
Torupgårde (Denmark)	Sword (Hajdúsámson-Apa)	Bronze	EBA	Nationalmuseet, object number: B10600, https://samlinger.natmus.dk/do/asset/649
Vigerslev (Denmark)	Dagger (Únětice)	Bronze	LN II	Vandkilde, 1990, p. 104
Varanger (Norway)	Dagger	Copper	LN	Schanche, 1989, p. 63
Rethel (France)	Arrowhead	Bronze	EBA	Blanchet, 1984, p. 142
Riethoven (the Netherlands)	Axe	Bronze	LN/EBA	Theunissen et al., 2021, pp. 8–9, 14