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Crafting Lines

Cultural Transmission and Embodied Knowledge in Romani Travellers' Craftsmanship

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Abstract

This article explores the significance of traditional Romani crafts, specifically wirework, as a vital component of Romani cultural heritage in Norway. It examines how these traditional practices, in which intangible cultural threads are interwoven with material skills, are transmitted and maintained, as well as how they find new meaning in contemporary design. The Guttormsgaard Archive serves as the primary research site—a space where products function as carriers of culture—and hosts a Romani wire workshop led by the musician and craftsman Elias Akselsen. Together, these elements provide a means of observing how the act of crafting lines, both literal and metaphorical, serves to preserve identity and foster an in-depth understanding of heritage. Through a qualitative case study methodology, including a workshop, interviews and participatory observations, combined with concepts of aesthetics and embodied consciousness, the research examines how material and narrative lines contribute to the contemporary role of craft in cultural preservation, education and societal comprehension.

Introduction

Since 2022, the Guttormsgaard Archive in Blaker, Norway, has served as a key site for pedagogical engagement in the Design and Culture course within the master's programme Product Design, Design and Complexity at Oslo Metropolitan University, Norway. Originating from engagement with the Guttormsgaard Archive, established by artist Guttorm Guttormsgaard (1938–2019), the archive contains a collection of approximately 20,000 objects. Significantly, it holds a valuable collection of products made by Romani travellers, including wirework, which provides a critical material context for this study. Using Fallan's concept of design culture (2019) as a bridge between history and contemporary society, this article promotes a culturally sustainable approach to design.

The course framework emphasises material culture and associated relational aspects, defining culture broadly as *human-made actions and the results of interactions between humans and materialities, sometimes influenced by nature and non-human actors*. The course encourages students to learn about design culture, including diverse material experiences, by conducting studies and creating products within specific contexts. The framework highlights various forms of articulation, such as texts, visuals and materialised products, all of which serve as carriers of cultural expression. The visits to the Guttormsgaard Archive included a guided tour by Ellef Prestsæter, manager of the Guttormsgaard Foundation's archive, and a workshop on wirework by Elias Akselsen.

The photo in Figure 1 shows kitchen utensils, such as whisks and placemats, which are labelled *Taterarbeider* in the *Guttormsgaard Archive*. The research triggers a reflection

through a case study analysis of the archive as a cultural site for material culture, investigating the role of traditional crafts by focusing on Romani travellers' wirework in the Norwegian context as a vital medium for cultural transmission and heritage preservation. More detailed accounts of the Guttormsgaard Archive and its collection of kitchen utensils, along with their cultural background, crafting techniques and aesthetic value, are described in the following sections.

Figure 1

Romani wire craft. Collection of kitchen utensils at the Guttormsgaard Archive. Ellef Prestsæter talks about the collection during a guided tour in November 2024. Photo: A. Heimer.



The emphasis on craft and cultural values in design as a contribution to society aligns with EU-funded projects, such as the CraftHub EU project (CraftHub, 2022) and the New European Bauhaus (NEB EU, 2020). This special issue of FormAcademic reflects ongoing dissemination, promoting craft in society. NEB EU is a broad interdisciplinary European project that seeks to steer the transformation of societies along three interrelated values: sustainability, aesthetics and inclusion. In this article, the meaning of aesthetics goes beyond the classical definition as an expression of beauty and is merged with concepts of *everyday aesthetics* (Saito, 2007, 2017) and *aesthetic awareness* (Heimer, 2022; Zhao et al., 2024), which incorporate aspects of sustainability through an understanding of material culture. These concepts will be further described in the theoretical framework. The term 'inclusion', however, has several meanings. A brief description of the contrasting reality—the tragic

history of Romani travellers—gives perspective and depth to this term. Inclusion also refers to access—how cultural transmission occurs through unconventional ways of dissemination that enable access to the many layers of meaning embedded in products.

Aims and research questions

This study investigates how the tangible lines of the wire itself interweave with the intangible lines of ancestral knowledge, storytelling and Romani cultural identity. By examining the Guttormsgaard Archive as a rich repository of material culture and a wirework workshop led by the craftsman Elias Akselsen, this research explores the multifaceted meanings generated when material culture and craft traditions are not merely preserved but actively crafted and re-signified across generations. Ultimately, the study aims to explore the evolving value and beauty of craft in contemporary society.

Research question: How can the concept of *crafting lines* facilitate the transmission of intangible Romani heritage within contemporary design education? Sub-RQ: How does the interplay between archival context, Akselsen's master demonstration and wirework craft practice transform students' understanding of material culture?

Theoretical framework

The study is framed by three theoretical pillars: design culture, craft and craftsmanship, and theories of lines. Various concepts of aesthetics, such as *everyday aesthetics*, *aesthetic awareness* and *formal aesthetics*, form part of each of the three theoretical pillars. Craft involves a multi-perceptual approach to aesthetics and is aligned with Baumgarten's (2008) original definition of aesthetics as 'the science of the senses' (p. 11). Principles based on formal aesthetics (Akner-Koler, 2007; Hannah, 2002) are used as abstract analytical tools to describe form and structure, during the crafting processes and of products. The 4E- cognitive theory proposed by Nimkulrat and Groth (2024, pp. 4–5)—encompassing *embodied*, *embedded*, *enacted* and *extended cognition*—serves as a supplementary perspective for this research and constitutes a bridge between the often-problematic dichotomy between mind and body. The 4Es somewhat overlap with the three pillars and contribute to understanding their interconnections. The *Cultural Transmission of Wire Crafting* model in Figure 2 represents the field of research for this article.

Design culture

Design is part of culture, encompassing material culture and the affordance of products in use as relational factors. As a profession and discipline, design has significantly expanded and developed over the last few decades into various professional fields. Along with this

expansion, the focus has changed from designing products to developing new and improved systems and services in society (see, e.g. Rodgers & Yee, 2018; Sevaldson & Jones, 2019; Stickdorn et al., 2018). Fallan (2019) describes design as the interface between people and the world and design culture as 'a course of action' (p. 15). This means that design culture is embedded in our lives, and as makers, we uncover value through creative processes and participation, rather than just observation. Fallan (2019) reminds us of the importance of recognising the relational aspects between people and things to gain access to 'the open-ended, constantly shifting nature of its subject matter – a familiar challenge in all types of contemporary history' (p. 16). Guttormsgaard's philosophical approach to material culture, described in the chapter *Cultural platform*, demonstrates a rich, dynamic comprehension and experience of products.

Everyday aesthetics is a philosophical approach to sustainability, described by Saito (2007, 2017) as encompassing interactions with the environment and everyday objects. Everyday aesthetics offers insights by sharpening sensibility to surroundings, expanding the scope beyond art-centred aesthetics and highlighting the serious implications of seemingly innocuous judgments. It proposes a pragmatic attitude towards aesthetics that transcends conventional concepts of beauty, taste and judgment. In this context, it is about the value of crafted everyday objects.

These pragmatic criteria for aesthetics are aligned with embedded and enacted cognition, two of the 4Es in embodied cognition theory (Nimkulrat & Groth, 2024). According to Nimkulrat and Groth (2024), cognition is embedded in material and social contexts as a form of situated learning. Enactive cognition, originally rooted in biology and psychology theory, is exemplified in this article through the perception–action loop, which refers to interaction with the environment 'grounded in perceptual and sensory functions' (Nimkulrat & Groth, 2024, p. 6). These criteria emphasise that 'design and craft practices are informed by multiple ways' (p. 6), not only through the manipulation of materials but also through creative processes involving objects and one's imagination. In this case, the creative process is influenced by the atmosphere at the Guttormsgaard Archive.

Craft and craftmanship

The concept of craft has become a buzzword in Western societies and is used widely, often in marketing. It includes 'advertising such as crafted and hand-built […] promoting everything from cars, processed foods, new housing developments, and building societies to wristwatches, cigarettes, beers, and clothes' (Frayling, 2017, p. 61). In parallel, change is taking place, as the basic understanding of craft is revitalised—a shift calling for the convergence of the head, the heart and the hand, whereby the value of craft is renewed (Frayling, 2017, pp. 63–64). This aligns with 4E cognition theory (Nimkulrat & Groth, 2024)

and with experiential knowledge, which refers to learning by using our hands (Groth, 2017; Heimer, 2020; Heimer et al., 2017; Mäkelä & Löytönen, 2015; Pallasmaa, 2009). We argue for reinstating craft and crafting in design and design education to enhance both tangible and intangible dimensions, using crafting as a reflective approach to expand the meaning and value of products within their cultural context. The concept of *aesthetic awareness* is crucial in this context. From an art-, design- and craft-based perspective (maker perspective), the concept of aesthetic awareness is defined by Heimer (2022) as 'an open attitude and sensitivity to interaction between the form and body through the material' (p. 6). Working exploratively with crafting techniques results not only in forms and products. The act of making potentially gives rise as well to experiences of resonance with the material, also described as *material engagement* or *material agency* (Heimer, 2020; Malafouris, 2013; Malafouris & Koukouti, 2022), meaning that the act of making can be experienced as relational. It is common for makers to perceive creative processes as a 'dialogue between form and body through the material rather than purely as control over the material' (Heimer, 2022, p. 8). The concept of material agency implicitly includes an embodied dimension of cognition, which influences the development of craft knowledge in both practice and theory.

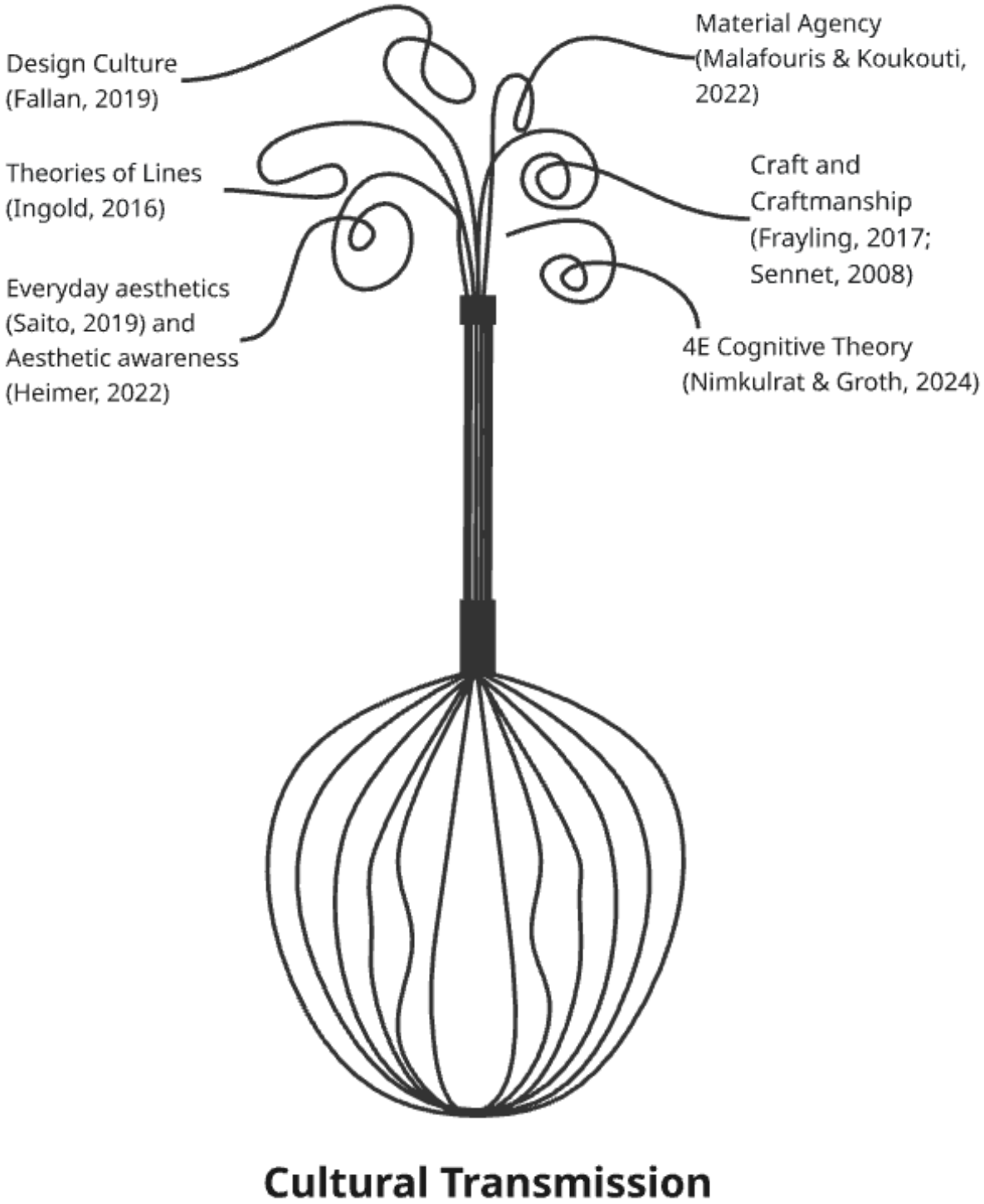
Traditionally, it has been common to learn craft through copying (Sennett, 2008; Skov, 2022). However, copying as a methodological approach is rarely seen in art and design education in the Western world today. We question the absence of copying in modern education, as copying fosters essential perceptual and technical skills through repetition. These skills are important when ideas are to be materialised in nuanced ways.

> We recognize repetition as an opportunity for change and experience, and when we have done something enough times, we feel like challenging this something, and perhaps we see in the repetitions some ways to change and develop the craft. (Skov, 2022, p. 47 – translated from Danish by Heimer)

Another definition of aesthetic awareness relates to learning processes more broadly. According to Zhao et al. (2024), aesthetic awareness is defined as 'awareness about beauty, which is a part of human self-awareness', fostering 'dynamic reflection of the aesthetic object, as a kind of social awareness' (p. 100). From a design cultural perspective, a focus on craft and aesthetics within education, as part of students' development, contributes to social strategies that create cultural value through aesthetic approaches, in line with the vision of NEB EU. Examples in the article will demonstrate perspectives on NEB EU's vision and the values of craft worldviews and crafted values.

Figure 2

Cultural transmission of wire crafting. A model representing the research field. Model: Haizea Pérez Machin.



The concepts are related to 4E cognition in several ways. Embodied consciousness involves 'a process of automating the interaction between actions, materials and tools' (Nimkulrat & Groth, 2024, p. 5). The Romani wire workshop in this research exemplifies embedded consciousness, showing how the student, functioning as an apprentice, expands their

knowledge through the guidance of Elias Akelsen, a master craftsperson demonstrating his skills. This also illustrates how craft skills are 'not always readily available to us for conscious reflections' but that 'a person can make their skills seen through enactment, communicated through performance' (Nimkulrat & Groth, 2024, p. 6). Extended consciousness is described as encompassing 'boundaries beyond the individual', exemplified through tools and technologies that, by experience, 'afford opportunities to extend cognition beyond the body' (Nimkulrat & Groth, 2024, p. 6).

Theory of lines

The theory of lines in form theory is based on geometry, where a line is described as the path of a point in motion (e.g. Greenberg, 2008). From a geometric point of view, all 2D and 3D forms are constructed from points and lines. Lines—whether straight, angular or curved—are defined abstractly in geometry and through geo-organic vision, which is a supplementary visual analytical tool for forces and movements in form theory (Akner-Koler, 2007; Hannah, 2002). Principles from geo-organic vision help us understand lines and forms abstractly and concretely in an embodied way (Heimer, 2020). Another key principle in form theory is structure, which is defined as how the parts of a form are arranged or constructed (Hannah, 2002).

From a phenomenological perspective, lines are implicitly embodied, and forms are experienced through bodily movements (Merleau-Ponty, 2012). Tin (2007) describes the connections between perception—understood as an embodied, concrete experience—and abstraction in *The First Forms. Abstractions in Folk Art*. The first forms recognised in patterns across most cultures are lines of the circle, the square, the cross and the zig-zag. Ingold (2016) uses an anthropological approach in which there are touchpoints between tangible and intangible lines. He describes a diverse, rich body of material and explains the meaning and use of lines—whether concrete, abstract or metaphorical—as expressions and structures. Lines are described as traces created by humans, non-humans and in nature. The examples demonstrate different ways of using lines in drawing and writing, such as form, constructions and expressions of language and music. This leads to the topic of this article—exploring lines as expressions through a workshop in which Romani wirework is demonstrated and situated within its cultural context.

Methodological approach

This study seeks to understand the meaning and transmission of Romani craft and the philosophy of products experienced at the Guttormsgaard Archive. With this aim, the research employs a qualitative, interpretative case study methodology (Stake, 1995; Yin, 2018) to explore the transmission of Romani craft heritage in a contemporary educational

setting. The case study approach provides an ideal site to investigate how the interplay of material practice, storytelling and cultural learning unfolds in a contemporary context. Within this overarching case study framework, our approach integrates several data collection methods to enable triangulation of the findings. For the analysis of the wire craft workshop, the specific methodologies were participant observation, together with semi-structured and in-depth interviews. As artists and skilled crafters, we acknowledge the importance of drawing on subjective experiences through first-person perspectives in ways that connect a particular culture to its broader context (Heimer, 2020, p. 58).

Workshop

The workshop on Romani wirework, with Elias Akselsen as the instructor, constitutes a crucial part of the case. In design, the term 'workshop' is often associated with the initiation phase of a design project. Grimsgaard and Høie (2018, p. 16) categorise workshops into introductory, strategic and creative. Workshops are also used in other design phases as part of iterative processes. Workshops are organised to collect data for further exploration and development of the design project. However, the concept of the workshop in this article is craft based. Originally, the term 'workshop' referred to the craftsman's home, a *productive space* where a master and their apprentice meet face to face to transfer knowledge and skills (e.g. Gamble, 2001; Sennett, 2008, pp. 53–58). While this description of a workshop resembles a demonstration, the two differ in important ways. Unlike a demonstration, which is rather a one-way transfer of information, a workshop today is designed as a relational and immersive experience. In the present case, it connects craft technique with cultural heritage and involves both material culture and social cultural aspects. In this way, the workshop provides multiple layers of knowledge and skill transmission.

Participatory observation

The authors draw on their deep-seated experience as skilled crafters by acting as participant-observers. This qualitative method means that the observer is visible and participates together with the informants in the case (Grimsgaard & Høie, 2019, pp. 97–98). Rather than merely being acknowledged in passing, the authors' positionality serves as a reflective analytical tool. Their role allows them not only to observe Akselsen's teaching methods, the students' engagement and the group dynamics but also to experience the crafting process firsthand, providing embodied insights into the material challenges and tacit knowledge being transmitted. The authors' experiences and comprehension of tacit knowledge in wire crafting serve as a baseline for interpreting the students' haptic struggles, allowing for a comparative analysis of expert and novice material engagement. This perspective enables an understanding of the material challenges involved; the haptic dialogue between maker and material; and the tacit knowledge that is difficult for a non-

practitioner to observe. This personal, embodied knowledge of craft processes facilitates a nuanced interpretation of the challenges of cultural transmission. The insider role is crucial for drawing on subjective experiences to connect with the broader cultural context of craft, heritage and design education.

Interviews

Individual semi-structured interviews with some of the students and Elias Akselsen were conducted, in addition to an in-depth interview with Eric Nord-Kelly, artist and head engineer at Product Design. These interviews were conducted by the authors and transcribed for analysis with the aim of gathering insights into the participants' perspectives. For the semi-structured interviews and informal conversations, some questions were prepared to serve as follow-ups, helping to facilitate the flow of discussion (Grimsgaard & Høie, 2018, pp. 88–89). The interviews were structured around three core themes: personal experiences of engaging with Romani craft practice and its cultural context, reflections on the materiality of the wire itself and broader thoughts on the significance of craft as cultural heritage, both historically and in the present day. Informal conversations were also held with key informants Ellef Prestsæter and Elias Akselsen, which provided additional context on the archive's philosophy and the cultural background of Romani craft.

Ethical considerations

The study was conducted in accordance with ethical guidelines for research. Anonymity was maintained for the student participants throughout the data analysis and reporting. The research plan and data management procedures align with Sikt, the Norwegian Agency for Shared Services in Education and Research, ensuring compliance with General Data Protection Regulation (GDPR) requirements. Informed consent was obtained from all the participants, including the use of all photographs. Additionally, a formal research contract was established with the lead craftsman, Elias Akselsen, as well as with Ellef Prestsæter and Eric Nord-Kelly.

Cultural platform for the case study

Material culture at the Guttormsgaard Archive

The Guttormsgaard Archive's non-hierarchical philosophy treats products as carriers of meaning rather than as mere catalogue entries. This approach offers a rich framework for exploring material culture, allowing space for imagination and comprehension of products as concepts travelling through time. The word 'archive' has several meanings. One is a place where materials are stored, such as historical documents, books and objects. It is common

for a document or object in an archive to be catalogued and systematised according to a linear timeline and in a specific cultural context. This archive is structured differently from those in conventional museums of art, design and craft, since its blended media approach facilitates alternative narratives of cultural history through products.

Guttormsgaard (2006) recognises the significance of each object's history and wanted it to be experienced without predetermined interpretive frameworks. The archive is described as an extension of everyday life, with a significant part of the collection comprising artefacts made out of necessity. Guttormsgaard also expresses a search for artefacts that have the effect of surprise (Fabricius et al., 2025, p. 22). Ellef emphasises that neither the site nor all the products in the collection are predefined. There is no clear explanation regarding why each item is collected or to what context it belongs. What is important about the archive is the connections that arise between objects, not each object in and of itself (Fabricius et al., 2025, p. 27). The philosophical approach to products emphasises their active role in the archive, keeping questions about both the products and the archive open to experience and interpretation. An example from the rich collection is a bible, a book of exceptional craftsmanship. It has an accompanying leather case designed for travel (Figure 3). The philosophy of the archive also includes an interactive approach. Visitors to the archive are encouraged to explore the products closely and handle them directly.

Among the many artefacts are delicate birds made from thin layers of wood shavings (Figure 4). They are examples of objects made by Russian prisoners of war in Norway during World War II. The birds and other crafted artefacts were used in exchange for food and clothing and were thereby created out of necessity (Figure 5). Over time, birds have become a symbol of Russian prisoners of war in Norway (Larsen, 2001). While the delicate Russian birds beautifully exemplify material resourcefulness, they also highlight a central theme of the Guttormsgaard Archive: the elevation of the *craft of necessity.* These objects were made by marginalised individuals using the materials at hand to trade, survive and meet their human needs. This fundamental principle, in which everyday survival intersects with the human drive to create, bridges the historical artefacts of the archive and living cultural practices. Just as the prisoners of war transformed wood shavings into objects of exchange, the Romani travellers used inexpensive and readily available materials, such as metal wire, to sustain their nomadic livelihoods. Having established the archive's philosophy of valuing objects born from necessity, we now turn to the specific context of Romani wire craft and the role of key cultural transmitters, such as Elias Akselsen, in keeping these material and narrative lines alive.

Figure 3

Handwritten Coptic Bible, likely around 200 years old. Manuscript on parchment, hardcover. https://arkiv.guttormsgaardsarkiv.no/node/35/item/76. Photo: A.Heimer.



Figure 4

Figure 4 shows a selection of wooden products at the Guttormsgaard Archive. Photo: A. Heimer.



Figure 5 *Bird carved in wood with painted decoration, composed of several pieces a head, body and tail together, and a pair of wings. It was made by a Russian prisoner of war in Norway during World War II (1941–1945) and served as a means of exchange for food and clothing. https://arkiv.guttormsgaardsarkiv.no/node/237/item/202. Photo: Unknown.*



The archive constitutes a motley collection of products. In publications about the Guttormsgaard Archive, some people in the field of art and culture have shared their thoughts and experiences. Dag Hofseth describes the Guttormsgaard Archive as a 'magical meeting point for thoughts and experiences that can be shared and reused for hope and joy' (Hofseth, in Guttormsgaard Archive, n.d., p. 42). Many of the products are anonymous in the sense that a signature is missing, and the origin is unknown. However, 'all of them are marked by the hand that created them. They are things we live with that fill our lives, but that we overlook. Seen from a phenomenological view, Guttormsgaard makes us see the products, leveraged, removed from their usual context anew, strips them of their function and name, and reproduces them in their naked materiality and form […] to lead us back to the things themselves' (Tin, 2007in Guttomsgaard Archive, (n.d.), p. 71). Lars Elton questions conventional value judgments and hierarchy within art and craft: 'What makes us value an artist's original work more than a utility object shaped with generations of inherited experiences? […] Why do we value innovation and originality more than tradition and the

transmission of knowledge?' (Elton, in Guttormsgaard Archive, n.d., p. 148). These comments and questions operate on several layers, affirming the value of culture and the craft of making products while simultaneously calibrating the value of body and mind and expanding the space for experiencing products as material culture up close.

Elias and the Romani people

The official Norwegian designation 'Romani people/Tatere' reflects differing preferences within the community regarding self-identification (Utdanningsdirektoratet, 2020). In the present article, the term 'Romani travellers' is used to highlight their background as travelling people who have influenced Norwegian culture in many ways. They are people who make their living while travelling along their routes. Items made using wirework were among the many crafted products they created and traded for food. Their culture is characterised by its diversity across Europe, with various subgroups practising distinct traditions that reflect their historical and social contexts. Among these traditions, crafts such as metalworking, knifemaking woodworking, basket weaving and wirework, have been integral to Romani travellers' livelihoods and cultural expression, serving both practical and symbolic purposes (Møystad, 2006). The exploration of Romani travellers' cultural heritage and craft traditions provides a critical foundation for understanding the role of traditional practices, such as wirework, in preserving and transmitting cultural identity.

Elias calls himself a 'tater'. In some sections of this article, the term 'tater' is used to emphasise his identity. Tater is a controversial name for his ethnic group, as it often carries negative connotations. History shows that this ethnic group has been subjected to severe discrimination and systematic persecution. In Norway, systematic measures aimed at Norwegianisation and extermination were implemented. From 1900 up to the early 1970s, children were taken from their parents, and many women and men were forcibly sterilised (Møystad, 2006). It was not until 1998 that the Norwegian government officially recognised the Romani people/Tatere as a national minority. Gradually, the authorities began to acknowledge that abuses had been committed against travellers, both as a group and as individuals (Utdanningsdirektoratet, 2020). Elias is one of the key people who has contributed extensively to reviving the Tatere tradition and the rich culture it represents in the Nordic countries. He is a well-known Norwegian musician and cultural transmitter, who is highly skilled in wirework. As a musician, he communicates the lived experiences of Romani travellers through his distinctive voice and artistic presence. As revealed through the interviews, clear connections emerged between the storytelling in the lyrics and the culture of craft, both linked to objects made for everyday sustenance.

Wire, being cheap, accessible and portable, became a supporting element of Romani travellers' economy and culture (Vie, 2012, p. 27). It is uncertain where and from which

culture thread work of the kind presented in this article was first practised. In a personal conversation with the authors, Elias explains that wirework in Norway originated from the boat people, a subgroup of Romani travellers. They were the first to create the idiom of the forms, such as whisks and other kitchen utensils. Figures 6–8 show examples from the rich tradition of wirework products, such as a whisk, a baking tool for pricking crispbread and a basket made of steel wire and glazed ceramics. The products demonstrate crafting skills and the beauty of function.

Romani travellers were poor. Recalling his childhood, Elias described 'hunting' for wire by stealing it from haystacks on farmers' fields and transforming it into products to sell back to those same farmers. He remembers coming back from the field and watching the men around the warm fireplace crafting the wire products, from whom he learned the techniques. Whisks are the easiest products to make, yet they are beautiful forms in their own right. Despite the whisk being based on a core structure and certain braiding techniques, there are variations of forms to be found. Elias's brother makes wirework in the tradition of the Boot-taters, with the whisk stems being longer than those Elias makes, while his daughter uses more decorative elements in her products. Although there is a body of literature on Romani cultural heritage (Larsen, 1991, 2001; Møystad, 2006; Vie, 2012), gaps remain in studies on Norwegian Romani travellers' wirework, limiting the ability to contextualise the practice within contemporary design and design education. Existing sources on metalworking and intangible heritage provide a foundation but do not fully explore wirework's unique characteristics.

Figure 6

A handmade kitchen whisk made of steel wire. Photo:Unknown
https://arkiv.guttormsgaardsarkiv.no/node/232/item/901#



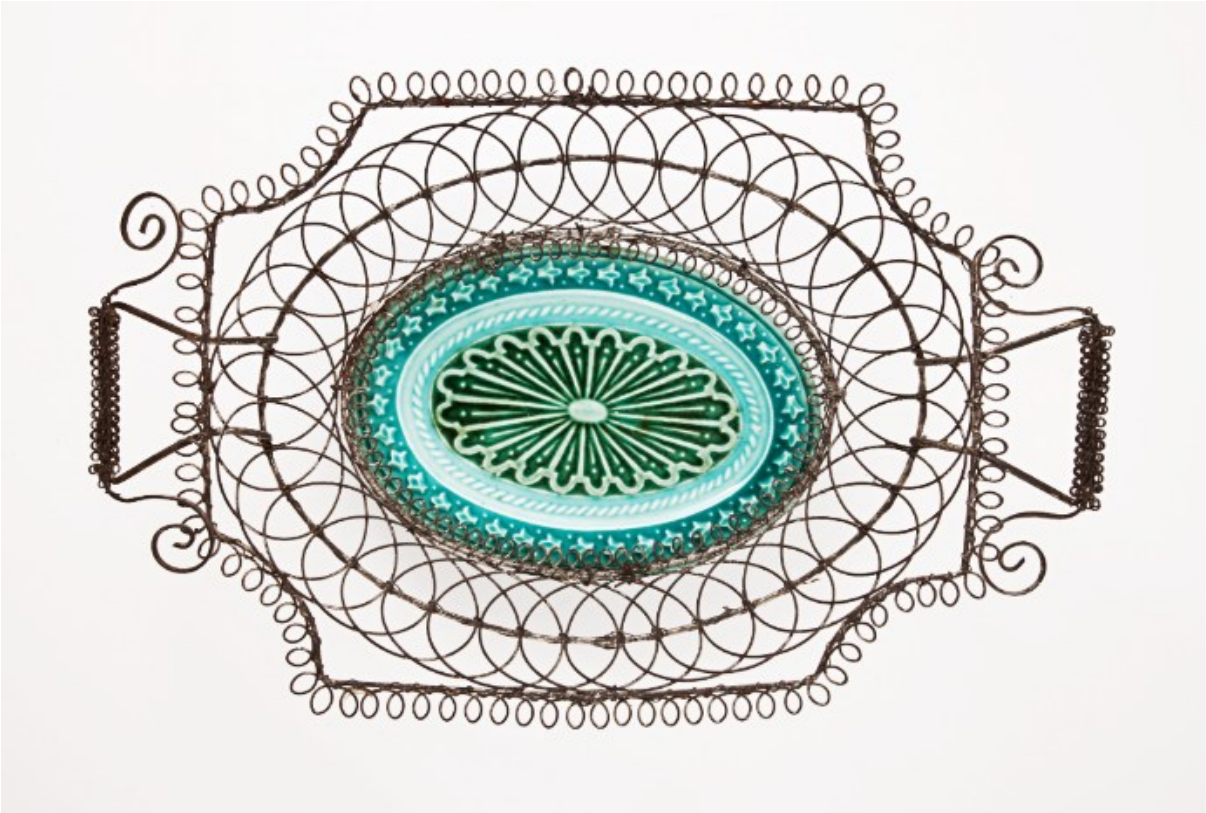
Figure 7

Baking utensils: a tool for pricking crisp bread, handmade from steel wire. Photo:Unknown
https://arkiv.guttormsgaardsarkiv.no/node/232/item/796



Figure 8

A handmade basket made of steel wire with a recessed glazed ceramic plate at the bottom. Photo:Unknown https://arkiv.guttormsgaardsarkiv.no/node/232/item/710



Craft workshop

Over four consecutive years (2022–2025), three-hour Romani wire workshops were organised for 60 master's students at Oslo Metropolitan University. Each year, two or three employees from Product Design have also participated. In a room adapted for craft activities, the session focused on creating two traditional items: a frying spatula also for use as a whisk, and a wire candle holder (Figures 9–11).

The ambience of the room, enhanced by the warmth of a fireplace, fostered an intimate learning environment. This setting demonstrates embedded cognition, where the acquisition of skills is not an isolated mental process but is situated within the social atmosphere and physical warmth of the room. The participants gathered closely around a large table with Elias, and basic materials were provided: rolls of steel wire, pliers (flat nosed and round nosed) and wire cutters. The image in Figure 12 depicts the friendly atmosphere and sets the tone of the session. The workshop was valuable to observe on two levels: Elias's technical methods of simultaneously transmitting Romani craft skills and cultural–historical

knowledge, and the students' experiences and learning outcomes related to both the craft and its cultural context. In the demonstration, copying is encouraged, but there is still room for personification.

Elias began by introducing himself, weaving a personal narrative with a broader historical context. He outlined key aspects of Romani history, particularly relating to his own family lineage and the historical importance of travel and trade for Romani communities. He reflected thoughtfully on his personal journey and integration into contemporary Norwegian society.

Figure 9

A frying spatula made of steel wire.

https://arkiv.guttormsgaardsarkiv.no/node/232/item/896

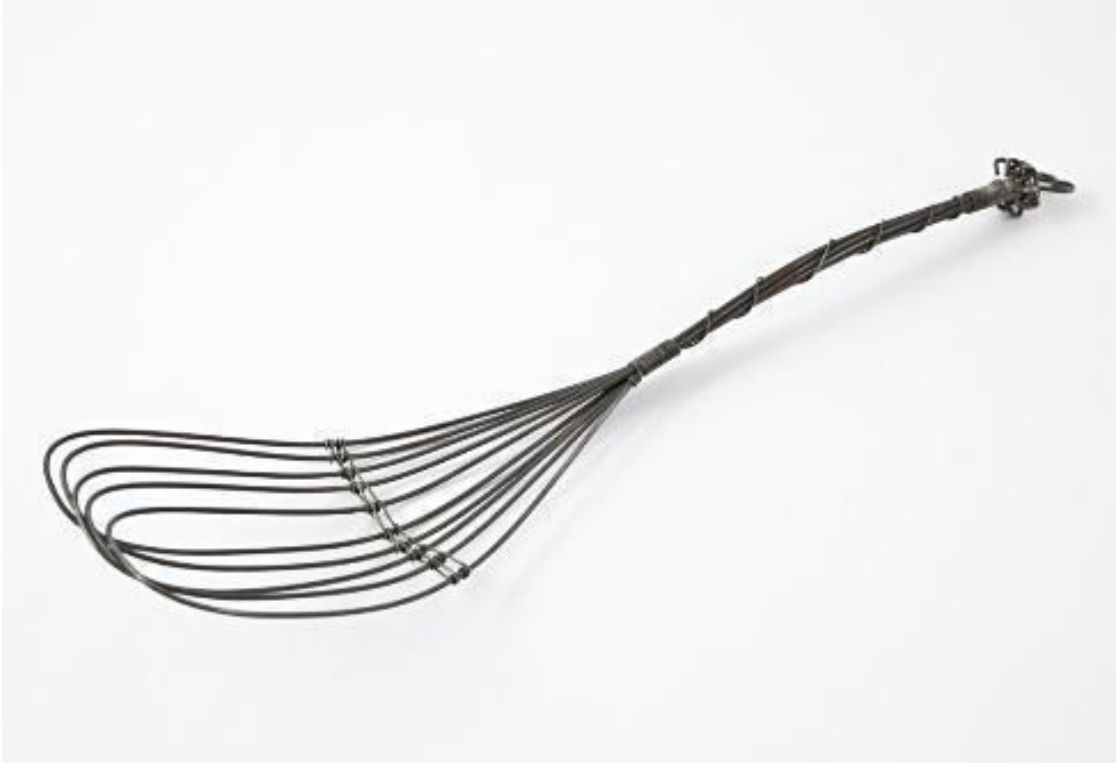


Figure 10

A handmade kitchen whisk made of steel wire.

https://arkiv.guttormsgaardsarkiv.no/node/232/item/1150#



Figure 11

A handmade candlestick made of steel wire.

https://arkiv.guttormsgaardsarkiv.no/node/232/item/1616



Figure 12

Wire workshop. The students were gathered closely around a large table with Elias Akselsen. Photo: A. Heimer.



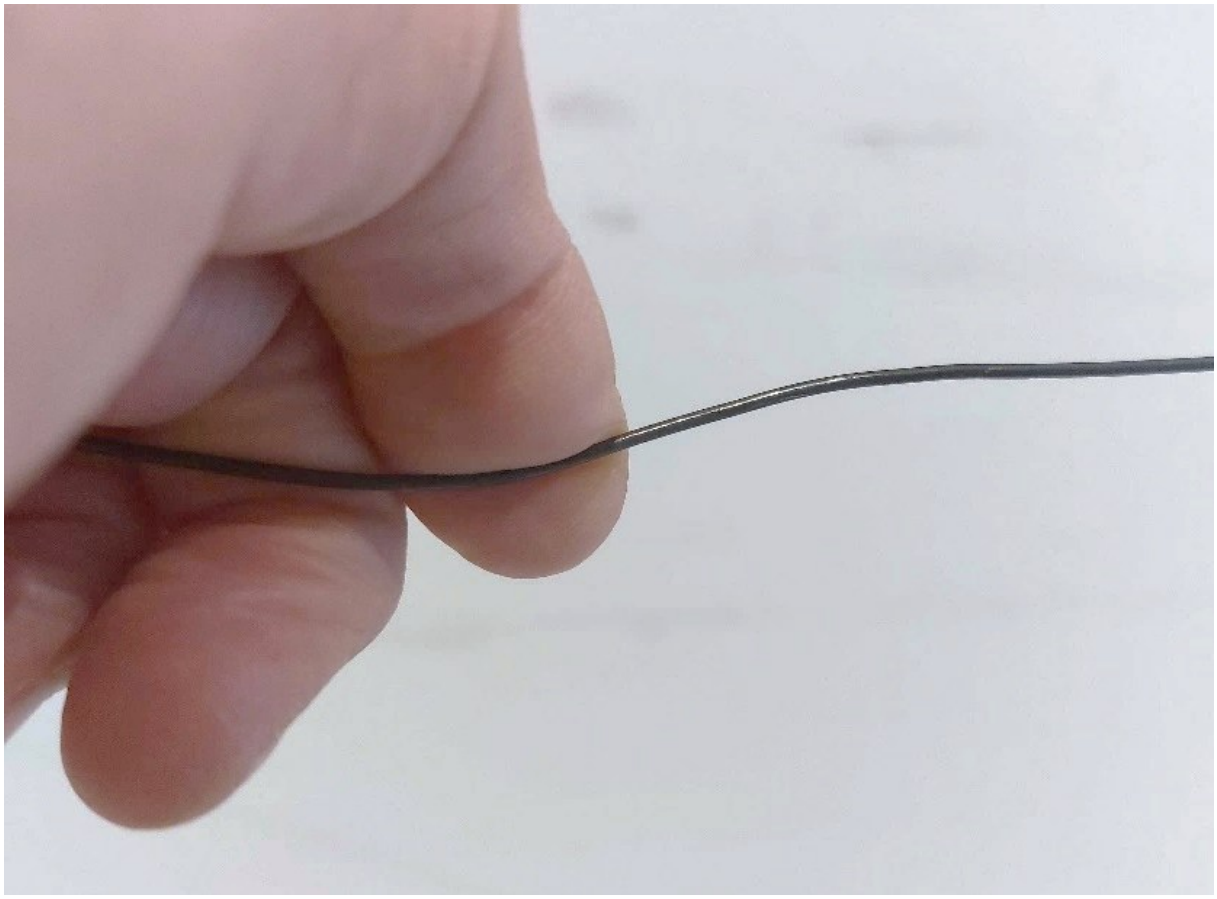
Elias demonstrates step by step how to create a characteristic whisk form out of five equally long wire rods. Straight wire rods are needed and are referred to in what follows as threads. For the Romani people, raw material was often found, and had to be stretched to create clear aesthetic form expressions typical of Romani wire craft. Another effect of stretching the wire is that it becomes thinner and more flexible, making it easier to bend and handle. We brought our own wire nests to the workshop (Figure 13). These were materials that Heimer had obtained at no cost following the closure of a company some years prior. The wire nests required a preparatory step to transform them into straight threads, which involved demonstrating the traditional technique for stretching wires (Figure 14).

Figure 13

Wire nests. Photo: A. Heimer.



Figure 14 *Photo of a wire being stretched (detail) (Figure 14). Photo: A. Heimer.*



Following Elias's instructions, the students attached the thread to two door handles and stretched it to its maximum extent. This activity can be compared to how Elias, as a young boy, stretched wire outdoors, e.g. between two trees. The process of stretching deepened the students' understanding of wire as a material for crafting. The expansion of the length of the thread was noticeable. The next step involved pushing the wire with one's two hands, sometimes by two people, to perceive the resistance of the metal wire and stretch it to at least 20% beyond its original length. The outcome is a more flexible wire for crafting. The thread is not as refined as the polished steel wire Elias uses nowadays, as seen in the photo (Figure 12). However, using cheap thread turned out to be a good introduction to wirework and a process in which the students enacted their learning through the perception–action loop of stretching. The act of stretching the wire serves as a clear example of extended cognition; the students offload the physical demand onto the environment (the door handles), effectively making the room itself part of their cognitive problem-solving process and allowing them to manipulate the material in ways their hands alone could not. Akselsen emphasised how this method ingeniously utilised the immediate environment and human strength, in contrast to reliance on machinery.

Figure 15

A whisk made of wire. Photo: A. Heimer.



Figure 16

The details of the whisk show how the five threads are joined in the middle with a short piece of metal wire and how the threads are then shaped symmetrically as a line structure that radiates outward from a central axis. Photo: A. Heimer.

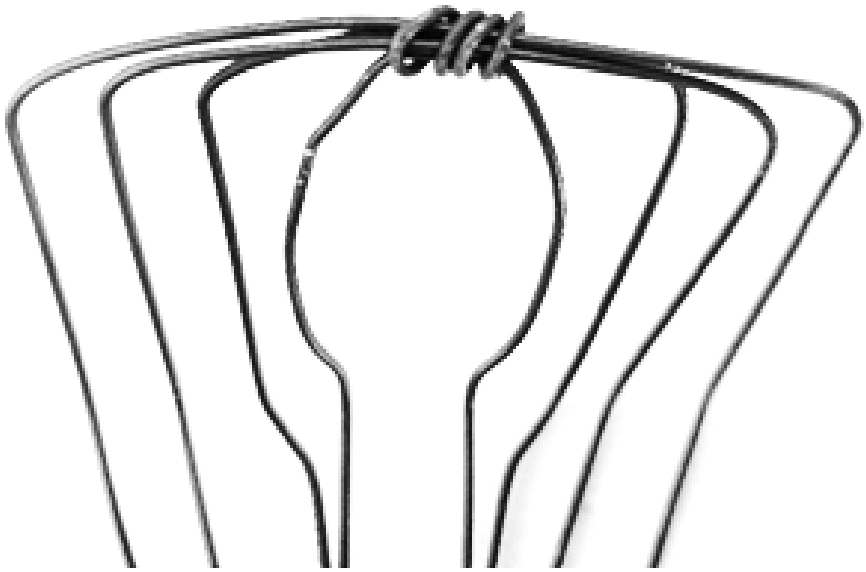


Figure 17

The details of the whisk handle show the joint of the 10 threads as a structure for the handle. Photo: A. Heimer.



Figure 18

The ornamental detailing involves shaping spirals at the ends of each wire. Photo: A. Heimer.



Analysed through geo-organic vision (Akner-Koler, 2007), the whisk becomes a study of physical and visual tension. The eight internal threads forming the handle serve as the geometric foundation, providing the necessary structural rigidity and functional strength. However, as the wires fan out to form the balloon of the whisk and as the outermost threads curl into decorative spirals, the form transitions into an organic expression. These spirals represent organic growth-like movements that soften the rigidity of the steel wire. This geo-organic interplay, in which the rigid, linear geometry of the raw material is manipulated by hand into organic curves, represents the embodied dialogue between the maker and the material.

Following Akselsen's lead, the students began replicating the objects, receiving direct guidance throughout. While they intended to follow his techniques closely, the nature of the handicraft allowed for subtle expressions of individual creativity. Despite the clear framework and firm criteria for the whisk, variations lie in the use of lines—whether straight, angular or curved—in the proportions of the handle. Drawing on this experience, some students also made miniature candle holders by replicating the main structure and functional joints. Other students introduced slight variations to the initial design, for example, by incorporating additional decorative spirals into the candle holders. This highlighted a productive tension within the learning process: the transmission of a traditional form alongside space for minor personal adaptations.

Participants' reflections

Reflections of the students on their workshop experience

In the post-workshop interviews, the participants described their hands-on wirework experience in terms that revealed a degree of paradox. While the material appeared simple, the students realised that precise wiring techniques were required to ensure the objects' structural integrity. One participant noted that the craft was 'more complex than [they] had previously thought', evolving from a simple association with childhood crafts to respect for a professional skill. The presence of Elias as a master craftsman also made history feel tangible and immediate. As one student observed, the workshop 'put a face' to the history lesson they had earlier in the day, making the intangible cultural narrative 'more tangible' through the act of making. This confirms the principle of enacted cognition, in which the students did not truly 'know' the history until they physically experienced experienced and percieved—the dynamic actions required to bend the wire. The storytelling was described as 'emotional', placing the technical working of wire into a 'bigger cultural perspective'. This direct engagement promoted a specific appreciation for alternative methods of historical preservation, with the students explicitly admiring the Romani method of 'passing down their crafts and stories verbally and physically, not by writing them down'. This reinforces the concept of *embodied historiography* (Mancia, 2025), in which the body and the material serve as the archive rather than text.

Finally, the specific history of the materials resonated deeply with the participants, particularly the ingenuity of taking raw material from farmers and selling it back to them as a refined tool. This act re-signifies the wire from stolen property into a product of skilled labour, highlighting a strategy of survival within an adverse economic context. The workshop also highlighted the tension between crafts and the modern economy. When asked if there were ways to integrate these insights into future projects, one student reflected on the structural difficulty of using these methods, noting that 'in a capitalist world, it's hard to make things in a less efficient way'. This observation raises the question of whether craft can be re-signified outside a capitalistic framework by attributing to it a value beyond efficiency. The resourcefulness of the Romani tradition, described by a student as the ingenuity of 'stealing a small piece ... and selling it back', offers a new perspective on material scarcity and survival. This historical strategy of adaptation serves as a counternarrative to modern mass production, suggesting that crafts grounded in scarcity and survival could be drawn upon to challenge current systems of consumption.

Reflections of Eric, artist and craftsman

Reflecting on the unique site of the Guttormsgaard Archive, Eric emphasised that the welcoming atmosphere strongly shaped how both the guidance and the collection were perceived. Several words came to mind when he reflected on the excursion. The first was *forlorn*, a feeling influenced by Elias's sobering account of the Romani people alongside the experiencing of products at the Guttormsgaard Archive. There were many products that we did not know the use of any longer. This made Eric reflect on knowledge about functionality. Given today's emphasis on technical approaches in design, hands-on knowledge is given less priority, and students often have little experience with tools and materials. They have ideas about design, but there is a lack of knowledge about how to make things. During the interview, Eric discussed the importance of encouraging the students to explore the features of materials and how they can be shaped. It is about how practical knowledge achieved through craft has value beyond the product created. Eric has observed that today, we often choose 'a quick route to the right answer'. From a practice-based view, this is contrary to craft, which, as craftsmanship, is a process that takes time. Eric defines craft as the act of making, while craftsmanship is the pride that one takes in doing craft. *Simplicity* is another term that comes up many times during the dialogue. The Romani wire workshop made Eric question the use of tools and the need for complex digital tools. It became clear to him how little one needed to create and understand form and function. In many cases, one can reach far with only a minimum of materials, such as wire, threads, fishing lines and simple tools such as pliers, in addition to knowledge about construction principles.

The impact of the excursion is reflected in Eric's introductory metalworking course for the first Product Design bachelor students. Simplicity is a key principle for him when introducing students to making. He is concerned with helping students develop their experience of making step by step, gradually moving towards greater complexity. He emphasises the process and encourages the students to explore it in depth by progressively refining their work. He is also mindful of allowing space for failure: 'If something does not work, it does not have to be thrown away; keep manipulating it'. As part of his didactic approach, he assembled a box of small hand tools (Figures 17 and 18). These tools proved valuable for the students because, just by looking at them, they realised that the work was within their reach. As one student put it, 'I can do this myself'. This realisation highlights a shift towards trusting embodied knowledge, where the hand and a simple tool become a single, extended cognitive unit.

Eric describes how he has continued to explore wirework technique, form and functionality, e.g. by refining the whisk—twisting the wire multiple times to make it sturdier. As seen in

the photo, this extra layer also enriches aesthetic expression (Figure 16). The whisk is an everyday product designed for whisking milk. The concept of simplicity prompted Eric to reflect on the ‘right to repair’, influencing his personal approach to repairing products at home.

Figure 19

Whisk with a double-layered stem. Photo: E. Nord-Kelly.



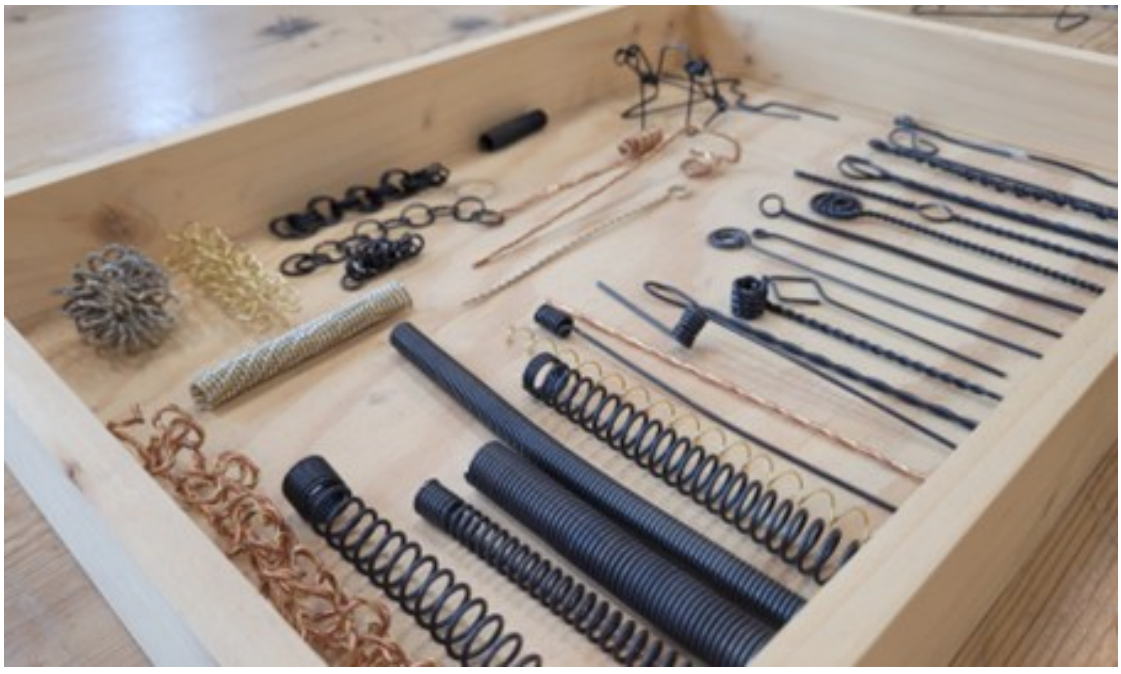
Figure 20

The toolbox developed by Eric for pedagogical reasons, demonstrating various wirework techniques. Photo: E. Nord-Kelly.



Figure 21

The toolbox developed by Eric for pedagogical reasons, demonstrating various wirework techniques. Photo: E. Nord-Kelly,



Through the excursion to the Guttormsgaard Archive and the wire workshop, Eric experienced 'a kind of conflicted understanding of this kind of craft'. He saw great potential for using this technique in both his teaching and private life, noting, 'Genuinely, this is one of the better courses I have been to in my life. It probably does not lead to career building compared to knowing how to run a CNC machine, but the technique is useful on so many other many levels'. He went on to describe the impact these experiences had on him, both professionally and personally.

Discussion

Making cultural heritage tangible through craft production provides an important dimension to design.

> Research can not only transform ways of designing or making artifacts, but also theoretically inform practice so that the practice can develop the practitioner's aesthetic intelligence, the results of which are craft objects that can be understood more easily by viewers (Nimkulrat, 2012).

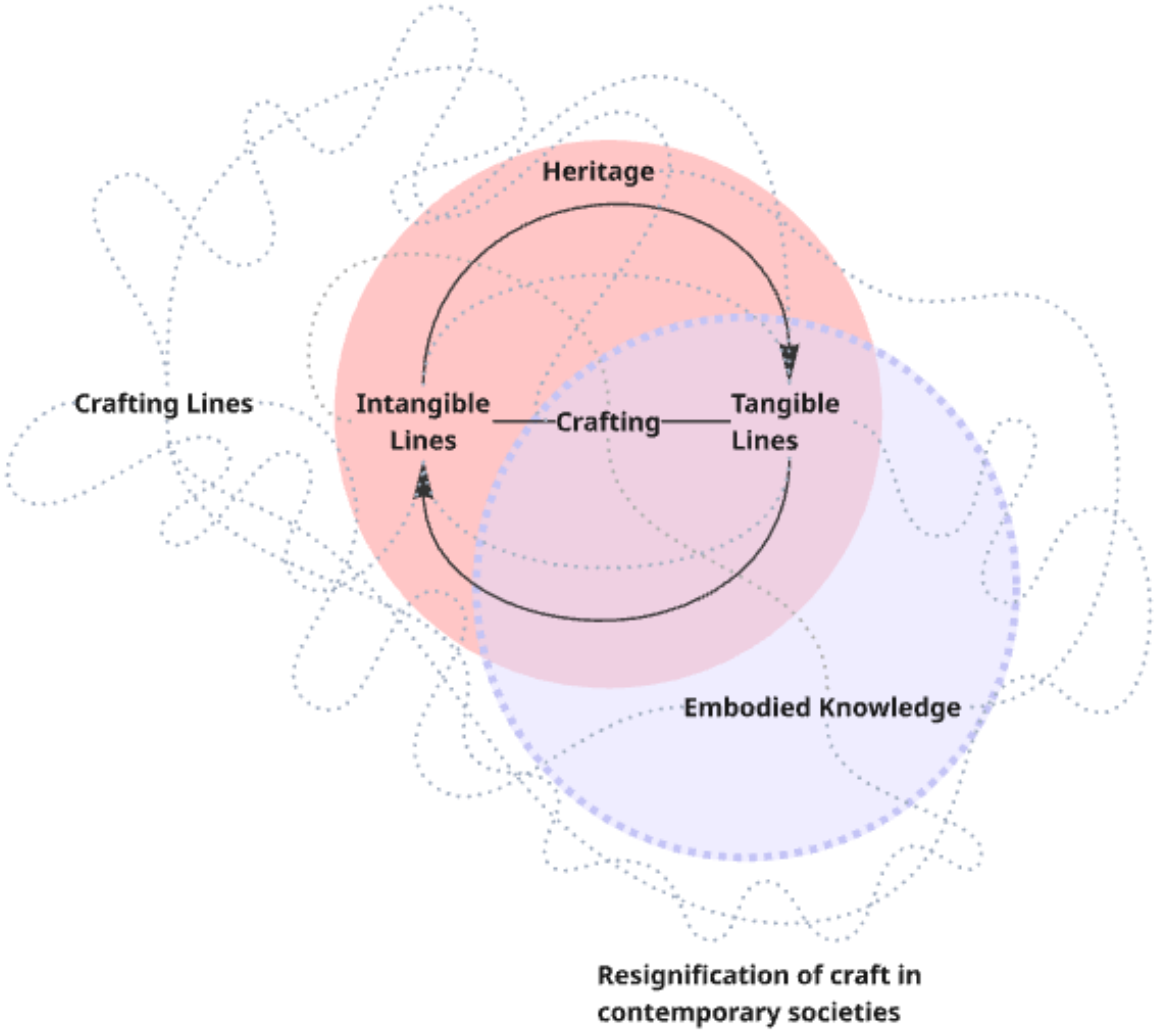
From the students' engagement at Guttormsgaard, their interest in studying the rich collection of products, experiencing the philosophy of the archive and learning about the circumstances of the products' creation was evident. The combination of making and listening enabled the students to appreciate the oral dimension of this heritage. Understanding the survival-driven origins of the products lends profound resonance to the material culture that surrounds us. This engagement directly illustrates Fallan's (2019) concept of design culture, successfully bridging design history with contemporary craft-based design. The previous study of the role of craft in design education shows that merging theory and practice can be challenging. However, drawing on the role of craft in design education has the potential to bring theory to life through hands-on workshops, 'while theoretical sharing usually has to be organised sharing about practical work [that] may happen more spontaneously' (Heimer et al., 2017, p. 119). This emphasises the importance of enhanced convergence between the head, the heart and the hand (Frayling, 2017).

Romani wirework, as demonstrated by Elias Akselsen, is characterised by the spatial manipulation of threadlike wire rods to form primarily open skeletal structures, such as whisks and candle holders. The very nature of wirework, with its linear forms and the narrative threads woven by practitioners, invites an analysis through the *lens of lines*. Examined through a geo-organic lens, the whisk's inherent forces are experienced directly via the resistance and flexibility of the metal thread, enabling the maker, consciously or subconsciously, to embody abstract geometric lines through material engagement and

agency (Heimer, 2020; Malafouris, 2013). The concept of lines, as explored in both geometry and Ingold's anthropological perspective, offers a productive framework for examining Romani craft traditions, particularly wirework. The tangible physical lines of the steel wire form the fundamental skeletal structure of objects, such as whisks and candlesticks. Their arrangement, according to geometric structural principles, dictates not only the object's form but also imbues it with a distinct aesthetic quality that is culturally significant within Romani traditions.

Figure 22

Crafting lines. A model showing the conceptual framework for how the concept of crafting lines functions as a re-signification of craft in contemporary societies. Model: Haizea Pérez Machin.



Following Ingold (2016), Elias's physical manipulation of the wire directly embodies the simultaneous sharing of personal and collective history. Crucially, it is the wire's material properties—flexibility, resistance and linearity—engaged through skilled hands, that transform the crafting process into a haptic dialogue. According to the 4E cognitive framework, history is embedded in the wire, knowledge is enacted through bending, and the cultural memory becomes embodied in the student's own hands. Thus, the wire craft becomes the medium through which cultural lines, narratives and heritage are made tangible, felt and passed on, allowing the workshop participants to engage directly with the story embedded in the wire craft. The story is not merely told alongside the making; it is felt and understood through the interaction with the wire's materiality, allowing the participants, as observed in the workshop, to engage with the story of the handcrafted products.

Merging these observations with Guttormsgaard's view of products as concepts travelling through time along their historical trajectories, this study proposes the concept of crafting lines. As shown in the model (Figure 19), crafting lines refers both concretely to the process of using metal wire to create a product and, metaphorically, to representing the transmission of and through lines within Romani culture. To fully grasp the dynamics of crafting lines, we need to understand that the relationship between *intangible lines* and *tangible lines* is not a linear sequence but a continuous, reciprocal loop. Ancestral knowledge, storytelling and cultural narratives (the intangible) provide the blueprint for the physical act of crafting, which materialises these narratives into physical forms (the tangible). In turn, interacting with these tangible objects and the haptic resistance of the wire itself reinforces, preserves and even reshapes the intangible heritage. The heritage, this looping interaction between mind, material and history, generates embodied knowledge. Through the lens of 4E cognition theory, this knowledge is both enactive, learned through the perception–action loop, and embedded within cultural history. Ultimately, it is this cyclical, embodied process that allows craft to survive across generations and continuously find new relevance and re-signification in contemporary society.

Within this framework, crafting lines encompasses the very act of stretching wire to achieve a specific aesthetic, embodied experience of the material's properties, among other examples. This can be understood as creating or following lines, a process that is simultaneously a material transformation and a cultural practice passed down through generations. Furthermore, crafting lines shows how the narrative threads woven by craftsmen such as Akselsen in the course of teaching become part of the object itself. They link the tangible product to intangible cultural heritage, embedding the object within what Ingold (2016) describes as ongoing stories and traces of human and non-human life. Thus, following Ingold, the *wire* in this practice, through its specific material qualities and the

gestures required to shape it, becomes part of the narrative lines of cultural identity and historical experience.

As previously noted, the physical transformation of rigid industrial wire into organic, flowing structures also serves as a potent metaphor for the Romani craft tradition itself. It shows how marginalised people confronted the rigid constraints of their economic reality and, through craft, transformed these limits into living cultural practices. From a craft-based embodied perspective, the authors question the NEB EU project's seemingly limited definition of aesthetics as confined to beauty. This also raises a critique of the underutilisation of aesthetics in contemporary design practice. The craft-based approach to aesthetics highlighted in this article, which is connected to the senses (Baumgarten, 2008) and to the 4E cognition theory of embodied, cognitive and material consciousness (Nimkulrat & Groth, 2024), offers significant value. Embodied consciousness and material engagement develop through aesthetic awareness. Experiences from crafting lines, both tangible and intangible, offer important phenomenological approaches to aesthetics, engaging with basic geometric forms as what Tin (2007) calls the *first forms.* Tin (2007) describes this embodied perspective through abstraction, human position and perception, evoking an aesthetic awareness of lines and describing the experience of the circle through the perception of the horizon:

> The horizon is a circle that encircles us: wherever we go, and how far we move, we will still be in the centre of the circle drawn by our personal horizon. But this horizon is also the support of the celestial vault; the highest point of this vault, where the blue sky is darkest, will always be found exactly above our head. (p. 287)

The concept of crafting lines also suggests that merging abstract and concrete comprehensions of form can broaden perspectives on aesthetics, extending its role in society beyond mere notions of beauty.

The crafting lines framework embodies the consciousness generated through engaging with craft, ensuring its vital continuity and re-signification in present-day society. It captures not only the immediate acquisition of skill and understanding—through which intangible cultural threads are woven into tangible material forms—but also the continued transmission of this knowledge. Through contemporary re-signification, the craft and the embodied wisdom it carries gain new meaning, securing the enduring legacy of these cultural and material lines.

Concluding remarks

This study reinforces the goals of contemporary initiatives, such as CraftHub EU and NEB EU, by demonstrating how an expanded use of aesthetics can foster both sustainability and

social inclusion. The study underscores the value of integrating cultural experiences of products and practice with theories to stimulate cultural sustainability, and demonstrates the re-signification of craft in society through cultural transmission. The wirework products seen at the Guttormsgaard Archive represent tangible crafted lines, demonstrating how a minimal use of material can result in functional yet ornamented forms. Akselsen's pedagogy, characterised by a seamless integration of storytelling with technical instruction, demonstrates Ingold's concept of lines as carriers of history and experience, making the cultural transmission tangible and immediate for the students. His instruction was not merely technical; it was contextual. The connections to intangible crafted lines as part of Romani travellers' culture enrich the meaning of the wirework and its aesthetic qualities. From this perspective, cultural sustainability represents experiencing how to utilise a material as a resource in a respectful and responsible way. An increased awareness of crafted products as bearers of culture deepens their meaning, potentially contributing to the longevity of both the objects and the traditions they represent. The framework for the course Design and Culture encourages students to merge theory and practice in new ways. Grounded in the material cultural context of the Guttormsgaard Archive, the excursion provided a creative space for studying products and crafting processes. It can also be described as a site for fostering aesthetic awareness, where students strengthen their knowledge and skills in reading products as carriers of meaning and cultural expression.

Applying Fallan's concept of design culture to this workshop shows how historical practices are actively re-interpreted and given new meaning. This perspective has also been valuable in analysing the students' and teachers' experiences during the Romani wire workshop and in understanding the deeper values embedded in such craft practices. Design students are often overwhelmed and experience the dilemma of making products in today's consumption-driven, materialistic society—one that contributes to a world full of products we do not need. In parallel with sustainable approaches to reduce consumption and the use of material resources, a cultural approach through crafting has implications for both practice and theory in further design studies. As noted by the students, insights from these crafting processes can directly contradict the efficiency demanded by *capitalistic* product design. However, this time-intensive engagement cultivates a crucial aesthetic awareness, as valuing material culture fosters reflective thinking in design students.

This study demonstrates how cultural exposure contributes to the comprehension and appreciation of products, and underscores the importance of time and space for interpretation. Learning about crafting techniques and contextual matters also has the potential to influence the designer's choice of materials in production. There is an important learning outcome: experiencing how little material is needed to create functional products. Learning about crafting and production born of necessity can offer a productive

counterpoint to new design, deepening creative processes through an attitude of care. It is, ultimately, a contribution to the craft of meaningful design.

The study is limited to one case study involving small groups of students and the three experts, Ellef, Elias and Eric. The topics addressed in this study should be further explored and expanded to strengthen research on craft in design and cultural sustainability. Further interdisciplinary research in the fields of design, culture, history and anthropology should be conducted to explore the broader potential of craft in knowledge making and cultural sustainability.

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