CONSERVATION OF LACE

TO CONSERVE AND SUPPORT GUIPURE LACE

Amanda Fredriksson

Degree project for Bachelor of Science in Conservation
15 hp
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Conservation of Lace – To Conserve and Support Guipure Lace

ABSTRACT

The purpose of this dissertation is to increase knowledge about how to best conserve and support broken bridges in guipure lace, a type of lace that has no net ground. The focus is to investigate what conservation methods and what conservation materials conservators use to support and conserve lace in general. Beyond this, some conservation methods and materials are tested and compared. A personal as well as a professional evaluation are made of the conservation treatments completed, based on aesthetics. A personal evaluation is also made based on the strength and workability of the materials and methods during the conservation treatments. A literature study and a questionnaire establish what methods and materials are commonly used for conservation and support of lace today and in the past. The dissertation does not, however, focus on the most common methods mentioned in the questionnaire and literature, but on the less common ones. The methods tested, focused on the bridges of the lace, to explore if it is possible to support guipure lace without a support fabric in an easy and more aesthetically pleasing way. Two stitching methods, both based in lacemaking, were chosen, and tested with three different threads (cotton and linen thread as well as Mouline embroidery floss). A total of six treatments were undertaken with varying results. However, the results show that it is possible to support guipure lace without using traditional conservation techniques.

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Preface

During my internship at the Royal Armoury in Stockholm, I got the opportunity to work with and study multiple costumes with different types of lace from the 17th to 20th century. The issues with conservation of lace became quite clear as I spoke to my supervisor who had, in the past, struggled with conserving and supporting a specific type of lace. In her case, it was a silver strip lace attached to a robe which once belonged to King Karl XI. This lace does not have a bobbin net ground, making it harder to support in a satisfactory way, as a net ground allows for easier conservation treatments, where a support fabric, such as tulle, can be hidden under the net ground. My supervisor also mentioned the lack of easily available literature on the subject. So, I decided I would attempt to take a deeper dive into what literature currently exists on the conservation of lace, what methods and materials are used for the conservation of lace and how some of those methods and materials work in practice.

I would like to take the opportunity to thank some people who helped make this dissertation happen.

Firstly, I would like to thank my supervisor Johanna Nilsson for your invaluable support and your knowledge. Thanks for the ideas, advice, feedback, and quick responses to my many, many emails.

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And lastly thank you Joshua, my love, for taking care of me, and for proof-reading, even if its long and a bit dry at points.

CONTENTS

1. Introduction

1.1. Lace

Pat Earnshaw (1994, p. 7), author of several books on lace, simply and effectively, defines lace as being "a lot of holes surrounded with thread", although, lace is more commonly described as an ornamental openwork fabric, made by looping, twisting, knotting, or plaiting by hand or machine (Landi, 2002, p. 20; Farrell, 2007, p. 6; Oxford English Dictionary, 2021; Earnshaw, 1994, p. 7). There are two types of handmade lace, needle lace and bobbin lace. Needle lace, or needlepoint, developed from drawn threadwork and cut work embroidery in the 16th century, it is made by sewing the lace design with needle and thread, often using a basic buttonhole stitch. Bobbin lace developed from weaving (Earnshaw 1994, p. 8) and is made by twisting and knotting threads around pins which are set out in a preconceived design on a round bobbin pillow (Landi, 2002, p. 30). As technology advanced in the late 18th century, machines were created to produce woven textiles and in 1809, John Heathcoat (1783-1861) invented a machine which could manufacture bobbin-net. By the 1840's, handmade lace patterns could be made by machine, making lace cheaper and more accessible to people on lower incomes, not only the upper classes (Earnshaw, 1994, p. 17; Farrell, 2007, p. 6; Tortora & Marcketti, 2015, p. 331).

1.1.1. Guipure Lace

Guipure lace was, according to Earnshaw (1994, p. 154), "originally a lace of narrow parchment tapes whipped round with silk or gold or silver thread". However, over time the meaning has changed, and guipure lace is now considered to be any lace, where the toile (pattern) of the lace is joined by brides, bridges, or bars. These brides, bridges or bars are thin strands, either bobbin or needle made (fig. 1) (Farrell, 2007, p. 35; Earnshaw, 1994, p.153). In this dissertation the brides, bridges or bars will be referred to as bridges.

Figure 1 Needlework bridges, buttonhole stitched.

1.2. Related Research

The research about conservation of lace is sparse but research about conservation and support of lace with a guipure ground is even sparser and few articles or books discuss it in depth, if at all. Bevan O'Daly's (2017) masters dissertation *Exploring Supplementary Methods for the Conservation of Lace* is the most recent extensive literary source about the conservation of lace. In her dissertation she explores and evaluates two supplementary methods for supporting lace, one for a net-ground lace and one for a guipure ground lace, comparing them to methods currently used for supporting lace in textile conservation. César Rodríguez Salinas *et al.* (2020) article *Interdisciplinary research into the materials and degradation processes of an eighteenth-century robe à la française,* discusses the analytical research and treatment of a robe à la française, which partly consists of a bobbin lace. As the original bobbin lace was supported by a degrading rigid mesh structure, finding new support fabrics and adhesives were important and multiple support fabrics and adhesives were tested for their long-term stability, flexibility, and visibility before choosing the final selection.

Sheila Landi's (2002) book *Textile Conservator's Manual* is an in-depth source of information about textile conservation practices. The book is one of few that discusses the conservation of lace. Landi expresses the difficulty in repairing lace satisfactorily but gives a couple of examples of methods to use. In *Conservation & restoration work in the Textile-Preparation Workshop in 2014/2015,* Mihaela Grčević (2015) describes, in short, conservation treatments completed on several objects, including a woman's cap with lace decorations. The text is short but does provide another method of lace conservation. All methods mentioned in the previous research, except O'Daly (2017), are applicable to lace with a net ground. They all use a tulle or a net to support and conserve lace.

Other literature, which is not necessarily about the conservation of lace, but about lacemaking and care of lace, has not been included in the literary research for this dissertation. However, books such as Elizabeth M. Kurella's *Anybody Can Mend Lace and Linens* from 2001, would most likely have been an excellent source for more creative ways to mend broken lace, as mentioned by O'Daly (2017, pp. 29, 113), who was inspired by the techniques mentioned in the book[1]. O'Daly (2017, pp. 26-31) demonstrate a more extensive literary research, both on the conservation of lace and on non-conservation-based literature about the care of lace.

1.3. Research Objectives and Questions

The purpose of this dissertation is to increase knowledge about how to best conserve and support broken bridges in guipure lace, a type of lace that has no net ground. The dissertation will be a compilation of conservation literature on the subject and the conservation methods collected through a questionnaire. In addition to the literature study and questionnaire, an experimental study will be executed where two conservation methods will be tested and compared on several materials. The aim is that the literature study on the subject, and the results of the experimental study, will be a resource to textile conservation professionals in their work with guipure lace.

The focus of the dissertation is to investigate what conservation methods and what conservation materials conservators use to support and conserve lace in general. Beyond this, some conservation methods and materials will be tested and compared, and a personal as well as a professional evaluation will be made based on aesthetics of the conservation treatments. A personal evaluation will also be made based on the strength and workability of the materials and methods during the conservation treatment. The re-treatability and noticeability of the treatments will also be discussed.

The research questions are:

- What methods and materials are being, and have been, used for conservation and supporting lace?
- Are there any methods used in lacemaking that can be applied to support broken bridges in guipure lace?
- How do those potential methods and materials work in practice?

1.4. Method for Research

This dissertation is based on a literature study, a questionnaire, and an experimental study. The literature study mainly focused on conservation specific literature, dissertations, and articles.

[1] As the book is not available to buy or borrow in Sweden and would have to be sent from the USA, it would not have arrived before the completion of this dissertation, due to the current situation with the Covid-19 pandemic increasing shipping times.

The questionnaire was sent to Svenska föreningen för textilkonservering (SFT) (the Swedish Association for Textile Conservation) and ICOM-CC Textile Working Group (ICOM-CC TWG) as well as being posted on the American Institute for Conservation (AIC) and Foundation for Advancement in Conservation's (FAIC) Global Conservation Forum – ConsDistList. A total of 54 replies were collected.

The experimental study focused on two methods collected from the literature study as well as the questionnaire. These methods were chosen, not because they are common methods used by conservators today, but because they are uncommon. The mention of net, tulle and other backing fabrics was common amongst questionnaire participants, as a way to support lace, but these materials do not necessarily match the appearance of lace without a net ground. Guipure lace does not have a net ground but is joined together with bridges. Although the methods chosen for this study are uncommon, the materials used are not. The conservation materials chosen are all frequently mentioned in the questionnaire (see 3. Questionnaire).

The results of the three methods for research will be discussed throughout the dissertation and are not collected in one chapter. The results and conclusions are then discussed in the final conclusion and discussion (see 5. Conclusion and 6. Discussion)

1.5. Limitations

Even though the questionnaire asks how the participating conservators would conserve and support lace in general, the experimental study only investigates how to conserve and support broken bridges in lace with a guipure ground, as studies on the conservation of guipure ground lace are lacking. The reasoning behind this decision is that a more extensive study would be too big to comprehend at this level of education. The range of methods and materials tested, as well as the number of participants in the evaluation of aesthetic results of the treatments, have therefore been limited, due to lack of time and resources. For example, silk thread and polyester thread was not used in this study as no good match could be found and shipping times were too long, due to these limitations the results themselves are also limited. There could have been more effective methods and materials discovered without the limitations.

1.6. Ethical and Theoretical Perspective

Reversibility is a concept that is often discussed in documents about conservation ethics (E.C.C.O., 2003, p. 2; ICOM, 2017, p. 15). The concept of reversibility, however, is quite a difficult notion to understand. Landi (2002, p. 5) states that, "Everyone concerned in the profession agrees that no method should be used that is not reversible, but in recent years it has been more freely admitted that theoretical reversibility does not always translate into practical possibility". Salvador Muñoz-Viñas (2005, p.188) similarly states, "[…] there is no such thing as a 'reversible' treatment, but rather treatments that are 'quite reversible', or 'slightly reversible', or 'very reversible'". Meaning, the issue with "reversibility" is never as simple as a treatment being reversible or irreversible. An example of a treatment that is 'very reversible' is stitching in textiles and lace conservation. Stitching is seen as one of the more reversible treatments, whereas a treatment using adhesive, which in theory can be reversible, is only 'slightly reversible'. A conservation treatment can, in theory, be reversible, but the object which the treatment has been carried out on can never fully go back to the state it was before the treatment was carried out (Muñoz-Viñas, 2005, p. 185). If a

treatment is reversible or not can, therefore, not be answered with a simple "yes" or "no", but there are degrees of reversibility (Appelbaum, 1987, p. 71). Perhaps that is why Article 9 of the E.C.C.O. Professional Guidelines (II) Code of Ethics (2003, p. 2) states "[…] [the materials used during conservation] should also be compatible with the materials of the cultural heritage and be as easily and completely reversible as possible".

According to Caple (2000, p. 63) reversibility as a concept was adopted into the field of conservation in mid-twentieth century, when objects, which were affected negatively by the conservation treatments done in the previous century, started reappearing in conservation laboratories. However, in the 1970's it became gradually apparent that practically no treatment is entirely reversible. By the 1980's terms like minimal intervention and re-treatability started to replace the term reversibility. Caple (2000, p. 64) states "Whilst reversibility was clearly not a realistically achievable aim, […], the desirability of being able to undo conservation work and then re-treat it at some point in the future clearly remains a desirable goal". He goes on to say that the concept of reversibility continues to be a valid conservation goal if it is considered as meaning re-treatable. Relating this to stitching in textile conservation, the stitches are usually easily removed, and the object is then re-treatable, but the holes made by the needle and thread and/or the potential strain the stitches have on the object will not be reversible. So, reversibility is not a realistic notion, as no intervention is fully and completely reversible. But if reversibility instead is looked upon as meaning re-treatability, an intervention can be carried out on an object as long as it does not hinder any future conservation treatments (Appelbaum, 1987, p. 67; Caple, 2000, p. 64; Muñoz-Viñas, 2005, p. 187).

For a conservation treatment to be re-treatable, it must be detectable. But a conservation treatment should not change the aesthetic integrity of an object. Muñoz-Viñas (2005, p. 66) writes in reference to Clavir (2002), "aesthetic integrity describes the ability of the object to produce aesthetic sensations upon the observer; if this ability is modified or impaired, the aesthetical integrity of the object is thus altered". I.e., if a conservation treatment is altering the aesthetics of an object, the object's aesthetic integrity, or value, might also be altered. According to Article 5 of the E.C.C.O. Professional Guidelines (II) Code of Ethics (2003, p. 2), "The conservator-restorer shall respect the aesthetic, historic and spiritual significance and the physical integrity of the cultural heritage entrusted to [their] care". Therefore, a balance between the stabilisation and conservation of an object and the aesthetic integrity must be found (Caple, 2000, p. 108). Here, the "six-foot, six-inch rule" (approx. 183 cm, 15 cm) could apply, where a conservation treatment is "invisible" when standing about six feet away but should be easily detectable when examining it from six inches away (Appelbaum, 2007, p. 242; Hartog, 2009). Ways to do this might be through using different materials from the original, or if using the same materials, using different methods than the original when attaching the new material, that way the conservation treatment can be detectable (Appelbaum, 2007, p. 330). Appelbaum (2007, p. 242), also argues that adding a new material when doing a conservation treatment will change the object. But if the treatment is done on the reverse or the interior of the object, and therefore does not alter the visual appearance of the object, the treatment can be seen as successful, an approach applied to one of the methods used in this study (See 4. Experimental Study). Thus, the treatment will be detectable and therefore, depending on type of treatment, re-treatable.

The methods and materials used in this study were chosen with these perspectives in mind. The methods and materials described in 4. Experimental Study are all theoretically re-treatable as well

as detectable. The detectability and re-treatability of the methods completed in the experimental study will be discussed later in the dissertation (see 6. Discussion).

2. Literature Study

2.1. Supporting Lace

Bevan O'Daly (2017) explores a few supplementary methods for supporting lace. She concludes that for a net ground lace, the supplementary methods of net darning technique and producing a new bobbin lace patch for the damaged area provides sufficient support and does not disturb visually compared to the more common conservation methods where nylon net and/or tulle is used. The disadvantage with the new methods, however, is the time consumption both in application and if the procedure was to be reversed. The bobbin lace patch technique might, she says, be better with larger areas of loss (O'Daly, 2017, p. 43-75). For the guipure ground, two supplementary methods were also completed and then compared to treatments made with different support fabrics. Firstly, a method where a water-soluble film was used to create an in-fill for the guipure ground lace. Nylon net sandwiched between two pieces of the water-soluble film sand acted as a substrate for the machine-embroidered in-fill. When the in-fill was made, the water-soluble film was dissolved, the nylon net was trimmed away, and the in-fill could be sewn onto the guipure lace. Secondly, a method where a bridge made of two strands of embroidery floss was laid over the broken bridges, or where bridges were missing, and sewn into position with buttonhole stitching. Both methods were non-intrusive in their visual appearance. The substrate technique, however, O'Daly considers, might be better for bigger in-fills while the technique using the embroidery floss is better for smaller repairs (O'Daly, 2017, pp. 97-113).

Sheila Landi (2002) examines conservation of all textiles, including lace, and discusses everything from washing, drying, and flattening to support, handling, and storage. She states, "Lace is very difficult to repair satisfactorily without modifying to some degree the effect of being suspended in air" (Landi, 2002, p. 138), which might be the reason why lace is seldom discussed in the literature. Landi does, however, give a couple of examples on conservation methods that supports lace with tears and holes. The simplest repair, according to Landi, is when there are holes torn in the net ground of a lace. She explains,

> "Pin out a piece of net of similar mesh to the original over the access hole, making it fairly taut […]. Place the damaged lace on top and line up the original mesh to follow through and baste together. Work […] with a very fine needle and thread, and link the intersections of the new and old lace with a double row of stiches worked around the hole. A form of buttonhole will keep firm without having to pull tightly on the thread. Apply a thin line of SCMC adhesive before cutting away the excess net as close to the outer row of stiches as possible." (Landi, 2002, p. 138).

This procedure was, however, executed on a different type of lace than the lace examined in this dissertation. A method more specific to a type of lace without a net ground is also discussed, here nylon tulle is used to hold together sections of lace that need support. The nylon tulle would then be fastened with a fine thread which would run lengthwise along the piece of lace. This method has, according to Landi (2002, p. 139), the least possible visual disturbance.

César Rodríguez Salinas *et al*. (2020) discusses an extensive analytical research they carried out on an eighteenth-century robe à la française at the Kunstmuseum Den Haag, Netherlands, in order to establish a treatment plan for the robe. The research focused on the deterioration of the fabric, lace and other decorative elements which were fragile and experiencing material loss. Several tests were conducted to determine the cause of degradation with varied results. Focusing on the bobbin

lace for the purpose of this dissertation. The bobbin lace was supported by a rigid mesh. The mesh got its rigidity from a starch adhesive coating, but, as the adhesive is an organic material it had degraded through exposure to ultraviolet light. The degradation of the lace, and the mesh, was therefore due to the adhesive coating breaking down, making the lace and mesh degrade with it. The conservation treatment could then be determined for the dress. The lace needed new support; this was given by using a nylon net which was dyed to match the colour of the bobbin lace. The nylon net was then covered with a layer of the reversible archival paper-laminating adhesive Evacon-R, to give the bobbin lace its new support. The conservation treatment was, according to the authors, satisfactory.

Grčević (2015, p. 158) describes in short, the conservation treatment of a woman's cap with lace decorations. The lace had previously been restored, but these interventions were removed (it is not clear why they were removed). The lace was then relaxed by laying it on a thin polyester film sheet, Melinex®, which was covered with a dampened blotting paper and another layer of Melinex® sheet. When dry, the damage in the lace was padded with a thin tulle which was backstitched on with silk filaments. The treatments are not explained in more detail in the original document than expressed here.

Comparatively, the methods described by Landi (2002), Rodríguez Salinas *et al*. (2020) and Grčević (2015) are relatively similar, all three use a nylon net/tulle to support the lace. What Grčević does not do, however, is to use an adhesive which the other cases did. In Landi's case, only a thin line of adhesive was used while Rodríguez Salinas *et al*. used a coat of adhesive on the whole piece of nylon net. The adhesives used in both cases are, in theory, reversible, however, the reversibility of adhesives on textiles has, at least in the past, been an issue in itself (Hillyer *et al*. 1997, p. 43). The reversibility of Evacon-R is not discussed deeply in the Rodríguez Salinas *et al*. (2020, p. 254) article, it only describes that the adhesive is a "reversible paper-laminating adhesive". This is the same for the SCMC adhesive used by Landi (2002, p. 138). According to a survey completed by Hillyer *et al*. (1997, p. 43), one participant stated that "[…] although the adhesive may be reversible in theory, it may not be possible without some loss or damage". The survey was done in 1994-1995 meaning techniques and the reversibility of adhesives may have advanced since then, but no easily available literature has been found on the subject.

O'Daly's (2017) dissertation is the only conservation literature that specifically mentions methods for supporting guipure lace. One of the methods mentioned by her, the embroidery floss method, will be tested in the experimental study (see 4. Experimental Study).

Elizabeth M. Kurella (2014) writes on her blog, *Elizabeth M. Kurella – Curator of Antique Lace,* a blog post about the repair of a set of headdress streamers. After gently hand-washing the piece, and carefully ironing it, Kurella stabilises the breaks, where the mesh has detached from the clothwork in the lace. She does this by using "[…] thread as fine or finer as that used to work the lace originally. Just a couple of looping buttonhole stitches fills the hole". The looping buttonhole stitches are made to mimic the mesh. In another broken area, where a thread has broken and frayed instead of just detached, she would "use an extremely fine needle and thread to wrap, knot and secure the loose ends then make a couple of loops to mimic the mesh", this is to keep the thread from fraying further and to not strain the existing mesh. According to Kurella, the key to making a good repair is to fill the broken areas with the same lines and spaces that makes up the lace pattern and mesh.

Other literature, which is not necessarily about the conservation of lace, but about lacemaking and care of lace, apart from the blog post by Elizabeth M. Kurella (2014), has not been included in the literary research for this dissertation. However, books such as Elizabeth M. Kurella's *Anybody Can Mend Lace and Linens* from 2001, would most likely have been an excellent source for more creative ways to mend broken lace (O'Daly, 2017, p. 29), but as mentioned previously could not be sourced.

3. Questionnaire

3.1. The Questionnaire

To determine what methods and materials conservators use, and have used, to support and conserve lace, a questionnaire was created. The questionnaire consisted of six questions (see questions below). The questionnaire was sent to SFT and to ICOM-CC TWG. The questionnaire was also posted on the AIC and FAIC's Global Conservation Forum (ConsDistList) to ensure as many as possible would answer. The questionnaire, which was a qualitative study, was sent out in Swedish (to the SFT members) and in English (to ICOM-CC TWG and ConsDistList). As the goal was to find out what methods and materials had been used, employing multiple choice questions was not an option and instead the questionnaire mostly consisted of open answer questions. The information from the questionnaire was transferred to tables, allowing a quantitative interpretation to be performed, but could also be analysed more closely meaning qualitative data could also be drawn from it. (Trost & Hultåker, 2016, p. 21).

Questions:

- Do you have experience conserving lace? (yes/no)
- What methods and material have you used to conserve and/or support lace in the past and now? (If possible, please provide approximate year of treatment)
- What criteria do you find most important when choosing methods and materials?
- If you were to conserve and support the lace in the photo, what methods would you use? What materials would you use for the conservation treatment? (This is a museum object which will be exhibited in a display case on a board at an angle of about 20 degrees).

Figure 2 Photo 1 in the questionnaire. Photo: "LaceCollector" (wants to remain anonymous).

- If you were to conserve and support the lace in the photo, what methods would you use? What materials would you use for the conservation treatment? (This is a museum object which will be exhibited in a display case, mounted on a mannequin).

Figure 3 Photo 2 in the questionnaire. Photo: Augusta Persson.

- Have you had experiences when the methods or materials chosen did not give the intended results?

3.2. Questionnaire Results Summary

The questionnaire had 54 participants, 32 answered the Swedish survey and are all members of the SFT (the questionnaire was sent to 67 SFT-members). The remaining 22 participants are from members of the ICOM-CC TWG as well as from the Global Conservation Forum's ConsDistList. In the Swedish version, 15 of the participants answered yes to the first question about if they had conserved and supported lace. 3 participants answered no or did not answer the first question but still gave suggestions on what they would do when conserving and/or supporting lace. 14 participants only answered no (table 1). In the English version 21 of the 22 participants answered yes on the first question, as it is likely that most participants are from the Global Conservation Forum. This is not surprising as the participants would have clicked on the questionnaire link only if they had conserved lace. All participants have been given a number in the order the questionnaire forms were retrieved.

1. Do you have experience conserving lace?

Compilation of both questionnaire's answers:

Table 1 Replies to first question in questionnaire.

Answer	Total
Yes	36
No	17
Did not answer	1
Total	54

2. What methods and material have you used to conserve and/or support lace in the past and now? (If possible, please provide approximate year of treatment)

Not everyone provided the approximate year of treatment, but the earliest treatments mentioned was carried out in the 1990's. However, most treatments were carried out in the last 10-15 years.

The second question had a big range of different answers. The most common method, however, was that the lace had been supported using stitching, either with or without a support fabric, which 23 participants mentioned. Participant 30 describes, "Stitching with thread (often linen thread), sometimes in combination with silk semi-transparent fabric/polyester semi-transparent fabric/nylon net" (translated from Swedish). 20 participants described stitching the lace onto a support fabric. 3 participants mentioned stitching the lace to its original backing, 1 participant mentioned stitching the lace onto a support board. 3 participants mentioned they had used stitches to support/re-make bridges. Participant 4 describes, "[…] I have also used stitching to make bridges and secure lace on a tablecloth […]". Participant 23 describes, "[…] I also stitched/threaded thread where "bridges" had broken off or were broken".

Table 2 Compilation of support fabrics mentioned in question 2.

Support Fabric	Total
Nylon, silk or "fine conservation" net	12
Silk crepeline or crepeline	9
Nylon, cotton, or just bobbinet (specifically mentions: Dukeries)	8
Nylon, silk, or just tulle	8
Silk or polyester transparent or semi-transparent fabric (specific mentions, Stabiltex)	4
Filet net	1
Cotton fabric	1

The use of a net as a support fabric was mentioned 20 times. The most mentioned net being a nylon, silk, or fine conservation net, mentioned by 12 participants. Participant 4 describes, "I have used nylon net and stitching in

order to support a lace fan". The remaining 8 mentioned a nylon bobbinet, cotton bobbinet or bobbinet, four of the participants specified using a bobbinet from Dukeries Textiles and Fancy Goods Ltd. 8 participants described using silk or nylon tulle as a support fabric. 9 participants described using silk crepeline or crepeline and 4 participants described using a transparent or semi-transparent fabric in either silk or polyester, such as Stabiltex (an open-weave polyester fabric, see 4.2.2. Thread) which one participant mentioned specifically. 1 participant mentioned using a cotton fabric. (table 2)

8 participants described what type stitches they used. 3 participants mentioned using a blanket stitch (swe: langettstygn). Overcasting stitch (swe: kaststygn), support stitches (swe: redningar) and running stitches (swe: förstygn) were mentioned twice each. "Basic stitch" was mentioned once. Participant 24 describes "[…]. I laid new nylon tulle behind the hole and worked with rows of stitches on the diagonal to ensure the stitches would become as invisible as possible (translated from Swedish)". Participant 23 describes "I used running stitches or overcasting stitches to sew it to the net. I also used blanket stitches/buttonhole stitches to secure […]" (translated from Swedish). 1 participant described using a darning technique. (table 3)

Table 3 Compilation of stitches mentioned in question 2.

Type of stitches	Total
Blanket stitch	3
Overcasting stitch	2
Running stitch	2
Darning stitch	1
Couching stitch	1
Support stitch	2
Basic stitches	1
Diagonal rows of stitches	1

The threads used for stitching also varied, 9 participants described using silk thread, hair silk being the most mentioned, followed by silk filament, sewing silk (swe: sysilke), conservation silk (swe: konserveringssilke), very fine silk, all mentioned once each. A non-specified silk thread was mentioned twice. Cotton thread was the second most mentioned type of thread, 7 participants had used cotton thread, which was in some cases described as "thin" cotton thread and in one case more specifically described as Belgian cotton thread by participant 17. Other threads described were linen thread, mentioned 6 times, polyester thread, mentioned 3 times and embroidery thread, mentioned once. (table 4)

Table 4 Compilations of threads mentioned in question 2.

Type of thread	Total
Silk	9
Cotton (specific mentions, Belgian cotton)	7
Linen	6
Polyester (specific mentions, Gütermann Skala)	4
Hair thin thread	1
Embroidery thread	1

Other methods mentioned include a sandwich method in which the lace would be sandwiched between either crepeline, mentioned by 2 participants or a bobbinet, which 3 participants described. Participant 8 describes, "Sometimes I've had to sandwich the lace between layers of the bobbinet and sometimes I've dyed the bobbinet to match the lace". Participant 23 similarly describes, "I have stitched a black silk bobbin lace from the 1650's onto crepeline. Then a couple of years later I remade the conservation treatment and sewed it in crepeline like a sandwich in crepeline (translated from Swedish)".

6 participants did not describe a specific method but only mentioned the materials used when supporting lace.

3 participants mentioned other treatments, such as cleaning, bleaching, and flattening but as this dissertation only will discuss the support of lace, these answers will not be discussed further. One participant mentioned the use of bulked acrylic paint as a way to re-create patterns on top of net.

Interestingly, 2 participants described using more traditional lace making techniques and materials for the conservation of lace. Participant 14 explains, "When choosing materials to repair and restore lace I have always attempted to source the closest material as possible to the original textile, like thread from lacemaking companies (Bockens linen, etc.)". Also, participant 15 describes, "the holes in the lace were reworked using the original tape lace techniques. None of the take was lost so it was mostly working bars and net in embroidery thread".

3. What criteria do you find most important when choosing methods and materials?

The most common answer to this question was that the most important criteria was aesthetic, meaning the treatment would have the ability to blend in with the object or invisibility and transparency, 24 of the participants mentioned this in one way or another. Material stability and using materials with similar properties to the object was also important to many; 14 participants. To give adequate support and strength to the object was mentioned by 15 participants. Reversibility and minimal intervention were also mentioned as important criteria by 5 participants. Other criteria include what type of exposure the object will be put through, what type of lace and time constraints.

4. Photo 1: If you were to conserve and support the lace in the photo, what methods would you use? What materials would you use for the conservation treatment? (This is a museum object which will be exhibited in a display case on a board at an angle of 20 degrees). (fig. 4)

Figure 4. Photo of lace bought from eBay. Photo: "LaceCollector" (eBay seller, wants to remain anonymous).

The answers to question 4, about treatments for conserving and supporting the lace in the first photo (Fig. 4) of the questionnaire differ somewhat, but the consensus was that minimal treatment would be preferred on this piece of lace. 21 participants mentioned they might clean and/or flatten the lace before potentially supporting it. Both wet and dry cleaning was mentioned, flattening by humidification, press and stretch were all mentioned as well.
Most participants describe that they would most likely do as little treatment as possible on this piece of lace, as it is described as being exhibited on a board at an angle of about 20 degrees. 15 participants would, in one way or another align and/or organise loose threads with or without

minimal stitches. Participant 6 says “The lace looks stable. I would only align and secure the loose interfering threads, possibly sew the top edge to the separate edge with a few stitches […]”. Participant 37 is a little bit more specific, “[…], careful blanket or darning stitches with Gütermann Skala thread to consolidate and shape loose threads”.

10 participants would use a support fabric. Support fabrics include, written in descending order of number of mentioning, crepeline, nylon net or tulle, other netting or a thin cotton or linen fabric (table 5). 9 participants describe that they would stitch the lace onto a backing fabric that would then cover the display board and 8 participants would lay the lace onto a fabric covered board without stitching, one of them would secure it with pins and participant 16 specifically mentioned using Molton fabric for the board. 7 participants would repair or secure the damaged bridges, Participant 18 describes they would do “[…] reattachment of broken bridges with a thread of similar weight”. Participant 19 describes a different method where they would “[…] possibly span broken bars with adhered Japanese tissue (possibly Klucel G)”. Participant 12 also describes a different method to the rest, they write, “[…] I would use Dukeries fine net. In some cases with large areas of loss, I have cut out the net and heat sealed the edges. But only when very large”.

Table 5 Compilations of support fabrics mentioned in question 4.

Type of support fabric	Total
Silk crepeline or crepeline	4
Net or netting (specific mentions Dukeries net)	3
Nylon net	2
Cotton or linen fabric	2

Five different stitches were mentioned, those being running stitch, buttonhole stitch, blanket stitch [swe: langettstygn], darning stitch and support stitches. All stitches were mentioned once, except running stitch which was mentioned twice. (table 6)

Table 6 Compilation of stitches mentioned in question 4.

Type of stitches	Total
Running stitch	2
Blanket stitch	2
Buttonhole stitch	1
Darning stitch	1
Support stitch	1

Table 7 Compilation of threads mentioned in question 4.

Type of thread	Total
Cotton Specific mentions Egyptian cotton)	6
Linen	4
Silk	2
Embroidery thread	1
Gütermann Skala (polyester)	1

The most mentioned thread used was cotton thread, which was mentioned by 6 participants, 1 participant specified using Egyptian cotton thread. Other threads mentioned were linen thread, silk and embroidery thread. Participant 37 specifically mentioned Gütermann Skala thread which is a thin polyester thread. (table 7)

Participant 14 suggested they would, again, use a lace making technique. They describe, “[…]. I would determine which brides were original and which were repairs, remove the repair bars, and recreate them using buttonhole stitches in matching linen thread. For the originals I would leave whatever thread remains intact, supplement it with matching thread, and cover the bars with buttonhole stitches […]”.

5. **Photo 2: If you were to conserve and support the lace in the photo, what methods would you use? What materials would you use for the conservation treatment? (This is a museum object which will be exhibited in a display case, mounted on a mannequin) (fig 5)**

Figure 5 Photo of lace on Karl XI's jacket from Statens historiska museer, photo: Augusta Persson.

The most commonly mentioned method that 19 participants would consider if they conserved and supported the lace in photo 2 (Fig. 5), were to stitch down threads. Participant 12 describes, "I would take down the loose threads after alignment with fine sewing thread. Sometimes I do a variation of the 'twinning' stitch between sections to support the loose threads. For this piece on the velvet one might not want too many stitches into the support fabric". Participant 24 similarly describes "Since the lace seems to sit on a velvet fabric, it is not possible to work with an underlaying support fabric. Loose pieces that risk coming off can be stitched on with small stitches. To make sure the lace is anchored to the fabric" (translated from Swedish). 8 participants would organise and re-align threads. 1 participant specified they would only stitch in the lace, not in the velvet backing, participant 33 describes,"[…] Too scattered thread ends and edges and loose / almost broken bridges, I would sew through a few stitches with silk thread, but only in the lace itself not down into the velvet […]" (translated from Swedish).

Table 8 Compilation of support fabrics mentioned in question 5.

Type of support fabric	Total
Nylon net	3
Crepeline	3
Tulle	3
Net	3
Silk organza	1
Silk semi-transparent fabric	1

7 participants would stitch the lace to a support fabric, support fabric mentioned are nylon net, crepeline, tulle and net, which were each mentioned by 3 participants. Silk organza and silk semi-transparent fabric were mentioned by one participant each. 6 participants would use an overlay, the support fabrics mentioned regarding overlays were crepeline, net or Stabiltex. Participant 26 writes "Here I would consider making an overlay with "place adapted" crepeline, so that there was no folded edge […]". (table 8)

1 participant would sandwich the unravelled areas between a net support fabric. 2 participants discussed the possibility of perhaps removing the lace from the velvet backing. 3 participants discussed dyeing the support fabric to match either the lace or the velvet backing. 1 participant considered experimenting with reweaving part of the lace to see if it gave a better result (P.15)

The largest range of stitching types were discussed in this question. Eight different types of stitches were mentioned. Couching stitches were mentioned most, by 4 different participants. Overcasting stitch were mentioned twice. Stitch tack, twinning stitch, darning stitch, long stitches and running stitch were all mentioned once each (table 9).

Table 9 Compilation of stitches mentioned in question 5.

Type of stitches	Total
Couching stitch	4
Overcasting stitch	2
Stitch tack	1
Darning stitch	1
Twinning stitch	1
Running stitch	1
Long stitches	1

Table 10 Compilation of threads mentioned in question 5.

Type of thread	Total
Silk thread (specific mentions Grege and Mara 220)	7
Polyester thread (specific mentions Gütermann Skala)	5
"Fine thread"	2
Cotton thread	1
Nylon thread	1
"Strong thread"	1

The largest range of threads were also discussed in this question. 7 participants mentioned they would use a silk thread, Grege silk and Gütermann Mara 220 was specifically mentioned once each. Polyester thread was mentioned by 5 participants, specifically mentioned was Gütermann Skala. A "fine thread" was mentioned twice with no specification of material. Cotton thread, nylon thread and "strong" thread were all mentioned once each (table 10).

3 participants commented that they would use the same materials and methods they mentioned in the previous question.

6. Have you had experiences when the methods or materials chosen did not give the intended result?

21 participants answered no to this question. 7 participants answered that they had had experiences when the treatment did not give the intended result. Participant 8 describes, "Yes. Some silk lace on a 1920s dress was made overly stiff by sandwiching it between layers of bobbinet, so I used an underlay only. It was a compromise between support vs visual integration". Participant 17 describes, "Yes; sometimes darning was not as invisible as hoped". Participant 34 describes, "If using wrong type of thread or thickness, that consolidation stitches looked too invasive". 4 participants answered that they had had experiences where a treatment did not give the intended result but not when working with lace. 1 participant answered that they had experience with treatments being less satisfying, participant 2 explains, "I think the use of silk crepeline is the less satisfying. […]". 5 participants answered with other comments or advice. Participant 11 explains, "If I am not familiar with a treatment or have not carried it out before, I always make a replica or as close as to practice a technique or treatment. This

Table 11 Replies to question 6.

Answer	Total
No	21
Yes	7
Yes, but not with lace	4
Less satisfying	1
Did not answer	1
Other comments	5

reduces the risk of damage to the original. If the method is unsuccessful, I will look for an alternative and keep trying. You get one chance on the original object, so always prepare. Always research". 1 participant did not answer the question (see table 11).

3.3. Conclusions from Questionnaire

To answer the first research questions about what methods and materials are used for lace conservation by conservators today; the most common method mentioned in total for all questions, was to support lace with stitching, with or without some sort of support fabric. Other methods include sandwich between a support fabric, aligning and securing loose threads and repairing broken bridges.

Over all questions, running stitch, blanket stitch and couching stitch was mentioned 5 times each. Overcasting stitch was mentioned 4 times and darning stitches as well as support stitches were mentioned 3 times each. All other stitches, such as buttonhole stitch, were only mentioned once.

As for the materials, the type of support fabrics differed, but the use of net, tulle or crepeline were mentioned most. Some type of net (nylon, silk, bobbin, cotton) was mentioned 32 times in total in the entire questionnaire, crepeline was mentioned 16 times and tulle was mentioned 11 times.

Type of thread also varied throughout the questionnaire. The most mentioned was, some sort of silk thread which was mentioned 18 times, cotton thread was mentioned 13 times and linen as well as polyester thread were mentioned 10 times each.

4. Experimental Study

4.1. What will be Examined?

The most commonly mentioned methods, in the questionnaire, as well as in the conservation literature, included the use of a support fabric. Net, tulle and crepeline were all frequently mentioned and can be a, more or less, invisible way to stabilise and support lace with a net ground. When supporting a guipure lace, where the toile of the lace is joined together with bridges and bars instead of a net, a support fabric is harder to hide, making the treatment visually intrusive. Therefore, what will be examined in this study is not the most common methods mentioned, but the more uncommon ones. The methods tested will focus on the bridges of the lace, to explore if it is possible to support guipure lace without a support fabric in an easy and more visually/aesthetically pleasing way whilst at the same time giving sufficient support to the lace. Excluding the use of embroidery floss, which was only mentioned twice by one participant, the materials used were all commonly mentioned in the questionnaire as materials for lace conservation. These are cotton thread, linen thread, and polyester thread. The stitches described in this study are referred to as buttonhole stitch and are a simple buttonhole stitch, also known as blanket stitch or loop stitch, which according to Winslow Grimm (2002, p. 8) can be used synonymously.

4.2. Test Materials

4.2.1. Lace

The lace used in this experimental study is handmade lace from an unknown date and origin, made with a combination of a bobbin lace and a needlework (used in needlepoint lace) with a guipure ground, as it is joined together with bridges instead of a net ground (fig. 6). The bobbin lace portion of the lace is the toile, and the needlework portion of the lace are the bridges, made with buttonhole stitches, which join the toile together. The lace is most likely from the early 20th century and is possibly made in France, but this is not certain (T. Gütebier 2021, personal communication, 10 May Mölndal; Earnshaw, 1994, pp. 153-156). After examination under microscope the lace was determined to be made of cotton. The six damaged areas in the lace were all similar, however, some areas had more detached bridges, where the bridge has detached from the toile, whereas other areas had more bridges that had broken off in the middle, and the bridge threads had additionally frayed where the breaks occurred.

Figure 6 Lace used in experimental study.

4.2.2. Thread

The most common types of thread mentioned in the questionnaire were silk (18), cotton (13), linen (10), and polyester (10) thread. In the literature study, Landi (2002, p.138) mentions using a thin thread of unspecified material and Grčević (2015, p. 158) mentions using silk filaments. O'Daly (2017, pp. 44-47 and pp. 100-110) describes using an extra fine Egyptian cotton thread (175/2[2]) for the bobbin lace and the net darning for the net ground lace, she then uses threads pulled from Stabiltex to secure the patches to the lace. For the guipure ground lace, she describes using a cotton embroidery thread (60/2) to make the substrate infill which was secured to the lace using a thread pulled from Stabiltex. Two strands of embroidery floss, pulled from the cotton embroidery thread, were also used in the embroidery thread bridge method.

Benson *et al.* (2014), investigate and compare a selection of threads often used in textile conservation. Five different threads were put through a tensile strength test and a fixed-load test, the threads tested were 185/2 lace cotton, two-ply hair silk, two-ply silk *organsin* and polyester filaments Skala and Tetex. The outcome of the tests determined which of the five threads were the least, as well as the most, damaging to the artefacts they were tested on. The 185/2 lace cotton came out on top with the overall lowest damaging affect, while the Tetex polyester filaments had the overall highest damaging affect.

For this experimental study, four types of threads were used. As the lace is made of cotton, and the cotton thread was both mentioned in the literature and the questionnaire as a good option, this seemed like an obvious choice. However, the thread used in this study is a 140/2 Egyptian cotton thread, meaning it is thicker than the examples specifically mentioned by O'Daly (2017, p. 44) and Benson *et al.* (2014, p. 2) who used respectively 175/2 and 185/2. The 140/2 is, nonetheless, a good match to the thickness of the original cotton thread in the lace used in the experiment. Unfortunately, the colour of the thread did not match, but, as it was the only Egyptian cotton thread available to buy on short notice in Sweden, and as there was no time for dyeing, the thread was still used.

"Method 2", which will be discussed in detail below (see 4.3.2. Method 2), is the "embroidery floss bridge" mentioned in O'Daly's (2017, p. 100), dissertation. In her study she used a 60/2 embroidery thread. Participant 15 in the questionnaire also mentions embroidery thread but does not specify what kind or what thickness. This study made use of the DMC Mouline Special 25, a 6-stranded cotton embroidery thread in the colour 822 from which one strand of embroidery floss was pulled and used.

Another thread included in this study was a linen thread (40/2). The linen thread is a 2-ply s-twist, 6-strands s-twist thread, where 2 strands were pulled out and used to be thin enough to match the thread in the lace. Linen thread was mentioned 10 times in the questionnaire but has not been mentioned in any of the literature. The colour and look of the linen thread did match the lace very well, which is why it was chosen to be one of the threads in this study.

To secure the new threads in "Method 2", a thread pulled from Stabiltex was used. Stabiltex is an open-weave fabric made with polyester filaments. The fabric was discontinued in 2004 and replaced by Tetex which itself was discontinued in 2009 (cameo.mfa.org, 2020). It is, however, still

[2] Thread weight. The first number tells the weight, and the second number tells the number of plies. (The Sewing Loft, 2016)

possible to find Stabiltex, as many still have large stock of it. The Stabiltex used in this study had an off-white colour to match the lace.

Other threads were considered for this study, such as the Gütermann Skala, a polyester filament which was mentioned several times in the questionnaire. This thread was unfortunately not available to buy in Sweden, and with the current Covid-19 situation slowing shipping times down, the Gütermann Skala was decided against. Silk thread was also a material considered for the experimental study but was decided against as no good match could be found within the limited time for this dissertation.

4.3. Methods

4.3.1. Method 1 – Buttonhole Stitch Covered Bridges

Method 1 is inspired by participant 14's answer in the questionnaire. They explain, "[...] determine which brides were original, [...] leave whatever thread remains intact, supplement it with matching thread, and cover the bars with buttonhole stitches".

For method 1, linen thread, Egyptian cotton thread and one strand of Mouline embroidery floss was used. After attaching the thread (linen, cotton, or embroidery) in a stable area of the toile (near the broken and/or detached bridges) of the lace, the broken and/or detached bridges were supported by laying the thread over the broken bridge, from toile to toile, securing it in the stable lace on the opposite side with one small stitch. The broken bridge was then covered by buttonhole stitches going back, the buttonhole stitches went around the original bridge as well as the new laid thread to ensure the original bridge got the support it needed (see fig. 7). With running stitches, the same thread was then sewn to the next broken or detached bridge and the same procedure was completed again.

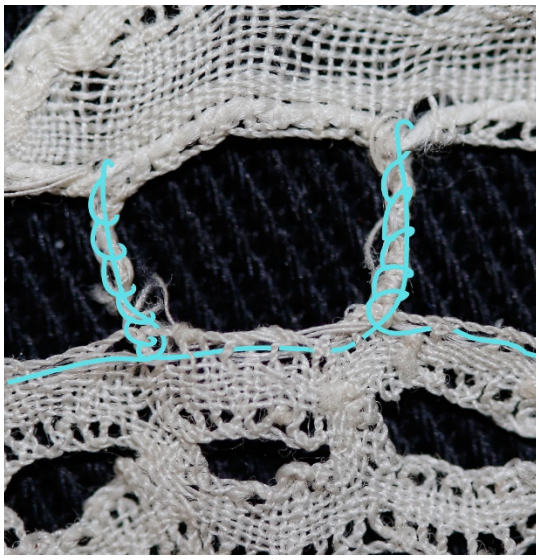

Figure 7 Sketch describing method 1.

4.3.2. Method 2 – Laid Thread Bridges

Method 2 is inspired by one of the supplementary methods used by Bevan O'Daly (2017, p. 113), the method is not described in detail, but she says, "The use of bridging with embroidery thread, […] are worth exploring for smaller repairs". This study intends to do just that.

For method 2, linen thread, Egyptian cotton thread, one strand of Mouline embroidery floss and threads pulled from Stabiltex were used. In this method, the threads (linen, cotton, or embroidery) were laid loose over the broken or detached bridges on the wrong side of the lace (blue line in sketch). It was then secured using a thread pulled from Stabiltex (red line in sketch). The Stabiltex thread was attached in the stable toile of the lace, buttonhole stitches were then used around the laid thread and the broken or detached bridge to support and secure the original bridge. The supporting thread bridge was laid in a sort of S-shape, going back and forth from toile to toile, supporting several broken bridges in one area (fig. 8).

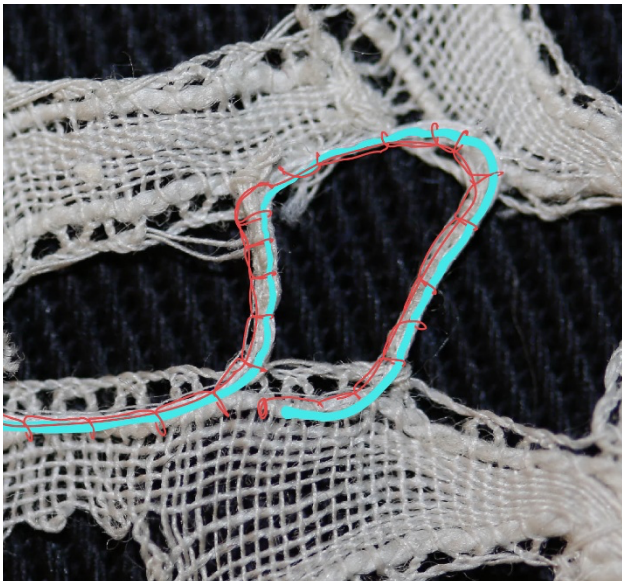

Figure 8 Sketch describing method 2.

4.4. Results of Experimental Study

To easily refer to the different method and thread combinations, especially in the evaluation, each method was given three letters corresponding to the three threads used. Method 1 was given A, B and C and method 2 was given D, E and F.

4.4.1. A: Method 1 with Mouline Embroidery Floss

Method 1 in combination with Mouline embroidery floss was easy to work with as the floss is flexible. The embroidery thread is 6-stranded, and one strand of floss was pulled from the thread but was still not thin enough to match the thinness of the lace. The sheen does not match the lace either. This method and thread were quite quick, the entire conservation treatment (four bridges) took about 30 minutes, about 7.5 minutes per bridge.

Figure 10 Area of damage A, before treatment.

Figure 11 Area of damage A, after treatment.

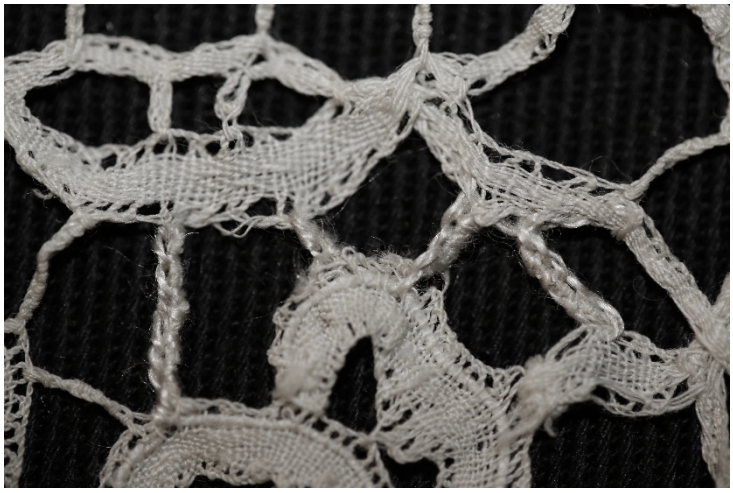

Figure 9 Close up area A after treatment, right side.

Figure 12 Close up area A after treatment, wrong side.

4.4.2. B: Method 1 with Egyptian Cotton Thread

Method 1 in combination with the Egyptian cotton thread (140/2) was easy to work with as the thread was flexible. It was, therefore, easy to manipulate and place the buttonhole stitches evenly around the broken original bridge and the new thread. This method and thread were the quickest treatment of all combinations, including method 2. For an unexperienced conservator student, the entire conservation treatment (four bridges) took about 25 minutes, about 6.25 minutes per bridge. It was the second to last treatment executed, meaning the method had been practiced more, which could be a reason for the treatment being completed so quickly.

Figure 14 Area of damage B. Before treatment.

Figure 13 Area of damage B. After treatment.

Figure 15 Close up area B after treatment, right side.

Figure 16 Close up area B after treatment, wrong side.

4.4.3. C: Method 1 with Linen Thread

Method 1 in combination with the linen thread (40/2) was harder to work than with the Egyptian cotton, as the thread was quite inflexible. The linen thread is a 2-ply thread, where each ply is made from 6 strands. 2 of these strands were pulled from the 40/2 linen thread to match the thinness of the thread in the lace. The damage was mostly that the bridges had detached, however one of the bridges had broken off and frayed. This was very hard to secure with the linen thread as it was hard to manipulate and place the stitches in the right places. The stitches are therefore quite unevenly placed. This method and thread took the longest out of the combinations in method 1. The entire conservation treatment (four bridges) took about 40 minutes, about 10 mins per bridge.

Figure 18Area of damage C, before treatment.

Figure 17 Area of damage C, after treatment.

Figure 19 Close up area C after treatment, right side.

Figure 20 Close up area C after treatment, wrong side.

4.4.4. D: Method 2 with Mouline Embroidery Floss

Method 2 in combination with the one strand of Mouline embroidery floss and a thread pulled from Stabiltex was easy to work with and was the first conservation treatment completed out of the six tried. The embroidery floss was flexible and easily manipulated which meant the Stabiltex thread did not need to be pulled too much when securing it. This meant the Stabiltex did not snap or tangle as much as method 2 with linen thread (see 4.4.6. F: Method 2 with Linen Thread). Out of the four broken bridges, three had detached from the toile, two of the detached bridges had frayed. The fourth bridge had broken off in the middle and frayed making this area of damage the most frayed out of the six. This method and thread were also quick, the entire conservation treatment took around 35 minutes (four bridges), so about 8.75 minutes per bridge. It was the first conservation treatment completed, which might be why the treatment took longer than method 2 with the Egyptian cotton thread.

Figure 22 Area of damage D, before treatment.

Figure 21 Area of damage D, after treatment.

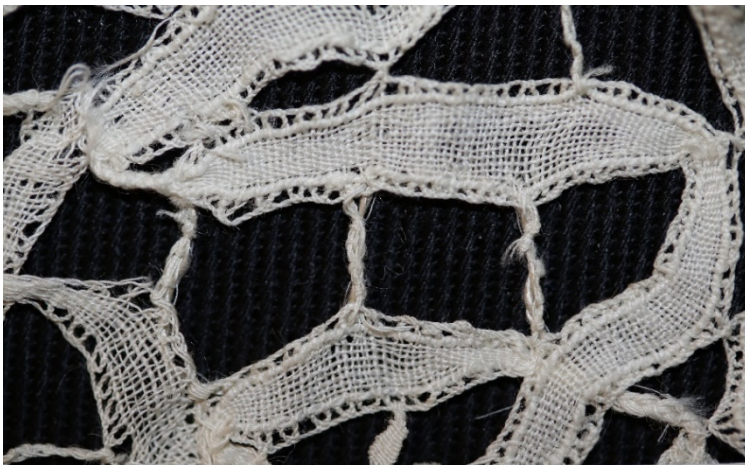

Figure 23 Close up area D after treatment, right side.

Figure 24 Close up area D after treatment, wrong side.

4.4.5. E: Method 2 with Egyptian Cotton Thread

Method 2 in combination with the Egyptian cotton thread (140/2) and a thread pulled from Stabiltex was also easy to work with. The thread pulled from Stabiltex acted similarly to method 2 with Mouline embroidery floss as it snapped and tangled less then with method 2 with linen thread. But as the cotton thread was easy to bend and manipulate into place, the Stabiltex did not have to be strained to secure the cotton thread. Out of the four broken bridges, three had detached and one had broken off in the middle and frayed. This method and thread were also quite quick, the entire conservation treatment took around 30 minutes (4 bridges), so about 7.5 minutes per bridge.

Figure 26 Area of damage E, before treatment.

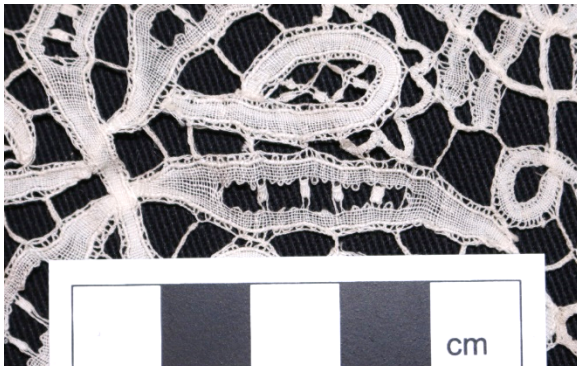

Figure 25 Area of damage E, after treatment.

Figure 27 Close up area E after treatment, right side.

Figure 28 Close up area E after treatment, wrong side.

4.4.6. F: Method 2 with Linen Thread

Out of all combinations with both methods, method 2, with linen thread and thread pulled from Stabiltex, was the hardest to work with. Mainly because the linen thread is inflexible and not willing to lay in the right place. Just to secure the thread in the stable lace before laying it over the broken bridges was hard, and the thread pulled from Stabiltex was not strong enough to secure it as the linen thread kept detaching. The Stabiltex thread kept snapping off and kept getting tangled as much more strength needed to be put on it when pulled as the linen thread needed to be forced into place. This method and thread took the longest out of all methods and combinations as the Stabiltex kept snapping off and the linen thread was so inflexible. The entire conservation treatment took about 1 hour (3 bridges), about 20 minutes per bridge. Having to restart the treatment multiple times also contributed to the longer treatment times.

Figure 29 Area of damage F before treatment.

Figure 31 Area of damage F, after treatment.

Figure 30 Close up area F after treatment, right side.

Figure 32 Close up area F after treatment, wrong side.

4.5. Evaluation and Conclusions from Results

4.5.1. Professional Textile Conservators

An evaluation form with a PowerPoint of magnified photos (see Appendix 3 and 4) (at approximately 1 cm to 5 cm ratio) of the treatments was sent to four established textile conservators, all with 10 to 20 plus years of experience. The evaluation was purely based on aesthetics. The task was to rate/place the treatments into three categories: best, medium, and worst. The informants first evaluated all six treatments when looking at photos from the right side of the lace. Secondly, the informants did the same procedure with the treatments but now looking at them from the wrong side of the lace. Thirdly, the informants rated the threads used in method 1 and lastly the informants rated the threads used in method 2. According to informant 1, 3 and 4 the form took 30–45 minutes to finish.

Table 12 Summary of Evaluation form from 4 professional conservators.

Right side	Informant 1	Informant 2	Informant 3	Informant 4
Best	E	B, F	E, F, D	F, E, D
Medium	B, C, D, F	E	B, C	B
Worst	A	A, D	A	A
Wrong side				
Best	D, E, F	B, F	C, D, F	F, C
Medium	B, C	E	B, E	B, D
Worst	A	A	A	A, E
Thread A-C				
Best	C	B	C	C
Medium	B	C	B	B
Worst	A	A	A	A
Thread D-F				
Best	F	E	F	F
Medium	D, E	F	D	D
Worst		D	E	E

The results of the evaluation form show the “Best”, the “Medium” and the “Worst” treatments, based on aesthetics. Informant 3 and 4 also added comments to their ratings. All comments have been translated from Swedish. (see Appendix 3. Evaluation Form).

4.5.1.1. Mouline Embroidery Floss

In method 1 the Mouline embroidery floss (treatment A) was rated worst, in both thread choice and overall worst-looking treatment by all four informants. When rating the right side, informant 3 comments, “very visible blanket stitches, thick and glossy”, informant 4 similarly comments, “the blanket stitch is too thick and bulky”.

In method 2 the Mouline embroidery floss (treatment D) got higher ratings. On the right side it was rated best by two informants and medium by one but also worst by one. On the wrong side, the embroidery floss was rated best by two informants and medium by one. One informant did not rate the treatment. Informant 3 comments, “D and F, the thicker thread is visible and disturbs a bit, but still looks neat”.

In the thread choice, method 1 with Mouline embroidery floss (A) was rated worst by all informants. Informant 4 comments that “The Mouline floss is a bit too glossy, too thick and have

too clear a twist to integrate with the lace". Method 2 with the Mouline embroidery floss (D) was rated medium by three informants and worst by one. Informant 3, who rated the threads in method 1 medium, comments, "The Mouline floss [is] too glossy but seems good to sew the stabiltex against (can be tightened well)". Informant 4 comments, "In D the Mouline floss fills out in a surprisingly good way".

4.5.1.2. Egyptian Cotton thread

In method 1, the Egyptian cotton thread (treatment B) was generally rated medium. It was rated medium by the same three informants and best by the same one informant, on both the right and the wrong side. Informant 3 comments on the wrong side, "the blanket stitch appears as loops". Informant 4 similarly comments on the right side, "the blanket stitch is very distinct in B".

In method 2, the Egyptian cotton thread (treatment E) was rated best by three informants and medium by one. Informant 3 comments, "The blanket-stitched thread shows the least". Informant 4 comments, "All these [F, E, D] were nice on the right side and relatively equivalent". On the wrong side, treatment E was rated best by one informant, medium by two and worst by one.

In thread choice, method 1 with Egyptian cotton thread (B) was rated medium by three informants and best by one. Informant 4 comments, "Think it is above all the colour that stands out. It is a little bit light. Good thread thickness otherwise. Maybe the twist disturbs a little, but not so much". In method 2, treatment E was rated best by one informant, medium by one informant and worst by two informants. Informant 4, who rated worst, comments, "[…] the cotton thread in E is a little flat/tight". Informant 3, who also rated worst, comments, "looks as if the stabiltex cannot be tightened as well – loops".

4.5.1.3. Linen Thread

In method 1, the linen thread (treatment C), on the right side, was rated medium by two informants, the other two did not rate treatment C. On the wrong side, it was rated best by two informants and medium by one informant, one informant did not rate this treatment. Informant 3 comments, "C looks a bit frayed (tuffsig) but a discreet repair".

In method 2 the linen thread (treatment F) was generally rated best, in both thread choice and overall best-looking treatment, on the wrong side by all four informants, on the right side by three out of four and in thread choice, also by three informants.

In the thread choice, method 1 with linen thread (C) was rated best by three informants and medium by one. Informant 3 comments, "The thread blend in best with the lace". Method 2 with the linen thread (F) was also rated best by the same three informants and medium by one. Informant 4 comments on the thread, "the linen thread blends in both colour and gloss, Good not to see any twist in thread".

4.5.1.4. Summary Professional Evaluation

Overall, the treatments made with method 2 got a better rating (best or medium) than method 1, which were mostly rated worst or medium. The worst looking treatment was undoubtedly treatment A - method 1 with Mouline embroidery floss. The best-looking treatment was F – method 2 with linen thread which was rated best seven times.

On the right side, informants 1, 3 and 4 agreed that the best treatment was method 2 with Mouline embroidery floss. Method 2 with linen thread was also rated best by informant 2, 3 and 4

which means treatment E and F were rated best the same number of times. On the wrong side, all informants rated method 2 with linen thread the best-looking treatment. The consensus for both the wrong and the right side, was that method 1 with Mouline embroidery thread was the worst-looking treatment. All informants were quite similar in their ratings in the thread choice. Informant 1, 3 and 4 rated the same in the thread choice for method 1, informant 2 rated differently in best and medium. The worst-looking thread in method 1 is the Mouline embroidery floss. The best-looking, with the majority of best ratings, is the linen thread. Informant 3 and 4 rated the same in thread choice for method 2, informant 1 rated similarly but did not rate any of the treatments worst. Informant 2 rated completely different from the other informants. The majority thought that the linen thread was the best or medium. 2 out of 3 informants thought the cotton thread was the worst.

4.5.2. Personal

The personal evaluations based on aesthetics are completed through looking at the treatments without magnification, contrasted to the professional evaluation, which was done from magnified photos, to see if there is a difference between the two. The workability and strength of the treatments are based on the experience of executing the conservation treatments and handling the lace during and after treatment.

4.5.2.1. Aesthetics

The Mouline embroidery floss did not blend in with the lace, and even though the colour matched the lace well, the sheen and the thickness did not. In method 1, where the buttonhole stitches were made with the embroidery floss, the thickness and the sheen were a contributing factor to why the treatment ended up being intrusive. The broken bridges were covered in buttonhole stitches and can be easily spotted as they are double, if not three times, the size of the original bridges. In method 2, the embroidery floss worked better and is not noticeable on the right side of the lace without magnification. Because of the sheen in the embroidery floss, it can, however, be quite easily spotted on the wrong side of the lace. The embroidery floss was laid over bridges which had broken off in the middle and frayed, as well as detached and then frayed. This made the treatment harder to complete satisfactorily as it was hard to place the buttonhole stitches, made with the Stabiltex thread, close enough together to hold on to all the fraying threads in the breaks. This made the treatment more visually intrusive as the fraying is quite noticeable.

The Egyptian cotton thread in method 1 did not blend in with the lace, even though the texture and the sheen were perfect for the lace, the bleached white colour made the treatment quite intrusive, and as the buttonhole stitches were placed quite closely together the brightness of the thread was even more noticeable. Had the thread been a more off-white colour, matching the colour of the lace, the treatment would have had a much better result. The support bridges are also a little thicker than the original bridges. The original bridges had detached from the toile and had not broken off in the middle, making the result of the supported bridges more even compared to some of the other conserved areas. The Egyptian cotton thread in method 2 was somewhat better than in method 1 as the treatment is not detectable from the right side of the lace, but can, however, be quite easily detected on the wrong side of the lace as the cotton thread is whiter than the lace.

The linen thread in both methods blended in most with the lace as the thread had a similar colour and texture to the lace. However, because of the similarity, the thread made the treatment close to indistinguishable without magnification. This was particularly apparent with method 1, where

the only indication of the treatment (when looking at the lace from about six inches away), is the fraying thread in one of the broken bridges. The support bridges are also a little thicker than the original bridges. In method 2, the treatment can, on the right side of the lace, only be distinguished by the bridge that broke in the middle, which is fraying by the break. The laid linen thread can be spotted on the wrong side, at least by someone with a good eye. Out of the three "laid thread bridges", the linen thread was the least noticeable, both on the right and the wrong side of the lace.

The Stabiltex thread is not noticeable in any of the treatments without magnification as it is so thin, and the colour matched the lace very well.

4.5.2.2. Workability

The Mouline embroidery in both methods were easy to work with. The embroidery floss was flexible and could be easily manipulated to make the buttonhole stitches in method 1 and into the s-shape in methods 2. The methods took respectively 30 and 35 minutes to complete.

The Egyptian cotton thread in both methods was the easiest to work with as the thread is flexible and easy to manipulate into the shapes both methods needed. Method 1 and method 2 with the Egyptian cotton thread were also the quickest treatments to complete, respectively 25 minutes and 30 minutes.

The linen thread in both methods was the hardest to work with, especially hard was method 2. As the linen thread was so stiff and inflexible the thread was not easy to manipulate into the smooth s-shape it needed in method 2, and the buttonhole stitches in method 1 were hard to place evenly. Both method 1 and method 2 with linen thread were also the slowest treatments to complete, respectively 40 minutes and 1 hour.

The thread pulled from Stabiltex was quite hard to work with and as it is so thin, it easily tangles and snaps if pulled too tightly or if the thread is too long. With the softer cotton thread and embroidery floss, no excessive force needed to be put on the Stabiltex thread, which meant the thread did not snap or tangle as much as with the stiff and inflexible linen thread. As the linen thread needed to be forced into place, the Stabiltex thread was not strong enough to withhold the tension.

The method did not determine which treatment was the easiest as well as the hardest to work with, but the materials did. The linen thread was hard to work with in both methods, but especially method 2 because of its inflexibility. Both the Egyptian cotton thread and the Mouline embroidery floss were easy to work with in both methods, but method 2 did take longer, albeit only 5 minutes, to complete than method 1 for both materials. The significant difference between the methods, and perhaps why the method was harder to work with or took longer, was the use of the thread pulled from Stabiltex. Even though the Stabiltex thread did not snap and tangle to the same degree with the Egyptian cotton thread and the Mouline embroidery floss, compared to the linen thread, it did still snap and tangle. Therefore, from a workability point of view, method 1 is the superior method, specifically in combination with Egyptian cotton thread or Mouline embroidery floss.

4.5.2.3. Strength

As no tests have been executed to measure the strength of the treatments, this evaluation is based on how the treatments withheld handling, during and after treatment, and is based on a visual examination only. Scientific strength tests must be completed to reveal the true strength of the treatments.

The treatments made with method 1 feel weaker than the treatments made with method 2. As method 2 has one thread laid continuously, back and forth, over the broken bridges that are secured, not only in the bridges themselves, but in the stable toile of the lace, the weight is taken off the fragile areas where the original bridges are secured in the toile. Method 1 also uses one continuous thread, but the thread is only secured with one stitch in the stable toile on the one side of the bridge and with running stitches in between the broken bridges.

The linen thread in method 2 was noticed as being the weakest treatment out of the six completed, whilst handling the lace during treatment and after when the lace was photographed, packed and unpacked. The linen thread has loosened in one area, where the beginning of the thread is secured. The linen thread was very difficult to secure with the thread pulled from Stabiltex, as the linen thread was stiff and inflexible and the Stabiltex thread was too weak to hold it in place. However, it is only where the thread is first secured that has loosened, the rest of the treatment still gives a good support to the break in the lace. No other treatment has changed after treatment, photography, packing and unpacking.

The Egyptian cotton thread and the Mouline embroidery floss both felt equally as strong. Yet, methods 2 with both threads seem stronger than method 1.

5. Conclusion

In reply to the first research questions about what methods and materials are being, or have been, used for lace conservation by conservators, the answer varies. Although different methods and materials have been mentioned in the literature, as well as in the questionnaire, certain similarities can be determined. The use of support fabrics and/or stitching stands out as being the most mentioned methods. However, the materials used, both in thread and support fabric, means the combinations are considerable.

To answer the second research question, about if lacemaking methods can be applied to conserve, and support broken bridges in guipure lace, the answer is yes. The methods used in this experimental study are not traditional conservation methods but are both inspired by lacemaking methods. The materials used are, however, commonly used by conservators today. The methods used are inspired by a method described by participant 14 in the questionnaire (method 1), and a method used by O'Daly (2017) (method 2).

In reply to the third, and final, research questions about how the potential lacemaking methods work in practice, the answer is a bit more complex. Both methods tested have advantages and disadvantages in relation to workability and aesthetics, determined by the evaluation completed by the four conservation professionals based on the aesthetics of the treatments and a personal evaluation of the workability and strength of the treatments.

Regarding the aesthetics, on the right side, informants 1, 3 and 4 agreed that the best treatment was method 2 with Egyptian cotton thread (fig. 27). Method 2 with linen thread was also rated best by informants 2, 3 and 4 which means treatment E and F were rated best the same number of times (fig. 31). On the wrong side, all informants rated method 2 with linen thread the best-looking treatment (fig.32). The consensus for both the wrong and the right side, was that method 1 with Mouline embroidery thread was the worst-looking treatment (fig. 11-12).

All informants were quite similar in their ratings in the thread choice. Informants 1, 3 and 4 rated the same in the thread choice for method 1, informant 2 rated differently in best and medium. The worst-looking thread in method 1 is the Mouline embroidery floss (fig. 11-12). The best-looking, with the majority of best ratings, was the linen thread (fig. 19-20). Informants 3 and 4 rated the same in thread choice for method 2, informant 1 rated similarly but did not rate any of the treatments worst. Informant 2 rated completely different from the other informants. The majority thought that the linen thread was the best or medium (fig 19-20). 2 out of 3 informants thought the cotton thread was the worst (fig. 15-16).

Regarding workability, the method did not determine which treatment was the easiest as well as the hardest to work with, but the materials did. The linen thread was hard to work with in both methods, but especially method 2 due to its inflexibility. Both the Egyptian cotton thread and the Mouline embroidery floss were easy to work with in both methods but method 2 did take longer to complete than method 1 for both materials. The significant difference between the methods, and perhaps why the method was harder to work with or took longer, was the use of the thread pulled from Stabiltex, which snapped and tangled with all materials, but particularly with the linen thread. Therefore, from a workability point of view, method 1 is the better method, specifically in combination with Egyptian cotton thread or Mouline embroidery floss. The Mouline embroidery floss did, however, rate the worst aesthetically.

6. Discussion

The purpose of this study was to increase the knowledge about how to best conserve and support broken bridges in guipure lace. Although this dissertation is a small-scale study, and the results of the study might not be comprehensive, the purpose was somewhat fulfilled, though a more extensive study would be needed to find out the *best* way to conserve and support guipure ground lace. This dissertation is a combination of a literature study, a questionnaire, and an experimental study of two methods in combination with three different materials used to support bridges in lace conservation.

6.1. General

This dissertation would benefit from a better conducted questionnaire that provided more specific results about specific types of lace and conservation treatments used on them. The literature study, and to some degree the questionnaire, showed a lack of information about conservation of guipure lace. Articles and books only described treatments done on net-ground laces and many of the methods mentioned in the questionnaire appear to describe the same. In hindsight, a question, asked in the questionnaire, about what type of lace the participants had conserved, would have been beneficial for understanding what lace the methods had been used on. As this was not specified, methods that were used on guipure lace might have been overlooked or mistaken for being something different than what they were. A more experienced conservator might interpret the questionnaire replies differently. However, as the two photos in the questionnaire showed two guipure ground laces, more specific methods were mentioned. This is where a participant mentioned a method which inspired method 1, used in the experimental study. Nevertheless, with a better conducted questionnaire, more treatments specific to guipure lace might have been discovered.

There are ways to support and conserve bridges in guipure lace that are non-intrusive and do not involve a support fabric. The literature study, as well as the questionnaire, repeatedly mentions the use of a support fabric, such as net or tulle, when conserving and supporting lace. When finding the master's dissertation by Bevan O'Daly (2017), new ideas and some specific methods for supporting guipure-ground lace were discovered. Method 2 in the experimental study was based on one method mentioned in O'Daly's dissertation, who had in turn, found the method when reading Elizabeth M. Kurella's book *Anybody Can Mend Lace and Linens* (O'Daly, p. 29 in reference to Kurella, 2001), a book that, unfortunately, was unavailable for this dissertation but could be a good source for future research. The method is not described in detail by O'Daly and only one type of thread is used, but the method gave a satisfying result (O'Daly, 2017, p. 110). So, if not the exact same, a version of the method was tried with different types of threads in this study to see if other threads gave other results. Both methods are thread and stitch-based and do not involve a support fabric to examine if broken bridges can be conserved and supported without altering the appearance of the lace which a support fabric tends to do. Both methods achieved this, none of them are directly noticeable when looking at the lace from a distance, but can be spotted when looking closely, meaning the treatments follow the "six-foot, six-inch rule" mentioned in the ethical and theoretical perspective (see 1.6. Ethical and Theoretical Perspective). The different threads tried gave different levels of intrusiveness. However, when compared to the more "traditional" treatments where a support fabric is used, which was also tried by O'Daly, all threads look less intrusive than when a support fabric is used. Hence, there are treatments that can be used in the conservation of bridges in guipure lace that are non-intrusive, and which do not include a support fabric.

The threads, more than the method, decide if a treatment is successful or not. As the study was limited in time and resources, only three main threads were used. The different threads worked differently in the two methods applied. In method 1 (buttonhole stitch covered support bridges), the buttonhole stitches secure the broken bridges by stitching around the broken bridge and the new supporting thread. Depending on the thread, the visual appearance was not directly altered. However, as two out of three threads were not a particularly compatible match to the lace visually (the Egyptian cotton being too white and the Mouline embroidery floss being too shiny and thick), the treatments became a bit too intrusive, which shows in the evaluation of the treatments. In method 2 (laid thread bridges), the treatment is mostly indistinguishable on the right side of the lace but can be more easily detectable on the wrong side. The thread decides how easily detected the treatment is. Similar to the treatments in method 1, two of the threads were less compatible to the visual appearance of the lace, the Egyptian cotton was, again, too white, and the Mouline embroidery floss was too shiny. The thickness in the embroidery floss was not a disadvantage in method 2, however, as the floss was of a similar thickness to the original bridge. To complete a treatment with a satisfying result, the thread picked is more important than the method. While the choice of method is also important, the thread will ultimately decide how intrusive a treatment is.

6.2. Detectability and re-treatability

Detectability of a treatment is important for future ability of reverse and re-treat but should not be intrusive to the visual appearance of the object. The treatments completed in the experimental study had different degrees of detectability. Method 1 is harder to detect when using the right material and colour of thread but is easy to detect if the thickness and/or sheen of the thread is incorrect. The treatments made with method 2 are easily detectable on the wrong side of the lace but do not change the visual appearance on the right side. The majority of the six treatments explored in this study follow the “six-foot, six-inch rule” and can be detected when looking at them closely but are unnoticeable from a far. The linen thread, however, in both method 1 and method 2, was almost indistinguishable without magnification, potentially making it harder to detect and reverse if required in the future. The Egyptian cotton thread on the other hand, was too white compared to the original cotton thread. If the Egyptian cotton thread had been dyed to a more similar colour to the original, perhaps a few shades lighter, the thread could have been a better option. As the thread was too white, the detectability of it, and therefore the intrusiveness of the treatment, was too high, which can be confirmed in the aesthetic evaluation (see 4.5.1 Professional Textile Conservators). A balance must therefore be found in finding a thread which matches the appearance of the original material whilst not being too close to the original, to ensure the treatment’s detectability but also non-intrusiveness.

Re-treatability or reversibility have not been tested on these treatments, but the treatments should, in theory, be completely, and quite easily, removable, and re-treatable. The threads are secured to the stable toile of the lace by first sewing a small number of basic fastening stitches: in method 1, the linen thread, cotton thread and Mouline embroidery floss were fastened like this and in method 2, only the thread pulled from Stabiltex was fastened. These small stitches were also carefully placed and, for the most part, the needle and thread did not go through any original threads. The thread was then looped around the broken bridges and the new supporting bridges and did therefore not go through any original material. So, in theory, the stitches should be easily removed. Although, as some of the broken bridges are fraying, the removal of the stitches might cause more fraying to occur or in worse cases, even material loss or other damage. Appelbaum (2007, p. 358) states, “Reversibility of a treatment does not safeguard against damage; damage to

an object by an applied material has no relation to its removability [...]". Meaning, that more handling also equals more risk of causing further damage to the object. So, the treatments examined in this study are, in theory, removable but, it is not certain the treatments will not cause damage to the object if removed, especially without testing.

The limitations in this study meant that certain tests, to ensure the treatments' durability, were not executed and the study is therefore not as comprehensive. The treatments completed in this study did not undergo any reversibility/re-treatability, strength, or tensile tests due to lack of time. All six treatments are in theory reversible, but without testing, the practicality of reversing and re-treating the treatments cannot be stated. The strength test written about in the results are entirely observation based and looked at the durability of the treatments during and after treatment, as well as how they endured being photographed, packed, and unpacked. None of the treatments mentioned in O'Daly's (2017), dissertation or in any of the literature read for this study, were tested for strength or durability, so a further investigation of this would be beneficial for future use of the treatments. A continuation of this study and a more in depth look at other types of laces, other methods, and materials, in addition to reversibility, tensile and strength tests of the treatments will hopefully be executed in the future.

7. Summary

There is a lack of research about conservation and support of lace, especially about support of guipure lace, a type of lace with no net ground. So, the purpose of this dissertation is to increase knowledge about how to best conserve and support broken bridges in guipure lace. The dissertation is a compilation of conservation literature on the subject and the conservation methods collected through a questionnaire. In addition to the literature study and questionnaire, an experimental study has been executed where two conservation methods have been tested and compared on several materials. The aim is that the literature study on the subject and the results of the experimental study will be a resource to textile conservation professionals.

To determine what methods and materials conservators use, and have used, to support and conserve lace, a literature study was completed, and a questionnaire was created. The questionnaire was sent to the Swedish Association for Textile Conservation (SFT) and to ICOM-CC Textile Working Group (TWG) as well as posted on the American Institute for Conservation (AIC) and Foundation for Advancement in Conservation's (FAIC) Global Conservation Forum – ConsDistList to ensure a greater reply ratio. 54 replies were collected.

The experimental study focused on two methods collected from the literature study as well as the questionnaire. These methods were chosen, not because they are common methods used by conservators today, but because they are uncommon. The mention of net, tulle and other backing fabrics was common amongst questionnaire participants, as a way to support lace, but these materials do not necessarily match the appearance of lace without a net ground. Guipure lace does not have a net ground but is joined together with bridges and bars. Although the methods chosen for this study are uncommon, the materials used are not. The conservation materials chosen are all frequently mentioned in the questionnaire.

The methods tested focused on the bridges of the lace, to explore if it is possible to support guipure lace without a support fabric in an easy and more aesthetically pleasing way whilst at the same time giving sufficient support to the lace. The materials used were all commonly mentioned in the questionnaire as materials for lace conservation. These are cotton thread, linen thread, and polyester thread. Mouline embroidery floss was also used, but not frequently mentioned in the questionnaire. The lace used in this experimental study is handmade lace from an unknown date and origin, made with a combination of a bobbin lace and a needlework (used in needlepoint lace) with a guipure ground.

In method 1 (buttonhole stitch covered bridges), the broken and/or detached bridges were supported by laying the thread over the broken bridge, from toile to toile, securing it in the stable lace on the opposite side with one small stitch. The broken bridge was then covered by buttonhole stitches going back, the buttonhole stitches went around the original bridge as well as the new laid thread to ensure the original bridge got the support it needed.

In method 2 (laid thread bridges), the threads (linen, cotton, or embroidery) were laid loose over the broken or detached bridges on the wrong side of the lace. It was then secured using buttonhole stitches with a thread pulled from Stabiltex.

An evaluation form with a slide show of magnified photos (at approx. 1 cm to 5 cm ratio) of the treatments was sent to four established textile conservators. The evaluation was purely based on

aesthetics. Overall, the treatments made with method 2 got a better rating (best or medium) than method 1 which were mostly rated worst or medium. The worst looking treatment was undoubtedly treatment A - method 1 with Mouline embroidery floss. The best-looking treatment was F – method 2 with linen thread which was rated best seven times.

The personal evaluation of the workability and strength of the treatments are based on the experience of executing the conservation treatments and handling the lace during and after treatment. The method did not determine which treatment was the easiest as well as the hardest to work with, but the materials did. The significant difference between the methods, and perhaps why the method was harder to work with or took longer, was the use of the thread pulled from Stabiltex. Therefore, from a workability point of view, method 1 is the superior method, specifically in combination with Egyptian cotton thread or Mouline embroidery floss. The treatments made with method 1 feel weaker than the treatments made with method 2. As method 2 has one thread laid continuously, back and forth, over the broken bridges that are secured, not only in the bridges themselves, but in the stable toile of the lace, the weight is taken off the fragile areas where the original bridges are secured in the toile. Method 1 also uses one continuous thread, but the thread is only secured with one stitch in the stable toile on the one side of the bridge and with running stitches in between the broken bridges.

In reply to the first research questions about what methods and materials are being, or have been, used for lace conservation by conservators, the answer varies. Although different methods and materials have been mentioned in the literature, as well as in the questionnaire, certain similarities can be determined. The use of support fabrics and/or stitching stands out as being the most mentioned methods. However, the materials used, both in thread and support fabric, means the combinations are considerable.

To answer the second research question, about if lacemaking methods can be applied to conserve, and support broken bridges in guipure lace, the answer is yes. The methods used in this experimental study are not traditional conservation methods but are both inspired by lacemaking methods. The materials used are, however, commonly used by conservators today. The methods used are inspired by a method described by participant 14 in the questionnaire (method 1), and a method used by O'Daly (2017) (method 2).

In reply to the third, and final, research questions about how the potential lacemaking methods work in practice, the answer is a bit more complex. Both methods tested have advantages and disadvantages in relation to workability and aesthetics. This was determined by the evaluation completed by the four conservation professionals based on the aesthetics of the treatments and a personal evaluation of the workability and strength of the treatments.

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If not otherwise stated all photos are taken by the author of this dissertation, Amanda Fredriksson.

List of figures

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Appendix 1 – Supplier's list

Egyptian cotton 140/2 thread
Svenska spetsar
Vadstena, Sweden
https://www.svenskaspetsar.se/

DMC Mouline Special 25, 6-stranded cotton embroidery thread 822
Knapp-Carlsson
Gothenburg, Sweden
https://www.knapp-carlsson.se/

Stabiltex
Museumstjenesten
Kjellerup, Denmark
https://museumstjenesten.com/shop/

Also used in the experimental study with unknown producer

Linen 40/2 thread 2-ply s-twist, 6-strand s-twist.

Possible substitute to linen thread:

Gütermann Linen thread
Gütermann
Gutach-Breisgau, Germany
https://consumer.guetermann.com/en/product-finder/linen-thread

Appendix 2 – Questionnaire

1. **What methods and material have you used to conserve and/or support lace in the past and now? (If possible, please provide approximate year of treatment)**

Participant 1. linen thread

Participant 2. silk crepeline and Nylon net

Participant 3. Supported from the back with silk crepeline and stitched with hair silk (running stitches around the edges and as vertical support stitches, laid thread couching in areas of loss/damage) around 2013-present Encapsulated in nylon bobbinnet, more for artefacts in private collections that may still be used, around 2018-present

Participant 4. I have used nylon net and stitching in order to support a lace fan this was done in 2014, the ame method for lace sleeve in 2016. I have also used stitching to make bridges and secure the lace on a tablecloth that looked like the 1st image provided here in 2015.

Participant 5. All in the last 10 years . For chunkier laces I have used individual threads threaded through the design, following existing construction methods to bridge gaps and align broken area.
Backing/mounting onto fine conservation net - this was used particularly for a piece of bucks point lace on a mid-Victorian costume. The lace could not be removed, so a flat support had to be found which could be stitched in place and then cut back to minimis the visual impact.

Participant 6. 2002: 19th century white lace on silk tulle: supported by silk crepeline; 2017: metall lace 18th century: supported by nylon net.

Participant 7. Nylon bobbinet and hair silk (2019, 2020). In one case I also used bulked acrylic paint to create patterns on top of the net

Participant 8. The lace I've conserved has been, for the most part, incorporated into historic clothing as panels or trim. For tears or holes in lace, I have used fine nylon bobbinet (from Dukeries Fancy Goods in the UK) as an underlay and stitched the lace to it with very fine silk or poly thread. Sometimes I've had to sandwich the lace between layers of the bobbinet and sometimes I've dyed the bobbinet to match the lace. I do not try to fill losses or re-create the original lace-making technique; my goal is stabilization, and I try to make the repair as visually unobtrusive as possible.

Participant 9. It would depend on how fragile the lace is and how it is being displayed but I would likely choose a transparent fabric and support it on the fabric with polyester Skala thread or silk filament or cotton thread

Participant 10. nylon tulle and cotton bobbinets fabricated by Dukeries; and commerical nylon tulle (from 1998 to present)

Participant 11. Mainly minimal support using textiles or threads to secure to support textile.

Participant 12. I use Dukeries nylon net. The holes in the net do not always line up in the locations necessary for support, but the net does blend well with all types of lace.

Participant 13. Cotton thread, nylon diamond net, nylon hex net, silk hex net, cotton bobbinet

Participant 14. To clarify, I am a museum collections specialist, lacemaker and lace historian, so I have been employed to repair lace in the past but I am not a conservator by profession. When choosing materials to repair and restore lace I have always attempted to source the closest material possible to the original textile, like thread from lacemaking companies (Bockens linen, etc.).

Participant 15. 2005 - collection of 16th Centaury lace. treatments broadly consisted of tracing the lace onto Mylar to record their original side and shape, washing the lace, then Sodium borohydride reduction bleaching, the lace panels were stretched and dried over the tracings to return them to their original size and shape. These lace panels were supported on display be stitching to a fabric covered board. There were very few breaks or losses in these lace panels. 2005 - infills in a Edwardian tape lace over gown. the holes in the lace were reworked using the original tape lace techniques. None of the take was lost so it was mostly working bars and net in embroidery thread. 2007 - large machine lace panel approx. 2m wide x 4m high. This was in good condition with no losses. it was loose lined with contrasting fabric with Velcro

at the top for attachment to a split baton for hanging on the wall. If repairs has been needed I would have supported the areas by stitching them to patches colour matched to the loose lining fabric. about 2012 - 1940s silk net wedding veil. The net area attaching to the wax flower hair piece was rotted out and need full support in this area. I in did all the stitching and gathering. Flattened the damaged area out. the damaged area was lined with matching silk net (hole size and structure). The lining was secured in place with a network of stitching lines mimicking the net structure. The veil was then re-gathered and attached to a Velcro strip for attachment to the display support. the wax flower headpiece was attached to the support over the veil for display. for storage the now two pieces are stored separately.

Participant 16. I conserved cotton lace for my master thesis in 2020. I secured holes in a bobbin lace with tule (bobinet) in a sandwich.

Participant 17. Backing with silt net or Dukeries nylon bobbinet; "darning" with Belgian cotton thread

Participant 18. nylon net, dukeries bobbinet, hair silk, linen thread, cotton thread.

Participant 19. Typically stitching to tulle or crepeline support fabric

Participant 20. Svarade inte på denna fråga.

Participant 21. Frihängande tyllspets med revor och hål säkrade vi mot ett stödtyg i tyll i passande färg. Tyllen har varit både i syntet och i siden. Jag har försökt att använda material i siden, tunn bomull eller fint linne beroende på originalets material och utseende. (2017-2020)

Participant 22. Erfaren är väl kanske att ta i. Jag har konserverat spets vid tillfällen. Det beror på spetsen, men metoder jag använt är tyll som stöd och sytt ner mot den. Jag har även fäst ihop spets bara med stygn i lämplig kvalitet och färg.

Participant 23. Jag har sytt ned en svart knypplad silkespets från 1650-talet mot crepeline. Sen gjorde jag om konserveringen ett par år senare och sydde in den i crepeline som en sandwich i crepeline. Detta var på 1990-talet. 2019 konserverade jag en lite grövre knypplad linnespets och då sydde jag ned den mot ett nylonnät där kanterna bara klipptes utan att kastas, de repade inte upp sig. Nätet var minst 2 m brett så det räckte bra under hela spetsen som var en altarduk. Jag sydde/trädde också tråd där "bryggor" gått sönder eller var trasiga. I övrigt använde jag förstygn eller kaststygn för att sy fast det mot nätet. Jag använde jag också langettstygn/knapphålsstygn för att säkra spetsen på altarduken jag skrev om.

Participant 24. Jag har arbetat med hål tyllspets på dräkt från tidigt 1900-tal. Jag lade ny tyll i nylon bakom hålet och arbetade med stygnrader på diagonalen för att stygnen skulle bli så osynliga som möjligt. Tråden jag använde var konserveringssilke.

Jag har lagat knypplad spets på altardukar som är i bruk. Om det är en reva som går att sy ihop nästas befintliga delar ihop med små stygn i bomulls- eller lintråd. Om det behöver fyllas i spets görs det med sydd spets (som en sydd tränsning)

Participant 25. Isärsprättning av föremålet, rengöring, blekning, stärkning med risstärkelse på form av plaströr. (gjordes under praktik 2005). Jag skulle nog inte ha valt den åtgärden själv. Jag tycker att det var för stor åtgärd på ett museiföremål som ändå inte skulle ställas ut. Rengöring och reducerande blekning samt torkning i så korrekt form som möjligt hade räckt. Istället för att stärka föremålet hade det kunnat visas med genomskinligt stöd under för att hålla ut de delar som skulle stå rakt ut (en hätta med brätte). Rengöring i vatten och tensid, reducerande blekning, bomullsbatist, sömnad med sysilke. Efter 2015

Participant 26. Tunn bomullstråd på en bomullsspets. Tråden säkrades i där spetsen var intakt och tråden användes för att länka samman de lösa delarna. Nedsömnad av metallspets med silkestråd mot det sidentyg den var monterad på. Båda åtgärderna utförda under senare delen av 2010-talet

Participant 27. Likvärdiga material som originalets. Till filéknutet nät har två metoder testats. 1. träda tunna nya trådar och sy langettstygn mellan för att fästa. 2. fästa nytt knutet filénät bakom och sy fast med hårtunn tråd, kaststygn. Till knypplad spets: sy ned mot tunt bakomliggande tyg.

Participant 28. Jag har arbetat som textilkonservator sedan 1981 = stor erfarenhet under lång tid. Jag har främst arbetat med kyrkliga textilier där både metallspetsar och vitaspetsar är vanliga. De har ofta våtrengjorts och spännts ut med hjälp av nålar på mjukt plastklädd spånplatta. Stödåtgärderna för att säkra skador har varierat.

Participant 29. -Tyll som underlagningstyg att säkra sköra partier emot. 2010 - ett föremål där spetsen var ganska grov samt var nedsydd mot ett underliggande originaltyg - jag sydde redningar med jämna mellanrum så att spetsen säkrades mot underlaget. Anpassade redningarna något till där det fanns skador. 2019 - en grov virkad spets med partier som var knutet nät - försökte efterlikna knutarna i nätet och sammanfogade ändar genom att lägga dem omlott och sedan sy in i langett. 2015
Participant 30. Sömnad med tråd (oftast i lintråd), ibland i kombination med silkesslöja/polyesterslöja/nylonnät. Inte ofta, senast kanske för 5 år sedan.
Participant 31. Jeg har konservert mest metallblonder som er påsydd annen tekstil, f. eks i messehagler. Da har jeg ofte rengjort med vann/etanol, og deretter arbeidet med pinsett for å forme løse deler tilbake så godt det lar seg gjøre. Løse deler er så sydd ned med passende tråd, ofte polyester i ulike tykkelser (f. eks Skala, Mara) Jeg har også konservert hvite bomullsblonder i ulike teknikker. Her har jeg sikret løse og manglende deler med hvit bomullstråd. Noen ganger har jeg også sydd blonden ned til et støttestoff, f.eks nylonnett. Nylonnett ble valgt fordi å kunne ha et helt støttestoff på baksiden, uten at det blir for forstyrrende visuelt. Dette gjelder svært skjøre blonder. Da er blonden blitt sydd ned til nettet med Skala.
Participant 32, har svarat nej på första frågan. Jag har visserligen sysslat lite med knyppling och filetarbeten men aldrig konserverat spetsar. Jag skulle förmodligen säkra lösa trådar men inte så mycket mer eftersom det skulle kräva stora kunskaper i spetsanalys vilket kanske endast en specialist besitter. Om spetsen inte är monterad på ett underlagstyg skulle jag kanske säkra den mot ett lager crepelin.
Participant 33. väldigt varierande och någon gång då o då under stort antal år
Participant 34. Nylon net support or also overlay like encapsulation. I prefer creperline or stabiltex but hard to find here Stiches consolidation with silk threads
Participant 35. Jeg har arbejdet med et brudeslør med syet knipling, hvor vi understøttede hele sløret med silkecrepeline. Jeg har arbejdet med en samling af kniplinger, hvor vores vigtigste fokus var at fotodokumentere samlingen og indpakke den forsvarligt i syreneutrale materialer.
Participant 36. Jag har stabiliserat svag och hålig sydd spets på tyllbotten genom sy-konservering till fullt stödtyg av silkecrepeline. Föremålet var en stor brudslöja som fortfarande är i bruk och därför var i behov av stöd för att undgå ytterligare skador vid hantering och användning. Uppgiften utfördes våren 2019.
Participant 37. Three different methods: Gutermann Skala thread sewn with basic stitches, entymology (insect) pins, and pressure mount with cotton fabric backing and acrylic glazing.
Participant 38. Jobbar just nu med att säkra skador genom underlagning, samt montera en upphängningsanordning på en spets (dock är själva spetsen inte skadad). Har även Bohrhydridbehandlat och vårtrengjort spetsar tidigare för ett par år sedan.
Participant 39. Fyllt i bristningar med lingarn

2. What criteria do you find most important when choosing methods and materials?

Participant 1. understand the lace: are the thread systems movable (e.g. bobbin lace) or are they locked (e.g. needle lace) and find adapted methods to the construction
Participant 2. strenghth was an important factor because I mostly work on costume and the objects have to stand handling. Transparence is also an important characteristics. The Nylon net is less fraying and does not have a problem of thread direction. According to its density, it can be transparent and can cover colored patterns without diturbing the sight.
Participant 3. The end-use which determines if the treatment is robust enough to make the object stable.
Participant 4. to offer support and match the appearance of the object
Participant 5. Strength and ability to do what I need them to do. Colour-match/transparency is particularly important for lace as it is often required to be see-through or partially reveal the layer beneath.
Participant 6. adequate support, transparency, seamless if necessary
Participant 7. I looked for a net that had a similar mesh to the structure of the lace and would not weigh down the lace.
Participant 8. I want the materials to be archival and long-lasting, and they must mimic the drape and color of the lace in question. My methods are focused on invisibly and safely stabilizing rather than re-creating the lace.
Participant 9. To be fitting with the artifact - ie in colour - texture

Participant 10. invisibility, and most similar to structure of lace
Participant 11. I always consider techniques that are used outside my area of expertise if appropriate treatments or methods cannot be found or implemented. I always opt for minimal and reversible treatments, if treatment is required. Often the housing, handling and storage have to be consider pre-treatment.
Participant 12. The actual type of lace and type of repair that is necessary. I also fine that using small magnets to hold elements into place easier than straight pens. I describe the technique in this blog post <https://insidetheconservatorsstudio.blogspot.com/2019/08/metallic-threads-tango.html>
Participant 13. thread diameter, color, availability, structure shape
Participant 14. As a maker, I research and study the lace technique in advance so that I can come to the lace piece with concrete knowledge of its construction. Although ideally I attempt to replicate similar stitches in the broken or degraded areas, with blonde or other tulle-ground laces it is often necessary to support the holes using machine-made mesh that as closely matches the original thread and ground stitches as possible. Guipure laces (with connecting brides aka connecting bars) tend to be more stable and often already have repairs/added brides where they have broken.
Participant 15. Material stability and aging properties, ability of the material and methods to blend with the original and Time constraints.
Participant 16. Similar properties to those of the object (if possible, I work with the same material, though sometimes that is not possible due to stability needs), aesthetics (conserved areas should blend in), reversibility
Participant 17. Invisibility
Participant 18. it totally depends on the context.
Participant 19. Invisibility
Participant 20. Att göra så lite som möjligt men ändå säkra spetsen. Med få redovisade (dokumenterade) stygn,
Participant 21. Material som är skonsamma mot originalet samt utseende.
Participant 22. i silket sammanhang spetsen kommer- Är det ett museiföremål som ska ligga still och hanteras av professionella kan jag välja mindre invasiva metoder. En spets på ett kyrkoföremål som ska hanteras, användas och det är människor utan bevarande i fokus som ska handskas med föremålet är det viktigt att välja en stabilare metod.
Participant 23. Att materialet spetsen sys upp på (som nytt stöd) gör att spetsen ändå faller naturligt trots ett stödtyg applicerats, att färgen på tråd och tyg passar med spetsen, att nätet inte blir alltför synligt och att det helst bara behöver appliceras från en sida.
Participant 24. Beroende på om det är till kyrkan eller om det är ett museiföremål tänker jag väl olika. Spetsdukar behöver klara tvätt och ska se hela och fina ut. Jag väljer ofta en mjuk ovaxad bomulls- eller knyppeltråd i lin som ska smälta in och samtidigt vara hållbar. Till museiföremål väljer jag gärna ett stydtyg i nylontyll samt en tråd som inte skär om det är ett skört material. Tunna tyllspetsar sys ner med sysilke. Till metallspetsar skulle jag använda en starkare tråd kanske en tunn polyestertråd.
Participant 25. Museiföremål: Att de inte förvanskar föremålet. Att ta bort nedbrytningsprodukter som påverkat materialet negativt. Att "ta bort" fläckar och skador som är mycket störande och som gör att man i första hand ser dem snarare än föremålet i sig. Att lagningar inte riskerar att skada spetsen genom att vara för stela, vassa eller hårda. Att lagningar inte stör intrycket av spetsen allt för mycket. Hellre en skada än en ful lagning. Kyrkliga föremål i bruk: Att de inte förvanskar föremålet. Att ta bort nedbrytningsprodukter som påverkar materialet negativt. Att "ta bort" fläckar och skador. Att lagningar inte riskerar att skada spetsen genom att vara för stela, vassa eller hårda. Att lagningen håller för ovarsam hantering. Hellre en lite fulare lagning som håller än en nästan osynlig lagning som går sönder efter ett par användningar.
Participant 26. Att metod och material lämpar sig för ändamålet. Dom ska hålla för den påfrestning som föremålet utsätts för utan att påverka föremålets integritet, både strukturellt och utseendemässigt.

Participant 27. Det har stor betydelse om föremålet ska brukas eller är musealt. Estetiska värden har betydelse. Beträffande material vill jag använda liknande material som ursprungligt, troligen något tunnare.

Participant 28. Estetik och hållbarhet.

Participant 29. Att man använder rätt kvalitet i lagningsmaterialet i relation till föremålet. Det är själva förutsättningen för en lagom stark lagning och att lagningen blir diskret. Att man gör minsta möjliga åtgärd utifrån hur föremålet ska visas /användas.

Participant 30. En metod som säkrar skadan, men samtidigt är diskret. Färg och kvalitet är viktigast.

Participant 31. Det viktigeste syns jeg er at det smelter fint inn med resten av gjenstanden, samtidig som det er gjort på en slik måte at det støtter og sikrer materialet best mulig. Materialene bør være holdbare, men ikke så sterke at de kan skjære i originalmaterialet.

Participant 32. Metoden bör vara reversibel och materialet så skonsamt som möjligt.

Participant 33. Att det ska vara adekvat åtgärd i relation till hur föremålet ska förvaras, exponeras eller t om användas

Participant 34. support, transparency, non invasive stitching

Participant 35. Jeg synes et vigtigt kriterie er, at forstå til hvilket formål genstanden skal konserveres - til opbevaring eller udstilling? Dernæst er det vigtigt med en grundig tilstandsvurdering af genstanden for at forstå hvor nedbrudt den er?

Participant 36. Att materialets fysiska egenskaper matchar föremålet och arbetar väl med detta. Som regel föredrar jag naturmaterial. Jag undgår generellt hårda och allt för starka material (jag undgår exempelvis som hårt spunnen polyestertråd på historiska föremål). Samtidigt får materialet naturligtvis heller inte vara för svagt eller tungt. Beroende på vilken funktion materialet skall fylla i konserveringen prioriterar jag styrka och kvalitet. Ibland skall ett stödtyg vara styvt, andra gånger mjukt och lätt - beroende på föremålet.

Participant 37. Least invasive, reversible, invisible during display, and strength of support

Participant 38. Stabila material som överensstämmer med föremålet, hållbarhet och estetik.

Participant 39. Att de passar för spetsens typ, teknik och material.

3. **Photo 1: If you were to conserve and support the lace in the photo, what methods would you use? What materials would you use for the conservation treatment? (This is a museum object which will be exhibited in a display case on a board at an angle of about 20 degrees).**

Participant 1. 1) straighten the lace (with humidity and glass plates) 2) organize threads 3) prepare a mount on a padded and textile covered card board (probably with an aligned passepartout) on which the object can be handled/displayed/stored

Participant 2. I think the best thing to do would be to stich the lace on the a support dyed fabric. If it is necessary to keep the object seprarate from the support, I think I would use Nylon net

Participant 3. After humidification and flattening, since it is on a board, I would stitch the edges and the areas of damage down to the padded board, avoiding to stitch through the actually lace where possible. I would likely use a very fine egyptian cotton in this case. 240/2 thread

Participant 4. Since the object will be displayed on a board I would try to flatten it with the aid of humidification and some pins and then I would stitch it on a padded board. The other option would be to sequre it with the aid of nylon net on the board, however I am not sure about the result (how it look like)

Participant 5. It's hard to give an answer from a photograph, especially with no context as to what is broken and what is the design. For this piece I may be tempted to just stitch it to the board its laying on and not interfere more than that.

Participant 6. The lace looks stable. I would only align and secure the loose, interfering threads, possibly sew the top edge to the separate edge with a few stitches. No supporting fabric.

Participant 7. I would probably use netting stitched to the back with hair silk. I would probably use netting that matched the color or the exhibit support so as not to distract from the lace structure

Participant 8. I would humidify it to reduce creases and slightly block it to re-align the elements. Next I would tack it to a suitable backing fabric using very fine cotton or linen thread.

Participant 9. I would probably use silk crepeline to back the piece and trim the excess close to the edges

Participant 10. Since it will be going on a padded slant board for display, I would do very little. .The actual motif areas of lace appear pretty intact and sound. it is primarily the 'connections' that have broken. I would do a little stitch stabilization to secure loose threads, pull together open seam, and leave it mostly as is. Pin with insect pins to support

Participant 11. It could be strapped to a support using polyethylene strips. These are normally used in exhibits but mainly for allowing a volume to lay open. Minimal stitches can be used to secure the lace to a support. Find an alternative display. Do not display it at an angle, lay it flat which would then omit any treatment. You could also incorporate mirrors to create an impactful experience.

Participant 12. Again I would use Dukeries fine net. In some case with large areas of loss, I have cut out the net and heat sealed the edges. But only when very large.

Participant 13. If I do not have another section of this lace that helps me understand what it once looked like, I would not alter it apart from tidying up the threads by tucking them to the back. And I would block it first. Or wet clean it if tests indicate that.

Participant 14. This looks like a Milanese or Flemish tape bobbin lace with many broken brides (both original and repairs). I would determine which brides were original and which were repairs, remove the repair bars, and recreate them using buttonhole stitches in matching linen thread. For the originals I would leave whatever thread remains intact, supplement it with matching thread, and cover the bars with buttonhole stitches. However, I will not advise as to cleaning/steaming folds as that is not my area of expertise.

Participant 15. The methods I would choose would depend on a number of factors. If time was very short, I would make a fabric covered board with a 'grippy' fabric and lay the lace on it without any attachment, 'tucking in' the worst of the loose threads. In a showcase at 20 degrees the lace will stay in place. If on display for a long time or traveling I would secure the lace to the fabric covered board with stitches in a colour matched cotton sewing thread. If stitched to a fabric covered board I would be comfortable with this piece being displayed vertically. I work in a museum where items are mostly displayed in their used state. previously I have worked in an art gallery where the purpose of the exhibition was to talk about design. If I was preparing this piece of lace for that exhibition I would still stitch it to a fabric covered board but I would take more time to straighten the elements of the lace back into their intended positions and discuss with the curator about reworking the bars that are damaged or missing. If I was to rework elements I would use a cotton embroidery thread that gave a similar texture to the original when worked in the techniques. If a matching colour was not available commercially I would custom dye the thread to match before working these elements. I would work these elements securing them to the original item then attached the lace panel to the fabric covered board.
This way if a different sized or colored backing or display method is desired in a future display the reworked areas wont have to be done again.

Participant 16. If this fragment is displayed on a board, I would cover the board with molton so it would be supported. Maybe I would draw out lines on the support to indicate where there were txtile structures that are missing now. I would probably not do much more than this.

Participant 17. Wet clean after temporary encapsulation between nylon net, remove net, pin flat to dry. Use mylar to transfer lace to display board. Board should be covered with cotton fabric.

Participant 18. humidification with sympatex, reattachment of broken brides with a thread of similar weight.

Participant 19. Humidify, reblock, possibly span broken bars with adhered Japanese tissue (possibly Klucel G)

Participant 20. Möjligen att släta ut i vatten. Men då kan smuts stanna kvar i textilen. Alltid dessa överväganden. Jag har skrivit om tvättning av 1600 tals bomulls fiber. Finns redovisat i Ett blommande turkiskt tält .

Participant 21. Sy ner spetsen mot ett stödtyg i bomull eller linne där spetsen säkras med förstygn som utgår från håligheterna i spetsen. Om spetsen upplevs för skör skulle alternativet kunna vara att lägga en konserveringsslöja över spetsen och sy ner den mot ett stödtyg.

Participant 22. Denna hade jag slätat ut med fukt, ev i fukttält, beroende på ålder och skick (svårt att avgöra från en bild hur skör den är) Då det är ett museieföremål hade jag nog inte gjort så mycket mer än att lägga trådar tillrätta och ev fästa fast längre löst liggande trådar. Sen beror det ju på syftet med utställningen, om intendenterna vill visa det helt eller i det skick det är. Man kan ju med lite langettstygn återskapa de saknade delarna, men konserveringsmässigt har det inget direkt syfte, det ä ri så fall estetiskt.
Participant 23. Jag skulle försöka få den utslätat och rakare med hjälp av vatten, jag skulle försöka trä ned lösa trådar till ena sidan, fästa de trasiga "bryggorna genom att sy fast dem.
Participant 24. Om det är en museal spets så skulle jag våtrengöra den med vatten och spänna ut den och lägga alla trådarna rätt. Jag tycker inte att man behöver göra så mycket med den i övrigt. Det finns ingen större poäng med att säkra så mycket på ett föremål som ska ligga still. En lagning med ex stoppning av hålen som man kunde gjort om det är en spets på en duk blir att förfalska spetsen.
Participant 25. Jag hade rengjort spetsen i vatten och tensid, slätat ut den genom att nåla upp den i rätt form och sedan fukta den i en fuktkammare och låta den torka med nålarna i. Jag hade inte lagat några skador. Man kan uppfatta mönstret trots skadan och så länge föremålet hanteras försiktigt förvärras inte skadan. Innan visning hade jag lagt de lösa trådarna i överkanten under föremålet så att det inte ser lika trassligt ut.
Participant 26. Beroende på hur skört materialet är och vad kontexten är så skulle jag antingen använda metoden som jag skrev om innan för bomullsspetsen, alternativt sy upp föremålet på ett stödtyg som kan monteras på en lämplig skiva.
Participant 27. En solitär lös spets som denna skulle jag sy ned mot bakomliggande material, troligen avvikande färg för att spetsen bättre ska framträda.
Participant 28. Våtrengöring, möjligen blekning med Borhydrid behandling. Utslätning med hjälp av nålar i fuktigt tillstånd. Säkring/sömnadskonservering av lösa delar med lin eller bomullstråd.
Participant 29. Denna kanske jag bara skulle slätgöra och lägga löst på tygklädd skiva. (bomullstyg så att det blir lite friktion). Om den behöver hållas fast så skulle jag nog sy den mot det tyg som sedan spänns på skivan. Typ redningar eller förstygn i överkant enbart.
Participant 30. Sömnad med lintråd. Ett tyg i avvikande färg spänns ut runt skivan. Tyget fungerar både som ett snyggt tyg bakom spetsen och ett stödtyg som spetsen kan sys ned mot. Sömnaden görs tätare vid de skadade partierna.
Participant 31. Avhengig av tilstand ville jeg først støvsuge varsomt, og rengjøre i kaldt vann for å løse ut sure nedbrytningsprodukter. Deretter ville jeg plangjort ved å pinne blonden ut på en myk plate. Fortrinnsvis ville jeg polstret platen den skal stilles ut på og sydd blonden ned på platen. Dersom dette ikke er et alternativ, ville jeg sikret løse deler, ved å sett inn nye tråer der de er brutt. Dette vil også føre til at blonden tar seg bedre ut estetisk. Det kan man også gjøre som et estetisk tiltak dersom blonden sys ned til platen, men da er det ikke nødvendig i forhold til å sikre gjenstanden.
Participant 32. Jag tror att jag skulle säkra lösa trådar mot ett lager infärgat crepelin så att man kan se att det rör sig om ett genombrutet arbete.
Participant 33. Tråden i överkant, mitten ser ut att ligga löst ovanpå så den skulle jag peta under. Den lilla biten i höger kant skulle jag ånga och trycka ut så den ligger plant. Samma för nedre vänstra kantänden nära myntet. Annars bara se till att den ligger på ett bra underlag, urtvättat tyg.
Participant 34. Silk or mercerized cotton thread for stiching and perhaps complete the missing links and as support fabric either crepeline, or net very light and transparent Previous humidification treatment to align fibers and weaving
Participant 35. Min umiddelbare tanke er at gøre så lidt som muligt, men at bruge meget tid på tilstandsvurdering og foto dokumentation. Jeg ville udstille kniplingen på en kontrastbund, som vist på billedet, hvor mønsteret fremhæves. Jeg ser nogle løse tråde og spørgsmålet er, om de gør nogen skade eller er visuelt forstyrrende, for i så fald kan man evt. forsøge at hæfte dem lidt forsigtigt til kniplingen. Jeg synes ikke man bør vaske kniplingen, da det i sig selv kan være en hård behandling for det nedbrudte tekstil. Hvis det skønnes, at de få krøller og buk i stoffet ikke stammer fra dens tid i brug, kan man let opfugte og udglatte disse, for at få dem udrettet.

Participant 36. Val av konserveringåtgärd beror till dels på vad spetsen skall visa i utställningen och vilken historia den bär på. Mitt eget val skulle dock vara följande: Så länge spetsen ligger stilla på en skiva i en monter ser skadorna stabila ut och jag skulle välja att understödja den bäst möjligt genom att montera den på ett mjukt material med friktion som gör att spetsen ligger fast. Lösa trådar skulle jag eventuellt samla med få stygn (löst spunnen bomullstråd matchande färg) runt om tråden och spetsen, så vitt möjligt utan att sticka nålen i tätt knypplade områden men utnyttja den öppna strukturen. Veck och ojämnheter kan rätas ut med lätt uppfuktning under press. Detta kan ske skonsamt och kontrollerat med uppfuktning genom membran av GoreTex och press med exempelvis skivor av glas.
Participant 37. Light humidification, careful blanket or darning stitches with Gutermann Skala thread to consolidate and shape loose threads.
Participant 38. Jag hade rengjort, slätat ut och fäst lösa trådar, samt fäst den med några stygn i överkant i skivan
Participant 39. Jag skulle nog försiktigt slätat ut den. Sparsam sömnadskonservering där den "släppt taget". Lintråd. Bunden fukt.

4. Photo 2: If you were to conserve and support the lace in the photo, what methods would you use? What materials would you use for the conservation treatment? (This is a museum object which will be exhibited in a display case, mounted on a mannequin).

Participant 1. see above and: in the area middle left the threads probably have to be sewn to the support in order to keep them in position. I would just organize the threads in the original position and fix them with long stitches with a thin thread. i.e. silk or polyester.
Participant 2. Nylon net
Participant 3. Depending on accessibility, if it was possible to slip under a silk crepeline barrier between the lace and the velvet I would do that first before stitching the areas of damage back down to the velvet with altered laid thread couching where appropriate. A stronger thread is neccissary for metallic lace, so I would likely choose a stronger silk, or fine Mara 220 staple polyester thread. If there is no access, then I would likely stitch down the areas that are lifting first with only a few stitches, then cover with silk crepeline and stitch around the lace with hair silk. It is possible I would use nylon net instead, depending on if the metallic yarns snag the silk crepeline or not, or whether the lace yarns get caught in the net. It would have to be tested.
Participant 4. in his case I believe I would try to untangle some of the metal threads and position then on the right place and then I would use the nylon net on top of the lace area (only) and secure it with stitching on the velvet fabric
Participant 5. Possibly secure loose ends by couching broken areas to the substrate. If lace is secure on substrate then I wouldn't try and recreate what is missing. If the lace is being removed anyway (for example its already partially off and the main garment wants wet cleaning), then it might be that individual sections could be repositioned using fine threads through the structure.
Participant 6. I would use a nylon tulle as a support fabric that matches the shade of the metal lace and mannequin, so that it almost disappears visually. The tulle should form sufficient support. Grege silk as sewing thread and overcasting stitches. Maybe I would just underlay the damaged areas with nylon tulle, depending on the size of the lace.
Participant 7. Same as above
Participant 8. Is it possible to remove the lace from its velvet backing? If yes, then remove the lace and humidify/ re-align as above and re-stitch to the velvet if necessary.
Participant 9. Similar to the previous answer
Participant 10. Stitch tack the loose dangling areas to prevent threads from falling.
Participant 11. Again, use a net support or the fragile areas that can be kept intact post display or removed. The net would need to be dyed for aesthetic and display purposes. I would not infill or aim to recreate what is lost. Consider if the textile is stabile for display. Consider the length of display, environmental conditions, will these have an impact on the condition of the textile.can images be used instead of the object itself and opt for an alternative textile if this is considered too fragile. Is there sufficient time to write a treatment proposal, consider treatment and carry out treatment in preparation for the exhibition.

Participant 12. I would take down the loose threads after alignment with fine sewing thread. Sometimes I do a variation of the 'twinning' stitch between sections to support the loose threads. For this piece on the velvet one might not want too many stitches into the support fabric.
Participant 13. Assuming the velvet is its support fabric, I would use hand stitching in a cotton thread that blends in color. Otherwise I would probably sandwich the unraveled areas between net to create harmonious shapes and then integrate that with anchoring threads.
Participant 14. I do not have experience repairing metal lace so I will not comment here.
Participant 15. This looks like lace applied to velvet and you mention display on a mannequin so my answer is assuming this lace is attached to a garment and that garment will take the weight of display. As above I would discuss the possibilities and requirements with the curator of the exhibition. I would start working section by section untangling the braid areas, and working through the velvet, couch the areas down to the velvet. If the lace is not intended to be fully secured to the velvet I would couch the areas down to a separate backing of fine silk organza or something similar. I might also experiment with reweaving the sections to see if that gave a better result.
Participant 16. I would probably secure loose metal threads with nylon thread (since it is more durable than silk grege and hardly visible).
Participant 17. Couch loose threads in place
Participant 18. is the velvet part of a costume? the question is a bit unclear. What is the condition of the textile underneath? Is there any rust? you could try to remove and do some consolidation on the lace... but that might be too interventitive.
Participant 19. Darning through lace as needed; generally wouldn't do much since it doesn't have to do with the structural integrity of the garment and there wouldn't be time
Participant 20. Utslätning kommer att göra undeverk
Participant 21. Här skulle jag nog sy ner den mot ett stödtyg med en silkesslöja över som håller spetsen på plats. På så sätt skulle jag inte behöva sy i spetsen. Jag skulle försöka slätgöra den först och lägga tillrätta trådar så gott det går.
Participant 22. Det är ju lite samma här, det beror på syftet. Men den här ser mer fragmentarisk ut bitvis och jag hade ev säkrat den mot en tyll om den har mycket mindre lösa delar. Metalltråd är komplicerat, det skaver och man kan inte på samma sätt böja det tillrätta, så det hade mest rört sig om att försiktigt säkra material så det inte faller bort från föremålet och rätta till det som går. Fördelen med att säkra det mot en sammanhängande yta är också att den går lätt att förflytta sen utan att behöva lyfta i föremålet. Men det är ju en estetisk avvägning också.
Participant 23. Jag skulle försöka fästa lösa metalltrådar och försöka åtgärda och reda ut virrvarret av trådar. Om den ska vila på skiva tycker jag inte att så mycket mer behöver göras. Om den skulle monteras och hänga på docka skulle spetsen behöva ett stöd av ett nytt tyg på baksidan som det skulle kunna sys ned emot med förstygn eller kaststygn. Jag skulle nog färga in en nylontyll som jag skulle sy fast i överkanten på sammeten och så skulle jag sy ned spetsen mot tyllen. Men jag är osäker på hur mycket tyllen töjer sig när den hänger med en tung spets på. En variant är att också montera kjolen så att spetsen kommer att luta men det är ju för att jag vet att detta är en kjol som jag kan svara på detta sätt.
Participant 24. Eftersom spetsen verkar sitta på ett sammetstyg går det inte att arbeta med ett bakomliggande stödtyg. Lösa delar som riskerar att lossna kan nästas fast med små stygn. Se till att spetsen är förankrad till bottentyget. Torrengöring.
Participant 25. Jag hade fäst skadorna mot sammeten med tunt silke, så att det inte ser så trassligt ut. Skadan utgör endast en liten, liten detalj på ett stort plagg och stör därför inte helhetsintrycket nämnvärt. Mina åtgärdsförslag är skrivna dels efter mina egna konserveringsetiska åsikter dels efter den krassa verkligheten - att allt ska kosta så lite som möjligt.
Participant 26. Här skulle jag fundera på att göra en överlagning med "plats anpassat" crepeline, så att det inte blev någon invikt kant. Röd eller grå crepelin beroende på område.
Participant 27. Lösa partier i spetsen skulle jag fästa ned mot det befintliga materialet, om det är tillräckligt starkt. Mindre trasiga partier säkras inte.

Participant 28. Ytlig rengöring gnom dammsugning under nät. Eventuell rengöring ytligt med 50% avjoniserat vatten och 50% Etanol. Sömnadskonservering av lösa trådar.
Participant 29. Jo jag sydde ju ner den direkt mot sammeten men kändes inte optimalt. :)
Participant 30. Svårt, verkar vara metalltråd. Eventuellt används polyestertråd, metallen skär lätt av tråden. Här får man vara väldigt försiktig med silkessammeten. Eventuellt sys spetsen ner mot sammeten på några enstaka ställen, om det går att lägga stödtyg bakom sammeten.
Participant 31. Her ville jeg rengjort om nødvendig, deretter ville jeg formet blonden best mulig tilbake ved hjelp av pinsett, og sydd den ned i posisjon med en passende tykk polyestertråd. Jeg ville også gått over hele blonden, og sjekket at blonden den er tilstrekkelig godt festet til fløyelen, og sydd noen sting ved behov.
Participant 32. Metallspetsen förefaller att vara monterad på en dräktdetalj. Även i detta fall skulle jag säkra lösa trådar.
Participant 33. Skulle behöva se närmare på föremålet för att avgöra, både spetsens kondition och hur bra den sitter mot sammeten. Alltför spretiga trådändar och kanter och släppta/snart brustna bryggor skulle jag sy till genom några stygn med silketråd, men bara i själva spetsen ej ned i sammeten. I nästa steg kollar jag om spetsen sitter tillfredställande mot sammeten och ev kan det behövas kompletteras med stygn eftersom det är en dräkt som ska kläs på osv
Participant 34. Leave it on the velvet if it is a part of the costume, aligning metal threads with silk threads stitches Depending on the final condition I would cover it with a crepeline or net to protect further abrasion
Participant 35. Jeg ser en meget fin guld/sølvknipling, som bærer præg af håndtering og oxidation. Kniplingen er flere steder gået i stykker og fremstår med store huller eller løse tråde. Umiddelbart ville jeg forsøge at forstå, om det skyldtes tiden i brug og hvis det var tilfældet er det jo en historie i sig selv, som man ikke bør "udrette" eller ændre. Er kniplingen monteret med originale sting? Er kniplingen i fare for at gå yderligere i stykker under udstilling? Er kniplingens tyngde skadelig for stoffet nedenunder? Alle disse spørgsmål mm ville være afgørende for den behandling jeg ville vælge. Sølvtrådenes gråligt oxiderede tilstand ville jeg, som konservator, ikke forsøge at ændre ved. Umiddelbart ville jeg fokusere på at understøtte fløjlsstof og knipling forsvarligt under udstilling, men er dette ikke muligt pga. den tredimensionelle form, så kan man overveje om man skal forsøge at understøtte særligt svage partier med et støttestof og evt. ekstra hæftesting i underliggende stof. Min tilgang til opgaven ville dog som udgangspunkt være mere orienteret mod en præventiv indsats end en aktiv konserveringsbehandling.
Participant 36. Lösa trådar som riskerar att bli till större skador skulle jag säkra med få stygn, liksom i exemplet ovan. Tekniken är mer att veckla än att sy. Detta för att undgå att de skadade områdena hakar fast och utvecklas. Det ser ut som om det är en metalknyppling. Jag skulle välja en fin bomullstråd i matchande färg till arbetet. Om nödvändigt skulle jag sy fast spetsen med få, större stygn till sammetstyget. Detta gäller i områden där spetsen har lossnat från underlaget. I övrigt är högsta prioritet att säkra stabilt klimat och lågt ljus på föremålet. Om det är silverknyppling gäller det att undgå att den anlöper, så ingen hög fuktighet eller luftförorening som främjar oxidering.
Participant 37. I have not treated this type of lace before, but similarly would consolidate the loose and fraying threads with thin thread like Gutermann Skala, or use thin Stabiltex (thin polyester netting) over it.
Participant 38. Fäst lösa trådar samt där den sitter lös med en silkestråd i liknande nyans som spetsen.
Participant 39. Sy ner spetsen mot sammeten där den lossnat. Lagt trådarna som spretar tillrätta. Ev lägga smala grå sidenremsor under där den är brustit helt för att ha något att fästa i.

5. **Have you had experiences when the methods or materials chosen did not give the intended result?**

Participant 1. No
Participant 2. I think the the use of silk crepeline is the less satisfying. On the contrary, whe were very pleased using dyed Nylon net conserving mecanic lace made of metallic threads
Participant 3. It is always possible that metallic laces abraid silk crepeline or get caught in nylon net. This can be challenging. Covering a textile is always not the desired choice as it diminishes the aesthetic value of the original textile, but in many cases in textile conservation this is just the compromise that must be made in order to make the textile structurally stable enough to display it.

Participant 4. No, I was happy with the results, but some times I had to repit the treatment to make it look nicer.
Participant 5. No There is no "comments" box - but it might be useful to look at the 2017 University of Glasgow Dissertation by Bevan O'Daly Exploring Supplementary Methods for the Conservation of Lace and see how far she got down this road.
Participant 6. no.
Participant 7. No
Participant 8. Yes. Some silk lace on a 1920s dress was made overly stiff by sandwiching it between layers of bobbinet, so I used an underlay only. It was a compromise between better support vs visual integration.
Participant 9. Sometimes if things do not work out as intended you need to make modifications as you go- this depends on a lot of factors - how fragile the piece is - how long it will be on display- can you get good support with minimal stitching
Participant 10. no
Participant 11. If I am not familiar with a treatment or have not carried it out before, I always make a replica or as close as to practice a technique or treatment. This reduces the risk of damage to the original. If the method is unsuccessful, I will look for an alternative and keep trying. You get one chance on the original object, so always prepare. Always research.
Participant 12. This is not your question, but a book that is available in the US is 'Anybody Can Mend Lace and Liens' by Elizabeth M. Kurella. 2001. ISBN 0-9642871-2-9. It might have some ideas that are useful for your research.
Participant 13. I find that floating net behind open areas is usually not a good effect, so I normally trim as much of it away as I can.
Participant 14. Not that I can think of.
Participant 15. Not when working with lace items but I have only done a few treatments. I usually do a few practice samples of new materials a techniques to become familiar with them and choose that method that gives the best result.
Participant 16. Not yet, but nothing I conserved had to withstand more than 5 years of ageing yet.
Participant 17. Yes; sometimes darning was not as invisible as hoped.
Participant 18. I have corrected other conservator's work, where the chosen materials produced an unsatisfactory result [dukeries bobbinet and gutterman scala used as attachment thread]
Participant 19. No
Participant 20. Ja då får man ”backa” så att man ej förstör och dokumentera,
Participant 21. Jag har inte tillräckligt mycket erfarenhet av konservering av spets.
Participant 22. Ja. det händer ofta, materialet har sina hemligheter som man inte alltid kan förutse. Särskilt färger kan vara förrädiska, så något man lärt sig är att testa testa, det är alltid värt besväret. Gällande spets, nej, där har jag inte konserverat tillräckligt många föremål för att ha något att tillföra.
Participant 23. Ja som i mitt första exempel. Spetsen var alldeles för skör och behövde kapslas in men det bästa hade varit att inte ställa ut tröjan med spetsen.
Participant 24. Inte direkt. Ett stödtyg syns såklart på nära håll men kan gå att få förhållandevis osynligt. Eftersom det händer så mycket i en spets går det att arbeta med den utan att en lagning sys. Tvärt om är det väldigt svårt att hitta var lagningen av spetsen finns.
Participant 25. Ja. Våtrengöring och blekning har inte alltid gett det fläckfria resultat som jag hoppats på.
Participant 26. Ja, men inte vad gäller konservering av spets, med reservationen att jag inte har sett föremålen sedan jag konserverade dom.
Participant 27. Material måste vara mycket tunt. Grövre tråd / bakomliggande stödtyg ser klumpigt ut.
Participant 28. Sällan.
Participant 29. Tycker det är svårt att freestyla lite som man kanske måste när det inte är vinkelräta trådsystem som i tex en väv. Det är svårt att få det snyggt.
Participant 30. Nej

Participant 31. Jeg har erfart at metallblonder kan være svært skjøre, og ikke mulig å forme uten at de brekker av. Da har jeg noen ganger valgt å dekke blonden med et innfarget nylonnett i stedet, for å sikre det løse og skjøre til underlaget samtidig som blonden er minst mulig håndtert. Dette har gitt ok resultat.

Participant 32. Nej (n/a)

Participant 33. nej

Participant 34. If using wrong type of thread or thickness, that consolidation stitches looked too invasive

Participant 35. For ca. 15 år siden blev jeg præsenteret for en afhandling om 'elektrolysebehandling af sølv og guldtråd' tilsvarende ovenstående knipling - af Bodil Taarnskov. Jeg har ikke selv benyttet denne metode. Senere har Taarnskov også arbejdet med laser, men jeg har selv tænkt at det også er en etisk diskussion, man bør have forud for anvendelsen af disse metoder.
Laser cleaning of tarnished silver and gilt threads in silk textiles Taarnskov, B., Paraskevi, P., Bredal-Jørgensen, J. & Radvan, R. (red.), 2011. 7 s. Publikation: Konferencebidrag › Paper › Forskning › peer review
Electrolytic cleaning of silver- and gilt silver threads in silk textiles: possibilities and limitations Stemann-Petersen, K. & Taarnskov, B., 2006, I: Zeitschrift für Kunsttechnologie und Konservierung. 20, 2, s. 278-290 13 s.

Participant 36. Jag har inte mycket erfarenhet av konservering av spets - så nej.

Participant 37. Did not answer.

Participant 38. Nej

Participant 39. Inte direkt men tycker att det är svårt att få spetsar att se fina ut.

Appendix 3 – Evaluation form

Hej, först och främst vill jag tacka dig för din hjälp och din medverkan!

Din uppgift är att bedöma två olika metoder för att konservera sk. bryggor på en spets och de tre olika trådar som använts för konserveringen. Du ska göra din bedömning utifrån bifogat bildspel.

Bedöm metoder och trådar enbart efter hur du tycker att de ser ut rent estetiskt utifrån nivåerna: bäst, medel och sämst. Eftersom en del av bryggorna bara har lossnat från spetsen och en del har gått av på mitten ser några konserveringar ut att vara lite "tufsiga", specifikt gäller det konserveringar C, D och F. Om möjligt, bortse från detta. Du kan även skriva kommentarer till dina bedömningar, t. ex. varför föredrar du den ena eller den andra. Du får ge samma bedömning för olika metoder eller trådar.

På slide nr 4 och 5 i bildspelet finns alla de olika metoderna och trådvarianterna presenterade så att du enkelt ska kunna jämföra dem med varandra. Om du vill titta närmare på konserveringarna finns de på slide 6–11.

Bedöm rätsida (se slide 4)	A-F	Kommentarer
Bäst		
Medel		
Sämst		

Bedöm avigsida (se slide 5)	A-F	Kommentarer
Bäst		
Medel		
Sämst		

Bedöm trådanvändning metod 1	A-C	Kommentarer
Bäst		
Medel		
Sämst		

Bedöm trådanvändning metod 2	D-F	Kommentarer
Bäst		
Medel		
Sämst		

Tidsuppskattning:
När du fyllt i blanketten, spara och skicka tillbaka dokumentet till mig på fredriksson.a.amanda@gmail.com eller på gusfredram@student.gu.se

Tack igen för din hjälp och medverkan!

Med vänlig hälsning,
Amanda Fredriksson

English translation:
Hi, firstly I would like to thank you for your help and your participation!

Your task is to evaluate two different methods used to conserve so called bridges in a lace as well as three different threads used in the conservation. You will do the evaluation from the attached PowerPoint.

Evaluate the methods and threads only according to how you think they look aesthetically, rating them in levels: best, medium and worst. Since some of the bridges have just come loose from the lace and some have broken off in the middle, some conservation treatments look to be a bit frayed, specifically for conservation treatments C, D and F. If possible, ignore this. You can also write comments on your evaluations, e.g., why do you prefer one or the other. You may give the same rating for different methods or threads.

On slides no. 4 and 5 in the slideshow, all the different methods and thread variants are presented so that you can easily compare them with each other. If you want to take a closer look at the preserves, they are on slides 6-11.

Evaluate right side (see slide 4)	A-F	Comments
Best		
Medium		
Worst		

Evaluate wrong side (see slide 5)	A-F	Comments
Best		
Medium		
Worst		

Evaluate thread use method 1	A-C	Comments
Best		
Medium		
Worst		

Evaluate thread use method 2	D-F	Comments
Best		
Medium		
Worst		

Estimated time:
When you have filled in the form, save and send the document back to me at fredriksson.a.amanda@gmail.com or at gusfredram@student.gu.se

Thanks again for your help and participation!

Kind regards,

Amanda Fredriksson

Replies Evaluation Form

Informant 1

Bedöm rätsida (se slide 4)	A-F	Kommentarer
Bäst	E	
Medel	B, C, D, F	
Sämst	A	

Bedöm avigsida (se slide 5)	A-F	Kommentarer
Bäst	D, E, F	
Medel	B, C	
Sämst	A	

Bedöm trådanvändning metod 1	A-C	Kommentarer
Bäst	C	
Medel	B	
Sämst	A	

Bedöm trådanvändning metod 2	D-F	Kommentarer
Bäst	F	
Medel	D, E	
Sämst		

Tidsuppskattning: 30 minuter

Informant 2

Bedöm rätsida (se slide 4)	A-F	Kommentarer
Bäst	B.F	
Medel	E	
Sämst	A.D	

Bedöm avigsida (se slide 5)	A-F	Kommentarer
Bäst	B.F	
Medel	E	
Sämst	A	

Bedöm trådanvändning metod 1	A-C	Kommentarer
Bäst	B	
Medel	C	
Sämst	A	

Bedöm trådanvändning metod 2	D-F	Kommentarer
Bäst	E	
Medel	F	
Sämst	D	

Tidsuppskattning:

Informant 3

Bedöm rätsida (se slide 4)	A-F	Kommentarer
Bäst	E F D	Den langetterade tråden syns minst
Medel	B C	
Sämst	A	Väldigt synlig langett, grov och glansig tråd

Bedöm avigsida (se slide 5)	A-F	Kommentarer
Bäst	C D F	C ser lite tuffsig ut men diskret lagning, D o F syns ju den grövre tråden och stör lite men det ser ändå prydligt ut.
Medel	B E	Langettsömmen framträder som öglor
Sämst	A	Ser klumpig ut och för glansig

Bedöm trådanvändning metod 1	A-C	Kommentarer
Bäst	C	Tråden smälter in bäst med spetsen
Medel	B	Synlig langett men stygnen blir prydliga
Sämst	A	För grov och glansig

Bedöm trådanvändning metod 2	D-F	Kommentarer
Bäst	F	Lingarnet passar bra till spetsen och stabiltexen ser ut att gå att dra åt bra.
Medel	D	Moulinegarnet för blankt men ser ut att vara bra att sy stabiltexen mot (går att dra åt bra).
Sämst	E	Ser ut som att stabiltexen inte går att dra åt lika bra-ögglor.

Tidsuppskattning: 40 min.

Informant 4

Bedöm rätsida (se slide 4)	A-F	Kommentarer
Bäst	F, E, D	Alla dessa var fina på rätsidan och relativt likvärdiga.

Medel	B	Langettsömmen är väldig tydlig i B
Sämst	A	Langettsömmen är tjock och klumpig.

Bedöm avigsida (se slide 5)	A-F	Kommentarer
Bäst	F, C	Både visar en fint homogen spets.
Medel	B, D	
Sämst	A, E	

Bedöm trådanvändning metod 1	A-C	Kommentarer
Bäst	C	Lintråden smälter bäst in i både färg och glans. Bra att inte se någon tvinnad tråd
Medel	B	Tror att det framförallt är färgen som sticker ut. Den är lite lite ljus. Bra trådtjocklek annars. Kanske stör tvinningen lite, men inte så mycket.
Sämst	A	Moulinégarnet är lite för glansigt, för tjockt och har för tydlig tvinning för att integreras med spetsen.

Bedöm trådanvändning metod 2	D-F	Kommentarer
Bäst	F	Se tidigare svar ovan.
Medel	D	I D fyller moulinégarnet ut på ett förvånansvärt bra sätt.
Sämst	E	Medan bomullstråden i E är lite slät/stram.

Tidsuppskattning: 45 min

Appendix 4 – Evaluation PowerPoint

Hej, först och främst vill jag tacka dig för din hjälp och din medverkan!

I denna PowerPoint kommer du att se sex slides med 6 olika konserveringar av bryggor på en spets, dessa visar både fram- och baksida efter konservering.

Jag har använt två olika metoder och båda metoderna har utförts med tre olika slags trådar.

- 40/2 lintråd – 2 trådar drogs ur och användes
- 140/2 egyptisk bomullstråd – hela tråden användes
- Moulinégarn – en tråd drogs ur och användes

Metoder:

Metod 1: Bryggor gjorda och fastsydda med samma tråd. Slide 2.

Metod 2: Bryggor gjorda av tråd applicerad på baksidan och fastsydd med en tråd dragen ur Stabiltex. Slide 3.

Din uppgift är att bedöma två olika metoder för att konservera sk bryggor på en spets och de tre olika trådar som använts för konserveringen (görs i separat word-dokument).

Du ska bedöma metoder och trådar enbart efter hur du tycker att de ser ut rent estetiskt, utifrån nivåerna: bäst, medel eller sämst. (Eftersom en del av bryggorna bara har lossnat från spetsen och en del har gått av på mitten ser några konserveringar ut att vara lite "tufsiga", specifikt gäller det konserveringar C, D och F. Om möjligt, bortse från detta. Skriv gärna kommentarer till dina bedömningar.

Du får ge samma bedömning för flera metoder eller trådar.

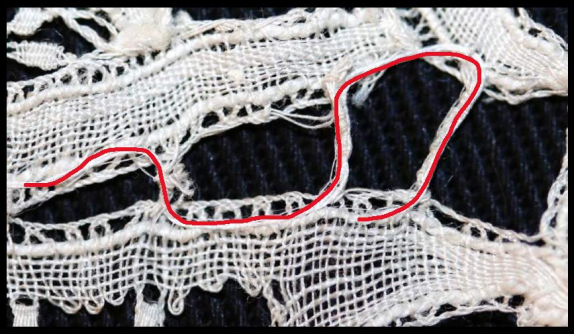
På slide nr 4 och 5 finns alla de olika metoderna och trådvarianterna presenterade så att du enkelt ska kunna jämföra dem med varandra. Om du vill titta närmare på konserveringarna finns de på slide 6–11.

Metod 1

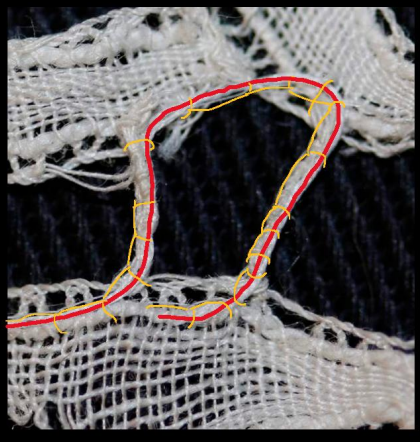
Bryggor gjorda antingen av lingarn, bomullstråd eller moulinégarn. Tråden lades över den trasiga bryggan och fästes med ett stygn i spetsen och med samma tråd säkrades den nya tråden till den trasiga bryggan med knapphålsstygn (langettstygn).

Detalj

Metod 2



Brygga gjord antingen med lingarn, bomullstråd eller moulinégarn (röd linje) . Tråden lades på baksidan av spetsen och syddes sedan fast med Stabiltex (gula linjer) med knapphålsstygn.
Den röda linjen i båda bilderna visar hur tråden lades över de trasiga bryggorna i ett stycke. De gula linjerna i den högra bilden föreställer knapphålsstygn sydda med en tråd dragen ur Stabiltex. Denna tråd säkrade de nya trådbryggorna till de trasiga.



- Lingarn, egyptisk bomullstråd eller moulinégarn.
- Tråd dragen från Stabiltex.

Rätsida

A

B

C

D

E

F

Avigsida

A

B

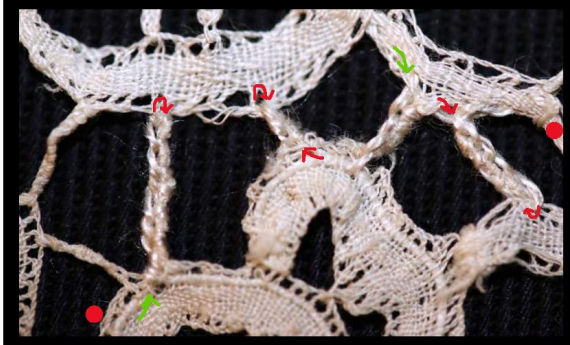
C

D

E

F

Metod 1: A. Bryggor i moulinégarn sydda med knapphålsstygn



Rätsida

Avigsida

Trådens startpunkt och riktning (det finns två gröna pilar pga att positionen av de trasiga bryggorna gjorde att det var enklare att starta två gånger)

Visar vilka bryggor som konserverats samt trådens riktning

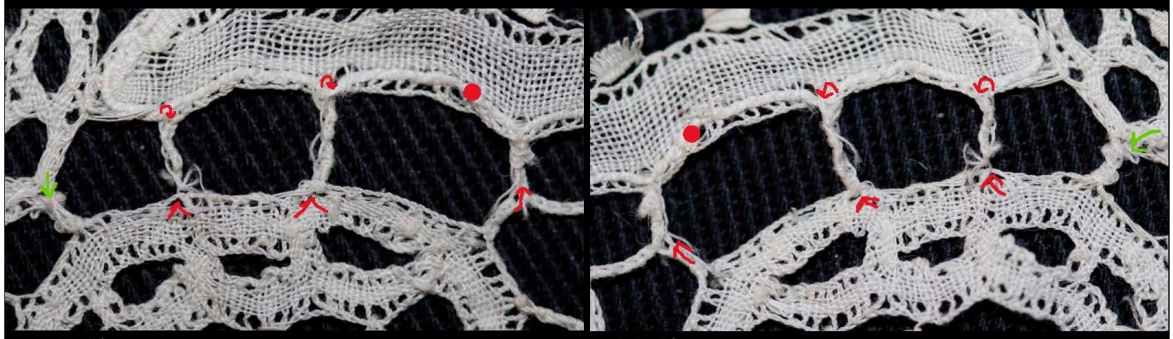
Trådens avslut

Metod 1: B. Bryggor i egyptisk bomullstråd sydda med knapphålsstygn

Rätsida Avigsida

Trådens startpunkt och riktning
Visar vilka bryggor som konserverats samt trådens riktning
Trådens avslut

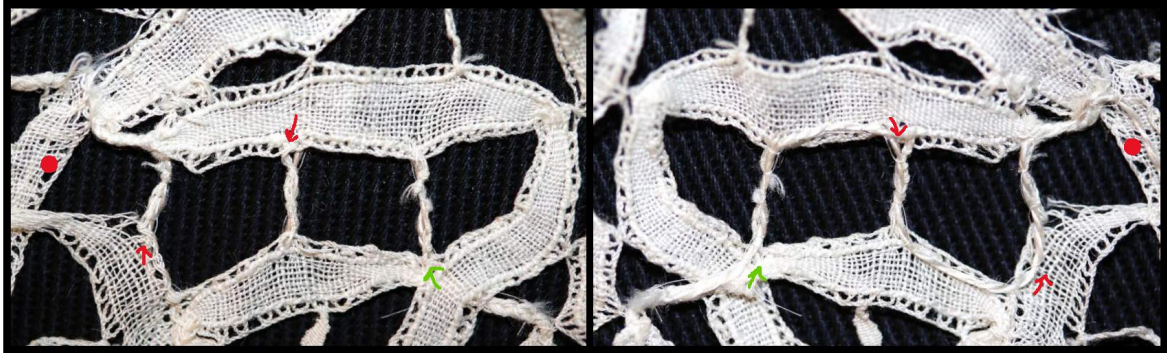
Metod 1: C. Bryggor i lingarn sydda med knapphålsstygn



Rätsida Avigsida

Trådens startpunkt och riktning
Visar vilka bryggor som konserverats samt trådens riktning
Trådens avslut

Metod 2: D. Bryggor i moulinégarn fastsydda med 1 tråd Stabiltex



Rätsida Avigsida

Trådens startpunkt och riktning
Visar vilka bryggor som konserverats samt trådens riktning
Trådens avslut

Metod 2:
E. Bryggor i Egyptisk bomull fastsydd med 1 tråd Stabiltex

Rätsida Avigsida

Trådens startpunkt och riktning
Visar vilka bryggor som konserverats samt trådens riktning
Trådens avslut

Metod 2: F. Bryggor i lingarn fastsydd med 1 tråd Stabiltex

Rätsida Avigsida

Trådens startpunkt och riktning
Visar vilka bryggor som konserverats samt trådens riktning
Trådens avslut