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**Collaborating with a textile artist**

Multidisciplinary interactions between textile art and music composition

Written part of the degree project
Following scores and/or recordings are part of the documentation:
  * Five-Minute Forests
  * Five-Minute Forests II
Abstract

The aim of my degree project has been to study the process of combining two artistic disciplines, music composition and textile art. My partner in this collaboration has been Finnish textile artist and clothing designer Riikka Peltola. In the text I set out to answer the following questions: What methods are there to work with music and textile art? How can textile/knitting patterns be translated into music? How to deal with the problem of the language barrier between a composer and a textile artist, and between music and textile art? In addition to a brief overview of relevant projects by other composers and artists, two related works which are part of my degree project are examined: an acoustic concert piece titled Five-Minute Forests and an installation piece Five-Minute Forests II consisting of electroacoustic music played back through headphones and a textile sculpture made by Peltola. Based on the review of the processes, there are two primary ways of working: One is establishing so called loose connections between music and the textile element – for example, agreeing on common themes and concepts but not having the musical and textile objects correlate in a constant way. The other is mapping the music to the textile element such as a textile pattern, for example, in a way in which the musical objects and textile objects do correlate in a constant way. Of the two works which are part of the degree projects, Five-Minute Forests is based on conceptual discussion between me and the textile artist. In the installation piece, I employ both a loose connections approach and a mapping-based approach. The language barrier proved to be challenging to break within the time allocated to the project.
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1. Introduction

1.1. Background and purpose

The aim of my degree project has been to study the process of combining two artistic disciplines, music composition and textile art. Throughout my education, I have been aware of how engaging in multidisciplinary collaboration has given me compositional tools and enriched my musical vocabulary in a way that solely focusing on writing concert music might not have. I have previously written two Bachelor’s theses about creative collaboration between a composer and at least one artist working within another discipline. In those texts I focused on studying the quality of collaborations I participated in from the perspective of various theories on creative collaboration¹ and, respectively, how the creative end result was affected by the chosen form of collaboration².

This time I have been interested in looking at the challenges of the creative process itself rather than what type of a collaboration ours was or how the type of collaboration employed played into the results. Combining artistic disciplines such as music and film or music and dance is more common both in academic literature and in practice, while it has proven to be more difficult to find examples of collaborative efforts between art music and textile art. There seems therefore to be more ground to cover surrounding the cocreation and coexistence of the artistic mediums.

1.2. Works included in the degree project

There are two finished works connected to this text and to the degree project:

1. *Five-Minute Forests II*³

The installation piece consists of electroacoustic music played back through headphones and a textile sculpture made by textile artist Riikka Peltola, and it is presented to the public in installation format. In this work, the music has a close relationship with both the underlying structure and the finished texture of the textile sculpture.

2. *Five-Minute Forests*⁴

I have also composed an acoustic concert piece for players from the Swedish chamber ensemble KammarensembleN, titled Five-Minute Forests, inspired by the initial conceptual discussions between me and Peltola. In the case of the concert piece, the connection to the textile element of

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the collaboration is looser: there is no direct relation with the materials connected to the textile sculpture, such as the knitting pattern.

1.3. Method

In this text, I will describe the working process in detail, focusing on both the acoustic concert piece Five-Minute Forests and the multidisciplinary piece Five-Minute Forests II containing the music and the textile sculpture. I will use the two works in this text to highlight different aspects of working with music and textile art, and more generally, different ways of collaborating with an artist from another creative discipline. I will draw upon examples of multidisciplinary artistic collaborations involving a composer and at least one other person, and instances where music and some other art form have been combined by one person alone. I will then analyse and discuss our working process in the light of the examples.

Referring to my earlier thesis texts on Bachelor level, our model of working together is collaborative. According to Sam Hayden and Luke Windsor, a composer can engage in three different forms of collaboration, directive, interactive, and collaborative. The collaborative form of working means there is no hierarchy between the collaborators and no part is in the position of ruling over others. Looking also at Vera John-Steiner’s theories on patterns of creative collaboration, our collaboration most resembles complementary collaboration. Essential characteristics of complementary collaboration are recognition and instrumentalization of complementary expertise, disciplinary knowledge, roles and temperaments to pursue a common goal.

My partner in this collaboration has been professional Finnish textile artist and clothing designer Riikka Peltola. We had not worked together in the past, but we have been friends for many years. For the purposes of this text, it can be stated that Peltola does not have any background in music. Similarly, I had very little experience in or knowledge of knitting techniques and textile art in general before starting this project. As both Peltola and I lacked even the most fundamental knowledge of the technical aspects and vocabulary of each other’s areas of expertise at the beginning of our collaboration, a section of the text exploring our working process will be devoted to describing attempts to solve this language barrier.

1.4. Research questions

I set out to answer the following questions in this text by examining the working process:
1. What methods are there to work with music and textile art?
2. How can textile/knitting patterns be translated into music?
3. How to deal with the problem of the language barrier between a composer and a textile artist, and between music and textile art?

6 V. John-Steiner, Creative Collaboration, 2000, p. 197-200.
1.5. Definitions

There are two concepts and terms which come up frequently in this text: mapping and something I have chosen to call loose connections. By mapping I mean the process of assigning musical parameters to particular objects in another medium. For instance, a hole in a knitted garment could be interpreted as a general pause in a musical composition. According to The Oxford Handbook of Computer Music, simple mapping implies one-to-one correspondence between objects, while complex mapping involves complicated schemes and may diffuse the relationship between the objects. Composer and textile engineer Medekšaitė writes, also referring to the definitions above: ”A simple mapping tends to be immediately understood, for example, a row of equally spaced lines across a weave pattern could be mapped into music as a pulse. A complex mapping involves more complicated matrices or algorithms, where the mapping from the visual pattern is not such an immediately direct one-to-one translation into sound. Both ways of mapping can be used for translating textile fabric into sound, reflecting particular approaches and aesthetics.”

By loose connections I mean a process in which musical parameters are not assigned to any particular objects in the other medium(s) in a way in which the connections between the objects remain constant. A conversation between a composer and a visual artist can inspire both to draw even detailed ideas from, say, the appearance of tree branches, but for example the musical notes and the position of leaves on the branches do not correlate in any constant way. Some texts I have read on the subject of music composition and textile art and interdisciplinary collaborations in general, words like intuitive or creative are used as an antonym of mapping, but in my opinion these could be confusing as mapping could and probably will include intuitive and creative decisions.

As will be explored in this text, mapping and loose connections are by no means mutually exclusive in a work.

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2. Artistic context

2.1. Composition with loose connections between musical and non-musical elements

A famous example of a collaboration in which two or more artistic disciplines coexist without any mapping is composer John Cage and choreographer Merce Cunningham’s output. During their creative life, Cage and Cunningham made a series of works in which the two artists did not share with each other what they were making until they were finished with the process. When the music and the movement were brought together on stage, there were no planned ways in which the two disciplines would interact during the performance: movement, sound, and décor were “all conceived and executed independently of one another, adamantly refusing to meld into a fixed, organic whole”.⁹

In more contemporary times, Icelandic composer and musician Jóhann Jóhannsson and German painter Thilo Heinzmann’s collaborative project 12 conversations is an example of an approach where the final output is based on conversations which do not only touch upon on the process of creating the piece, but for example politics and the personal lives of the artists.

The artists’ four-year dialogue began with the composer and painter agreeing on a Heinzmann work that would hang on the wall of Jóhannsson’s studio while he wrote the music (a detail of the painting appears on the cover of this recording) and concluded with this twelve-movement string quartet.

But the collaboration was not simply about the final product. “On one level it is a collaboration between composer and artist,” Richard Thomas explains, ‘but its true form is neither music nor painting; it’s communication.’ Most of the actual conversations that inspired the piece took place in Berlin. Heinzmann, Jóhannsson and Thomas met, he says, ‘ten or eleven times at least, and the conversations ranged from the conceptual to the political to the deeply personal.’ Whether there were actually twelve conversations is beside the point: the work’s twelve movements don’t correlate to specific discussions, Thomas says, but collectively offer ’an emotional record of the friendship that grew up between the three of us.’

Jóhannsson, who had worked with several string quartets in the past, agreed, and the 12 Conversations with Thilo Heinzmann quickly took shape. The movement titles are suggestive; they do not refer to literal conversations. The mood is restrained, and often melancholy. Richard Thomas noted a similarity between the music and the art that inspired it. 'The delicacy of Jóhann’s music is a response to the delicacy of Thilo’s paintings,’ he says. 'They were both

Taking existing forms and changing them slightly, so you’re not sure you’ve seen or heard something like this before.\textsuperscript{10}

Moving toward the theme of textile art, Morton Feldman’s \textit{Coptic Light}\textsuperscript{11} for orchestra is inspired by early Coptic textiles. In the piece, Feldman employs subtly variating repeating patterns as a response to the aesthetic and texture of the textiles. As Egidija Medekšaitė notes, instead of a direct, algorithmic mapping method, "Feldman’s transformation process relies on a more intuitive/creative approach when transforming textile pattern into sound"\textsuperscript{12}.

\section*{2.2. Composition by mapping}

The latter half of the 20th century saw more and more composers taking on composition techniques involving mapping processes. For example, musical serialism can be considered a form of mapping. In Pierre Boulez’s serialist works musical parameters such as pitch, rhythmic values, articulations and dynamics are determined by tone row matrices. As there are 12 different values in one row of the matrix, Boulez assigns 12 different note durations and twelve different dynamic levels, for instance, to the values, and the order of those values in the matrix then governs the order in which they appear in the music.\textsuperscript{13}

Iannis Xenakis combined in his music his experience as a composer and architect. For instance, in the piece \textit{Metastasis}\textsuperscript{14}, Xenakis presents musical equivalents to geometric concepts, such as the hyperbolic paraboloid. Xenakis achieves this by sketching the musical material on a ruled surface where the horizontal axis represents time and the vertical axis represents pitch. In his own words, Xenakis explains how multiple short glissandi and a multitude of pizzicati on strings are used to create continuous textures which are needed to accurately represent the mathematical ideas. Ultimately, it was not to remain a one-way correlation of geometric shapes that influenced the music, but also the other way around: Xenakis provided a design for the Philips Pavilion at Brussels World’s Fair in 1958 based on \textit{Metastasis}.\textsuperscript{15}

\subsection*{2.2.3 Egidija Medekšaitė and mapping weaving patterns into music}

In her dissertation Egidija Medekšaitė explores the subject of connecting textile fabrication and music composition\textsuperscript{16}. Based on her knowledge of textile design and engineering, Medeksaite created textile patterns and transformed them into various musical parameters. While Medekšaitė

\begin{thebibliography}{16}
\bibitem{12} Medekšaitė, p. 8.
\bibitem{14} I. Xenakis, \textit{Metastasis}, 1955.
\bibitem{16} Medekšaitė, \textit{Mapping Textile Patterns into Sonic Experience}, 2016.
\end{thebibliography}
does not engage in a collaboration with another artist, her work is relevant for this text in that she makes the two artistic mediums interact with each other.

Medekšaitė utilizes weaving patterns specifically. In her methodology, weaving patterns consist of the primary weave and its variations of transformation. The weave is illustrated as a matrix of black and white squares, denoting warps and wefts (Figure 1). The primary weave, consisting of ten squares on the y axis and one on the x axis, is rotated to create the pattern of the overall textile fabric, consisting of ten squares on both axes. The pattern of overall textile fabric can be turned around by 180 degrees, retrograded, and retrograded and turned around by 180 degrees.\textsuperscript{17}

\textbf{Figure 1.27: (a) Primary weave, (b) the primary weave is shifted by constant positions, (c) the primary weave is shifted by distinct positions: 4, 3, 3, 4, 6, 4, 6, and 5.}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{weave_patterns.png}
\caption{An example of a weave pattern in Medekšaite's dissertation\textsuperscript{18}.}
\end{figure}

Medekšaitė showcases her different solutions to textile-to-sound mapping in seven works: \textit{Textile 3} for four percussionists, \textit{Habotai} for amplified string quartet and piano, \textit{Moorchana} for oboe, bass clarinet, violin, viola, cello, and percussion, \textit{Textile 4} for prepared piano and live electronics of four prepared acoustic pianos, \textit{Nigamagamini} for bass flute and pre-recorded electronics, \textit{Sandhi Prakash} for string chamber orchestra, and \textit{Textile 5} for symphony orchestra.\textsuperscript{19}

The mapping procedures are examined through a set of parameters: structure, harmony, rhythm, timbre, dynamics, and tempo. In many of the works, the primary weave and its transformations dictate aspects such as the structure, rhythmic patterns, and placement of textures in the piece. Meanwhile, in most works presented, the construction of the harmonic content is intuitively decided by the composer.

For example, in the piece Habotai, Medekšaitė chooses to base the harmony on an Indian raga Gobi Kamphoji, consisting of pitches C, D, E, F, G, A, B, and C. According to Medekšaitė, the raga expresses selflessness and peace, and is therefore well suited for the Habotai weaving pattern, which conveys an idea of fragility and transparency. Other parameters of the music are strictly

\textsuperscript{17} Ibid. p. 31.
\textsuperscript{18} Ibid. p. 32.
determined by the weave: The structure is based on the overall pattern on both micro and macro levels, as is the placement of variations in timbre, rhythm values, and dynamics. For instance, one black square is mapped to natural harmonics on strings I and II of the string quartet, two black squares in a row is mapped to natural harmonics on strings II and III, and three black squares in a row is mapped to natural harmonics on strings III and IV, while any amount of white squares in a row is mapped to unpitched events.20

2.3. Hafdis Bjarnadóttir’s knitting pattern-inspired compositions

Another composer to have worked extensively with textile art is Hafdis Bjarnadóttir. Bjarnadóttir has explored all kinds of methods of making music inspired by textile: for instance, she has composed a piece for symphony orchestra with a more direct relationship with a garment and its pattern (Thordis Fichu (row 1-12)21), written pieces with a looser connection with textile, and made a text score which instructs the performers to interpret textile patterns in a live situation (Hyrnan III22).

In Thordis Fichu (row 1-12), Bjarnadóttir draws rhythmic ideas, for instance, from the sound of herself knitting with knitting needles, from the needles hitting each other when knitting a shawl. In the piece, Bjarnadóttir also builds string textures based on the surface patterns of the finished garment. The connection here is visual rather than aural, as it is the groups of written notes in the score which resemble the patterns. As the piece progresses, Bjarnadóttir adds more layers of pitches on top of each other to portray how the shawl is progressing.23

20 Medekšaitė, pp. 49-61.
3. Working process

3.1. Initial discussions

Peltola and I started planning a potential collaboration in late 2021, initiated by me. Two things in particular were on the agenda in these early discussions: Firstly, we made each other aware of how little we knew about each other’s creative fields. Secondly, already at this stage the question of whether to choose a an approach with loose connections between the music and the textile element or an approach based on mapping techniques came up. It has to be noted that, at this point, creating multiple works based on the ideas was not yet considered. Thirdly, Peltola presented her idea of making a so called textile sculpture, rather than a piece of clothing, for example.

It became clear quite soon that we wanted to introduce a thematic concept outside the realms of absolute music and textile as purely a collection of threads in loops. Creating the work only based on internal mapping procedures would potentially have risked leaving the work lacking in meaning. It felt to us at this stage that making a knitting pattern and assigning musical parameters to it without any vision of what to say with the work could have stripped the work of many potentially interesting layers of communication.

3.2. Concept

Both Peltola and I had previously worked on projects which were inspired by plant organism – for example, their construction, appearance, and behaviour – and it felt natural to us to continue working with similar points of reference. We were both impressed by Finnish artists and photographers Ritva Kovalainen and Sanni Seppo’s work, which we stumbled upon by chance. In their collections of works, such as Silvicultural Operations24, they describe in words and pictures how intensive forestry has all but eradicated natural forests in Finland. They also detail old Finnish forest-related traditions which saw forests as places of significant spiritual meaning, stating that that meaning has been lost in the past 150 years.

At this stage I was not sure if the finished piece of music would be presented in a concert situation or not. I was concerned about how or whether to introduce narrative aspects to the piece. This was also connected to questions about whether and in what way the piece would have developmental structures. Intuitively, it felt to me that simply mapping the music to match a knitting pattern, for example, would result in rather meditative music, as in the case of Medekšaite’s textile related works. To counter these concerns I had – Peltola was not worried as she thought static type of music with very subtle development would suit the project well – we

decided to include a narrative about the plant organisms’ reactions to external threats such as forestry and climate change.

To be clear, my concern was not with music of minimal development and lack of clear narrative aesthetically, but with potential practical issues connected to it. I was not sure if such a work would result in a great performance in concert situation, as in my mind there would have been limited rehearsal time with a score full of subtly irregular repetition. One challenge with extramusical sources of inspiration is using them in a way that does not limit musical expression. The music has to make sense musically even when assigning musical parameters to extramusical objects, be it in a loose way or through stricter mapping procedures. It happens easily, especially in the case of acoustically performed concert music, that conceptually inspired compositions become impractical for the musicians to practice and perform – especially if the time allocated to it is limited – if the extramusical element makes parameters such as note durations, articulations and techniques, and phrases unusual.

![Figure 2: Peltola’s early sketches, experimenting with irregular texture.](image)

### 3.3. The language barrier

To remedy the lack of knowledge about what the other part does, we thought of trying out each other’s activities. I watched tutorial videos about the basics of knitting, filmed by Peltola, and took to acquiring knitting tools. My task was to try to knit a small piece of fabric consisting of basic loops. I, in turn, presented some examples of musical notation with audio examples to

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Peltola. I explained how the different symbols related to the sounds we were hearing. Peltola made a remark about how the scores looked a bit like textile patterns.

After brief attempts, however, the experiments were not carried out further. It felt too big a task for both of us to properly delve further into the realm of another field, especially given the time constraints of the project. This was misfortunate, as the difficulties in communicating about the technicalities of both mediums, but especially music, made it challenging to describe ideas and potential issues with different approaches to the collaboration.

Another obstacle during the whole process until the final months was not being able to effectively share proper examples of my ideas for the music so that Peltola could be inspired by or comment on it in some way. It was also challenging to comprehend how the finished pattern or the textile sculpture would look like, as I did not know how artistic, more complicated knitting patterns looked like and Peltola had not sketched the sculpture in any way that could be shared.

3.4. Five-Minute Forests for KammarensembleN

In the spring of 2022, while pondering the open questions related to my and Peltola’s collaboration, I was informed that I would have an opportunity to write a concert piece for the Swedish ensemble KammarensembleN. I started sketching ideas, and realized after some time that I could utilize the conceptual discussions which had taken place between Peltola and I and use the ideas more freely as a basis. In my mind, the plan was not to abandon working with a mapping-based solution, but rather, I started to see the collaboration take two different shapes which could be worked on in parallel.

In Five-Minute Forests, I took the root figures (Figure 3) I had sketched on paper earlier as a response to the narrative ideas Peltola and I had talked about, and proceeded to create a 10-minute piece for mixed chamber ensemble. In the piece, the horizontal content of the music, by which I mean phrasing, melodic and rhythmic aspects, is structured in a way that I find resembles organisms such as roots and mycelia with their intertwined yet independent movements (Figure 4). Central to my thinking was to treat the instrumental parts rather independently, from the perspective of the melodic contours rather than some harmonic scheme laid out beforehand. At times the different lines come together to perform a modal, lyrical phrase (Figure 5), but these instances are approached organically, maintaining the curving, twisting shape of the music.
Figure 3: Root drawings for Five-Minute Forests$^{26}$. 

The form of the piece is based on the idea of a patch of a forest being threatened, then felled, and finally continuing a half-life as clear-cut land. The felling is illustrated by a sudden change in the pace of the music, jagged motifs, and forte dynamics (Figure 6). The rest of the sections retain a more sorrowful feel: the dynamics stay low, never reaching forte again, the tempo is back at the starting tempo. Moreover, constant transitions between techniques such as sul ponticello and sul tasto on the strings, ordinary pitches and harmonics, aeolian and air sounds, and ordinary tones and fluttartongue or tremolo on both the woodwinds and strings are important for the feel of the piece in order to create a living, shifting texture. Overpressure is also used in the string parts, often in combination with an upwards glissando to create a sound like that of a wailing tree.

The textures are not only connected to the thematic concept, but they are also inspired by yarn, the central element of the collaboration. For instance, yarn is often associated with a certain lightness, which the textures in Five-Minute Forests attempt to capture in many sections. Moreover, resembling the idea of building root-inspired shapes, the curving horizontal movements could also be interpreted to loosely mirror how yarn is shaped into different intervoven structures.

Figure 4: "Roots" in the harp solo in Five-Minute Forests\textsuperscript{27}.

Figure 5: Excerpt of Five-Minute Forests\textsuperscript{28}.

\textsuperscript{27} P. Kaasinen, \textit{Five-Minute Forests}, 2022.
\textsuperscript{28} P. Kaasinen, \textit{Five-Minute Forests}, 2022.
3.5. Realization of the installation piece Five-Minute Forests II

In the autumn of 2022, while I was writing the concert piece Five-Minute Forests, Peltola and I settled on using a knitting pattern as the primary means of structuring the music of an installation

piece. The installation piece Five-Minute Forests II would contain music and the textile sculpture. The question of how to control the level of drama in the music still hovered above the project, although having written the concert piece Five-Minute Forests now allowed me to be less concerned about including narrative, programmatic aspects as I had already found an outlet for those thematic ideas. An even more significant idea for the development of the shape and form of the final work was settling for presenting it in installation format and the introduction of headphones as the only means of presenting the music. This allowed the music to be written as a looping electroacoustic piece instead of a piece presented in concert setting with a clear beginning and end. At this point, I chose also to have cello as the primary sound source of the music, its rich, organic tone and flexibility in regards to playing techniques well-suited to pursuing creating the sound or voice of the textile sculpture.

Figure 8: Overview of the finished knitting pattern.\textsuperscript{31}

The simplicity of the software-generated, pixelated pattern caught me by surprise, however. In December, Peltola uploaded a document containing explanations of the differently coloured pixels in the knitting pattern (Figure 8 and 9). The pattern is read in rows of one pixel, starting from the bottom, first from the right to the left, then from the left to the right, and so on. There are only a handful of symbols of different value, and a lot of repetition – something I had not foreseen when examining the pattern sketches (Figure 7). Simply assigning musical events to the few symbols available, possibly in the order in which the pattern is knitted in real life, would have resulted in music that was way too simplistic for our vision. While revealing something about the inner workings of the fabric, this approach would have lost any qualities the finished sculpture would have according to a reference picture of another work by Peltola, such as the organic irregularity and layeredness (Figure 10). For example, had every one of the few colours been assigned to a musical event, be it one note or a sequence of notes or sounds, by means of simple mapping, these events would have been repeated over and over again in the same order.

Figure 9: Finished knitting pattern, detail.32

At first, my plan was to look for a method of finding more data in the pattern, more objects to which to assign musical parameters. I therefore began to study what was actually happening within the pixels. I looked at graphical representations and videos of knitting the different loop types (Figure 11) and drew lines on paper according to the movements of the yarn and the knitting needles in order to understand how exactly the fabric was created. I also looked closely at how the different loop types looked like in their finished form.

Given the small number of symbols and the large amount of repetition in the pattern, I finally gave up the idea of following it in any strict order. Another significant factor in giving up the initial plan of following the pattern pixel by pixel was the desire to create an intimate texture for the music. To convey all the qualities of and events in the pattern, I would have needed to include several musical lines and when recording, tracks, to depict the decrease and increase of loops as part of the overall structure. This, in my mind, would have made the texture of the piece less intimate. The decision allowed me to include input from other sources than only the pattern.

The final musical result is a combination of using structures present in the pattern, being inspired by the texture of the final textile sculpture itself, and using footage filmed during the making of the sculpture. I chose to pick some aspects of the pattern, mainly the loop types, but also incorporate ideas based on the appearance of the illustration of the finished sculpture and the reference pictures of Peltola’s other work. Inspired by Bjarnadóttir’s work, the rhythm of the noisier elements – such as bowing on the bridge and plucking the strings above the nut – is derived from the movements and sounds of the knitter, the knitting machine and the knitting needles.

The different loop types in the pattern are: *knit stitch* (yellow), *purl stitch* (orange), *knit two together* (purple), *slip, knit, pass over* (green), and *yarn over* (blue). The grey areas stand for empty and are not knitted. In the making of the textile sculpture, Peltola uses both machine techniques and manual techniques, but the loops are of the same type regardless of the technique used.

![Figure 11: Graphical representation of how to knit the knit stitch and purl stitch.](image-url)

34 Tyttöjen käsityön opas, Helsinki: Kustannusyhtiö Otava, 1968, p. 84.
To put it simply, the function of the loop types beyond the two basic stitches – the knit stitch and the purl stitch – is to either decrease the amount of loops in a row (knit two together; slip, knit, pass over), or to increase the amount of loops in the next row (yarn over) in order to make a hole in the fabric. Using combinations of these loop types makes the structure and texture of the sculpture appear irregular.

I opted for composing a sort of an aural illusion of how the yarn moves when knitting loops – the visual images of the different loops are laid on a time axis. For the knit stitch, I chose to depict the part of the yarn that rests on the needle as a phrase played as an artificial harmonic, while the yarn not yet on the needle is depicted as an ordinary tone. Both lines make a glissando, the harmonic line starting the glissando ahead of the ordinary line. The ordinary line then makes a glissando back to the starting position ahead of the harmonic line, forming an abstract musical knit stitch (Figure 12). In the case of the purl stitch, these assignments are reversed.

![Figure 12: The musical knit stitch.](image)

The knit two together stitch is depicted by having one line, played as an artificial harmonic, make two consecutive glissando movements, while another, played as an ordinary tone, stays on a pitch through the two glissandi. The slip, knit, pass over stitch, in turn, is a bit more complicated. First, one line makes a glissando without the other line joining. During the next glissando movement, the other line joins as when playing the equivalent of the basic knit stitch. Finally, the line which joined later makes a glissando movement, while the line which started the stitch makes a slightly wider glissando. To simulate the decrease and increase of loops in the knitting pattern, I vary the length of the phrases subtly.

The musical stitches come in a few different harmonic and intervallic situations. These are governed by intuition in relation to the feel the work is meant to have from the perspective of the conceptual and thematic discussions between Peltola and I. I have tried to place the different musical events in the form in a musical way. As stated earlier, there is no structural scheme related to the knitting pattern besides the subtle variations in the length of the glissando phrases in relation to the functions of the different loops. There are pauses of various lengths in the melodic parts of the track in order to represent the empty areas in the knitting pattern.

The music is recorded with microphones close to the sound source to capture as much detail in the sound as possible, such as the noises emanating from the bow touching the strings of the cello. Above, I was describing the idea of limiting the amount of musical lines playing at one time to only one or two instead of attempting to recreate the complex web of loops in the pattern with many musical lines. This has much to do with the desire to make the texture of the music as intricate as possible, mirroring the surface of the yarn. In my mind, recording, say, six or more musical lines or parts recorded in this extremely detailed way would make the noises cancel each other out.

*Figure 13: Illustration of the finished textile sculpture.*

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4. Discussion

By conducting this project, I have gained some insight into the questions I set out to study. By studying examples of collaborations by other artists and by creating two connected works in collaboration with Riikka Peltola, I have learned of multiple ways of working with composition and textile art.

The first research question was, what methods there are to work with music and textile art. Egidija Medekšaite’s work can be placed at the stricter end of the mapping spectrum, the musical parameters in constant, strong correlation with objects related to the weaving patterns. Hafdis Bjarnadóttir’s work employs both mapping techniques and a looser approach, all in all at the looser end of the spectrum. Most of her textile-inspired pieces are still mapping-based, having some sort of direct relation with a specific textile element.

Jóhann Jóhannsson and Thilo Heinzmann’s collaboration, while not connected to textile art, opened an unexpected path: The process of writing the concert piece Five-Minute Forests is an example of a loose connections–approach to creating music based on this type of collaboration. It is an example of a situation where the collaborative partners agree on some basic ideas and proceed then to create a result without engaging in any kind of mapping processes. There were, however, some discussions about how the process of composing the piece was coming along. As in the case of Jóhannsson and Heinzmann’s collaboration37, the finished piece of music is not presented in direct contact with the non-musical element of the collaboration. When Five-Minute Forests is performed in a concert situation, Peltola’s work is not present in any physical way, but it could be mentioned in a programme note.

The second research question was, how textile patterns and specifically knitting patterns could be translated into music. In the installation piece, Five-Minute Forests II, I chose to work with a combination of mapping and loose connections, following Bjarnadóttir’s example rather than Medekšaite’s. The decisions made showcase how mapping can be approached in many different ways. Some musical parameters may be mapped to objects, while many can be left for the composer to work with more loosely. This allows for taking into account thematic aspects, for instance, as releasing the correlation gives room to manoeuvre more freely with parameters such as harmony and structure. While Medekšaitė chooses to map most of her musical parameters to the weaving patterns, I chose to only assign a couple of parameters to the knitting pattern: the contours of the melodic lines and the changes in their length. Given the notably less complex and more repetitive nature of our knitting pattern compared to Medekšaitė’s weaving patterns, it would have been more laborious if not impossible to create intricately mapped music the way she does it based on the pattern alone.

One could ask, why make a version based on mapping techniques at all. Why not only make a piece based on looser connections with the textile element? With textile, I argue, it is possible to get down to structural level in a different way than with, say, film or dance. Knitting, for example, is often based on knitting patterns, which constitute a very clear, almost mathematical structure. This was an appealing aspect of the particular medium to me and Peltola. Previously, I had worked mainly with dance and media art which most often do not have notation in the sense of consisting of simple symbols almost in a digital, ones-and-zeros fashion. For the purposes of the study, a third variant could have been made – one where the textile element was based on musical notation or similar – to perhaps discover more dimensions of the music-textile relationship. However, this was beyond the temporal scope of the project.

That said, it was more difficult constructing the installation piece within the framework of the plans we had at the beginning of the entire collaboration. Looking at the final results, each of the pieces of music came to reflect one of the two aspects of the ideas we initially had. The concert piece is strongly influenced by the narrative themes, while the music of the installation piece does not explicitly bring forward those themes. I found that thinking about the mapping process distracts somewhat from trying to express narrative ideas or even explicit emotional reactions to our themes other than in small glimpses. The concert piece, on the other hand, perhaps manages to capture some aspects of the materials related to the textile element in an even more satisfying way than the music in the installation piece, without any mapping.

Finally, to answer the third research question, I would argue we did not manage to break the language barrier between our respective disciplines. It would have required more time allocated only for this project, which was impossible especially since Peltola is not a student. The closest we got was due to myself taking the time to study the various loop types very closely – a daunting task despite their apparent simplicity – but it proved difficult to communicate detailed musical ideas to Peltola. The only way to do this was to share references in the form of existing music. Had the project been structured differently, with less time allocated to conceptual planning and more time to making experiments with the material, snippets of my music could have been shared at an earlier stage for a better result in communication.
5. Conclusion

The collaboration has opened new avenues in my creative thinking, both through studying existing examples of creative collaboration and through studying our own working process. It is easy for a composer, at least for myself, to intuitively go for some sort of mapping techniques when approaching a collaboration with an artist working within another discipline. This may be due to the nature of notated music as it already makes a connection between sound and written symbols. This is especially true of collaborations involving textile or textile art due to the slightly mathematical nature of the weaving and knitting patterns, for instance, but also of collaborations involving any other artistic medium. When working with, say, video art, the first instinct might be to go for a piece where the music and the visual content are in sync, or at least part of the same audiovisual piece presented simultaneously, while the two elements would not necessarily even have to be combined into one object to be able to create a meaningful end result.

I feel I am therefore better equipped to pursue meaningful collaborative projects in the future. I feel I have a wider imagination when it comes to thinking of the different approaches available. Moreover, both Peltola and I see it as a possibility to build on the prototype-natured piece examined here, possibly by making a bigger sculpture and by expanding the musical scope. I have also learned a lot as a composer of acoustic concert music, as Five-Minute Forests was an experiment in combining compositional ideas such as modal, lyrical instances surrounded by organic textures, that have proved quite fruitful, in my mind, in regards to moving forward.
Reference list

Books, articles, theses


Online videos

Musical works


Other works

