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Handledare: Kim Hedås

Maria Jönsson

Promenade pieces

About graphic scores, connotation and pedestrians

Skriftlig reflektion inom självständigt arbete
Till dokumentationen hör även följande inspelning: Track_4
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Introduction

This thesis comprises of the reflections on my graduation piece *Track_4*, which was performed at Hochschule für Musik und Theater in Hamburg on June 29th, 2018. This piece is a result of two years of studies in the master program: Contemporary Performance and Composition, or CoPeCo, a program that takes place in four different universities and academies in Europe: Eesti Muusika- ja Teatriakadeemia in Tallinn, Kungliga Musikhögskolan in Stockholm, Conservatoire national supérieur de musique et de danse in Lyon and Hochschule für Musik und Theater in Hamburg. This piece is scored for four musicians and four pedestrians and uses a map as a graphic score.

Throughout my whole life I have been interested in maps. I always liked to draw and study maps and look at all the small details: names of cities, coast lines, all the small symbols and the massive distances of thousands of kilometres being scaled down onto a paper no bigger than a fathom. I could not survive in any city without a map, I get lost in my own hometown. Therefore, it was perhaps not too far of a stretch, when my old music school asked me to compose a piece for a concert with students of the music school, that I would choose to do a graphic score based on a map.

Another interest of mine is language and linguistics, which have kindled my interest in the process of reading and understanding a score. Even traditional notation is a kind of code that for uninitiated, i.e. non-musicians, is hard to decode; for example, Arabic or Chinese scripts would be hard to decode for a Swedish person who is used to the Western European alphabet using Latin letters. Graphic scores are of great interest to me, as they sometimes have a code that is free to interpret for the musician. It is not always marked what all the signs and symbols in a graphic score mean. This then leaves it open for the mind of the musicians to freely associate and interpret the signs with sounds that the performer thinks fits to them. Combining these two ideas, maps and graphic scores, resulted in a process leading to the piece *Track_4* performed in Hamburg in June 2018. The score was a map of Hamburg, where the streets are filled with graphical
signs and symbols to be interpreted by four musicians. And to make the map fill its function, there are four pedestrians walking around in Hamburg during the performance and control markers on the score where the musicians are playing.

In this thesis, I will look at this piece with the focus on the graphic score itself and the role of pedestrians as conductors and my role as composer when making decisions on form, starting with presenting some background on graphic, animated and screened scores. Then followed by a brief section about form and the semiotics of graphic scores, and then summarising it around my piece *Track_4* and some final reflections on the process and result.
Graphic scores

Track 4 is primarily a graphic score. This is the foundation of the piece. However, the fact that there are pedestrians controlling the score and their movements are visualised on the score is also a very important part of the piece. However, this is not the first moving graphic score piece of its kind in history, therefore a short background will be discussed on graphic scores and animated scores.

History

The graphic notation (non-traditional notation) started with composers such as John Cage, Morton Feldman, Earle Brown and Karlheinz Stockhausen in the late 50s and early 60s. Many of these composers had close friends who were painters and artists, and often got inspired from how an artwork looked or its function. For example, Earle Brown’s December 1952, he was inspired by the mobiles of Alexander Calder.¹ The graphic notation could be completely free and open like in December 1952 or partly pre-decided by the composer. In one of Morton Feldman’s first graphical notated pieces, Projection I for solo cello, pitch is just indicated as high or low, but timbre and rhythm are fixed.² Since the 60s, many composers have adapted Cage’s and his contemporaries’ school of thought and are composing graphic scores and graphic notation in various forms.³ One more reason for why graphic notation gained popularity was the need to notate the new sounds. If a composer wanted to notate the squeaking sound of a magnetic tape, there was no standard notation of it in existence. It also gave the composers even more tools to explore the new ideas of aleatoric forms (see Form).⁴

² Burkholder. A History of Western Music. 931-935.
³ Burkholder. A History of Western Music. 931-935.
**Animated scores and screened scores**

Animated scores and screened scores came with the possibility of computers, when a machine could generate a score that had one or more changing or moving parameters. The scores can be animated scores, i.e. the notation is changing during the performance, or they can be fixed graphic scores where there is a cursor or marker indicating for the performer where to play in the score. The scores where the notation is changing during the performance are considered to be animated scores, or dynamic scores, whereas the score with fixed graphics but a moving marker is considered not to be animated, but a screened score.\(^5\) Scores shown to the audience have become more and more common with the technical development, which has made it possible for easier solutions with screens and projection. In addition, the improvement of computers’ processors and software, has had a great impact on the possibility to project computer-generated scores for audiences. In the mid-2010s, several animated notation software became readily available and thus made it possible to have screened and animated scores. Since then, projecting scores to the audience has grown in popularity.\(^6\) In my work, this adds another layer to the performance and is very important for the overall concept. The audience can see and anticipate what is going to happen and because the score is filled with graphics, not traditional musical signs, they can try to figure out what the different signs mean and how they work and will sound. They can also guess where the pedestrians are going to walk and imagine how it looks outside where the pedestrians are. This all, naturally, added to the music played by the musicians. If the audience could not see the score, the concept of the graphic score would be lost, as the audience has no idea what is going on, and the music that they can hear without the score could be any sort of piece.\(^7\)

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\(^7\) Hope. “Screen Scores: New Media Music Manuscripts”. 229.
Interpreting a graphic score

How a strictly graphic score should be interpreted depends on the composer’s wishes. There might be different degrees of improvisation in it, but it could also be completely fixed, even though it is probably more common to contain some degree of improvisation in it. To observe one of the most famous graphic scores again, Earle Brown’s December 1952, this score, Brown says, is completely up to the performer themselves to decide how the score should be interpreted and played. Brown has done several graphic scores and some of them are even to be played spontaneously as if it was an improvisation but with some visual directions. Some of these scores, he says, were made in the same spirit; he composed them fast and spontaneously as an improvisation in drawing. On the other hand, there are composers like Anestis Logothetis, a Greek composer (1921-1994), whose scores are to be studied and all signs are to be taken into consideration with great care. Logothetis, having had a quite different method in composing compared to Brown, categorised signs and symbols into three different categories, all with different properties: the first group symbolised pitch; second group: ways of playing, so called associative symbols; and a third category with action symbols to be simulated by the performer on his or her instrument. This leaves some freedom to the interpreter but not to the same extent as in Brown’s scores, but instead creates a stronger bond between performer and composer as the composer has a clearer direction on how the piece should sound without taking away the possibility of own choices from the performer. In Track_4, the performers are free to decide themselves what the signs and symbols mean and to react spontaneously to some signs. This means that, even though I might have had an idea of how things sound, it is completely up to the performer to assign meanings to the signs. This is where association becomes useful and interesting as outlined in the following section.

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Association and connotation

When interpreting a graphic score, if there are none or very few instructions of what the symbols mean, the interpreter is free to decide for themselves what the signs mean. By doing this the interpreter will probably play a sign “as it looks”. This is done by associating the signs and symbols with a sound or idea meaning that the interpreter, a musician, who sees the sign, e.g. a triangle, will most likely associate it with a sound that in traditional notation is notated with a triangle. This process is widely discussed in linguistics, in semiotics especially, where it is known as connotation. The opposite of connotation is denotative meaning, and this means the actual meaning of a word. For example, the triangle: the denotative meaning would be that is a geometrical figure with three corners and three sides, while the connotative meaning (connotation) would be everything else that a triangle is: for a wind player, it could mean to play wind sounds on the instrument, or in other situations a triangle can mean warning: in traffic or on the back of washing liquid for example.¹⁰ This makes graphic notation very interesting and opens up a new connection between audience, performer and composer. Not only will the performer play what the composer has written, but he or she will add to it his or her own interpretation of the score to a much wider degree than with traditional notation. If the score is visible for the audience, this makes it possible for them to both create a relationship with the score (the composer) by seeing it, but also by hearing the performers interpretation of the score and being able to reflect on the performer’s choices.

Form

Form within graphic scores are just as diverse as in any other part of music, if not more. For non-conventional notation where the composer fixes no notation rules, the form pertains another level of freedom compared to traditional notated music. However, the form can take very different shapes depending on the composer’s choices. For example, the previously mentioned *December 1952* by Earle Brown was composed in an aleatoric manner with the help from a program giving Brown numbers, which he used to draw the lines and rectangles to compose the score. However, this was only used to compose the score and give it its visual form. When performing the score, the performer can choose most parameters themselves: how to play the lines and rectangles; in what order; and from where to start and where to end. Therefore, the form can be anything, making every performance highly individual and unique.  

Another composer that must be mentioned in the context of aleatory composition is John Cage. As one of the pioneers in aleatoric composition, he would use coin flipping or other random processes while composing, to get away from his own taste and not making the decision as a composer himself but leaving the decisions to chance and to the performer who would make decisions on how it should be performed.  

On the other hand, there are composers like previously mentioned, Anestis Logothetis, who didn’t want to use chance as part of his compositions. He composed through what he called architectural notation. Using his previously mentioned classified signs and symbols he constructed scores that only together with the performance and during the performance would create the whole piece. In turn, he had pre-decided a much larger part of the form than Brown and Cage for example, thus having a very different goal with his compositions than them. However, these are only a few examples out of an immeasurable number of graphic scores, providing a small insight in how form shows itself in different ways in graphic scores.

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**Form in screened scores and animated scores**

In animated scores and screened scores, the graphics can behave a little differently. In animated scores the graphical notation can change during the performance: e.g. moving or changing shape. Many screened scores and animated scores have a form where they are supposed to be read in a western traditional way: from left to right. There have been several applications developed for screened scores to facilitate the performance of an animated score, for example Decibel player\textsuperscript{14} developed by Decibel ensemble, or quintet.net\textsuperscript{15} developed by Georg Hajdu. Often, as previously mentioned, these programs are especially good at having a cursor or a marker, or a play head, as Cat Hope and Lindsay Vickery call them, moving over the score from left to right, or having the score moving under the play head, indicating where the performers should play in the score. But there are animated or screened scores that have play heads moving in any direction, e.g. play heads as circles in Cat Hope’s and Lindsay Vickery’s piece *Talking board*.\textsuperscript{16} A cursor takes away the decision on form from the performers and returns it to the composer, or a computer if the piece is processed and changed during the performance, or as in *Track_4*, in which the pedestrians take the decisions on the performative form, i.e. the form that hasn’t been decided by the map itself or by me as a composer.

\textsuperscript{14} Cat Hope, Lindsay Vickery. “The Decibel ScorePlayer - A Digital Tool For Reading Graphic Notation”. ECU Publications Post (2013): 1-2.


\textsuperscript{16} Hope. “The Decibel ScorePlayer - A Digital Tool For Reading Graphic Notation”. 2-5.
**Track_4**

*Track_4* is my graduation piece from the CoPeCo-course 2018. The following will discuss further details about the piece, how it works and what was the inspiration and lead up to this piece.

**Overall concept**

*Track_4* was performed in Hamburg on June 29th, 2018 and is for four musicians and four pedestrians. The score is a map over a part of Hamburg and the streets are filled with signs and symbols for the musicians to interpret. The pedestrians’ position is visualised on the score in form of a coloured dot or a marker (a different colour for each different pedestrian). Each musician has a pedestrian to follow on the map and to play after the score where the pedestrian in walking. For scores, see the appendix I-IV.

**Technical solutions**

The piece has a fairly simple, yet complicated, technical solution. Each pedestrian has to have a smartphone connected to internet or a network with an application for sending their GPS location as OSC\(^1\). These applications are of very uneven quality, accuracy and availability, thus together with David Gustavsson, an engineer student and a friend of mine, we built our own android application that can send GPS-location as OSC (figure 1). The pedestrians’ phones send their location to a computer processing the data in Max7\(^2\) and visualises the pedestrians as dots or markers in the score. For this to work, the phones have to be either on the same network as the computer or know the public IP-address and then route the data internally inside the network. The first option, is in general not possible since very few routers can create a network range big enough to cover up a small part of a town, but usually only cover one house. This was solved in different ways during the process of developing this solution, the two best working ones

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\(^1\) OSC, Open Sound Control, is a protocol for communication between computers or other modern technology. More at [http://opensoundcontrol.org/introduction-osc](http://opensoundcontrol.org/introduction-osc). Read 29th of July 2018.

\(^2\) Max7 (Cycling ’74) is a visual programming language for music and multimedia. [https://cycling74.com](https://cycling74.com). Read 29th of July 2018.
were: to connect the phone to a VPN-server\textsuperscript{19} set up by a router and connect the computer to the same VPN-server and thus making the phone and computer appear on the same network. The other solution, used in \textit{Track 4} was to use a server with a public IP-address and route it internally. This worked because of Georg Hajdu’s work with quintet.net and the fact that he had a setup for this situation in Hochschule für Musik und Theater in Hamburg. A picture of the technical setup is to be seen Appendix V.

![Picture of technical setup](image)

\textit{Figure 1: picture of how the OSC-sending GPS-application looks (reconstructed picture, not from a live performance).}

**Technical problems**

The main problem with the technical solution, and therefore the piece itself, was the instability of the networks. If the connection to the network is broken at any point, the piece stops working, and the connection has to be re-established for the pedestrian marker to start moving again. As the system was built for this piece, the only way to re-establish the connection was manually. Also, the smartphone application is built so that the

\textsuperscript{19} VPN-server, Virtual Private Network Server is an extension of a private network over a public network, such as the internet. https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-2000-server/bb742566(v=technet.10). Read 29\textsuperscript{th} of July 2018.
pedestrians can’t see when the connection has been broken, so someone has to see this in the Max-patch and tell the pedestrians to reconnect.

The pedestrians
The pedestrians have a similar function to a conductor, or more an organiser of the piece. They get instructions on how walking will and can affect the piece and decide their own route in the score. The pedestrian starts and ends the piece; by entering the area of the map, the piece starts, and ending the piece through entering the Hochschule für Musik und Theater (how to end the piece has differed among the precedent pieces, as presented in the next part).
**Precedent pieces**

Before delving more into the piece, I would like to provide a brief background on precedent pieces that lead up to *Track 4*. There have been three other pieces based on the same concept made by me, with performers playing from a score in the shape of a map over an area, where a pedestrian is walking and then appearing in the score as a kind of conductor for the musicians.

**Fritjof's saga**

The first piece, made for Lunds Kulturskola (Lund’s school of culture), was performed in February 2017. It was made for any combination of instruments and then performed with two flutes, two violins, two guitars and one pedestrian, all of them between 13-18 years old. The map was hand drawn with three different parts, or voices, for the six players to divide themselves by. The score was made based on the epic of Esaias Tegnér\(^\text{20}\): *Fritjof's saga*. The first verse was translated into graphical representation, and then the text was divided into the different parts. The score controls when the musicians play and the dynamics they are using. The dynamics were controlled by the thickness of the lines, and the playing by a binary principal: if there is nothing (white) then do not play, if there are lines, then play. The pedestrian had two main functions: first, she was the conductor or controller of the piece, where she walked, the musicians played. She started the piece by entering the area of the map and ended it by exiting. For the second function, the pedestrian controlled the sound quality as well. If she turned right, the musicians’ sound should be more traditional, and if she turned left, the players were to go more towards a less traditional, more “dirty” sound, e.g. air sound for the flutes and nail sound for the guitars. Each individual player chose his or her own musical material to put in each street: a tone or a chord or musical event such as a trill. This resulted in the

\(^{20}\) Esaias Tegnér (1782-1846) was a Swedish author and priest who studied and lived some part of his life in Lund. “Esaias Tegnér”. *Nationalencyklopedin*.  
music making very block like changes: each time the pedestrian turned a corner both the sound quality and the sound material changed.

**På vår gata i stan**
The second piece was performed in Kungliga Musikhögskolan i Stockholm for the composer’s festival LjudOljud, April 2017. This piece was performed by four saxophonists: David Bennet, Mikael Emilsson, Daniel Gahrton och Johannes Gammelgaard Lauritsen. The pedestrian was Romina Romay. *På vår gata i stan*\(^{21}\) is a quote I borrowed from the Astrid Lindgren\(^ {22}\) movie *Vi på Saltkråkan* (1969) where one little child says this phrase when she needs to defend something she has done wrong. This I thought was a very suitable name for a piece in Stockholm, since the movie takes place in the Stockholm archipelago.

This score consists of four different signs that are put into four different parts for the musicians, each containing all the signs in different streets, one part for each musician but merged into one score. The musicians decided upon a meaning themselves for each sign, what musical action or material should be used. That meant that each sign had four different sounds and meanings in total. The pedestrian kept the main function from *Fritjofs saga* in how she controlled the piece: entering the area of the map to start the piece, walking a route inside the map and then exiting to finish the piece. She also kept her impact with turning left and right, but instead of affecting the sound quality, she controlled the dynamics in the piece. If she turned right, the players should all go up one dynamic level and play louder, and if she turned left, they went down one level and played softer.

**Le petit plan**
*Le petit plan* was the piece made during the Lyon-semester for a concert in February 2018. *Le petit plan* eludes to the book *Le petit prince* (1943),

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whose author Antoine de Saint-Exupery\textsuperscript{23} came from Lyon. Apart from that, the piece has nothing to do with the actual book \textit{Le petit prince}. \textit{Le petit plan} was written for one musician, live tape and pedestrian, and this time I was playing the flute in the piece myself. A new feature in \textit{Le petit plan} was the sound recordings triggered by the pedestrian. This was a tape-like function which, like the score itself, was controlled by the pedestrian. The sounds had fixed positions in the score, and when the pedestrian walked onto a street, certain sounds were triggered. The signs were different from the ones in \textit{På vår gata i stan} but worked the same way with the musician choosing their meaning.

\textsuperscript{23} Antoine de Saint-Exupéry (1900-1944) was a French pilot and author, born in Lyon and most famous for having written the book \textit{Le petit prince}. “Antoine de Saint-Exupéry”, \textit{Encyclopedia Britannica}. https://www.britannica.com/biography/Antoine-de-Saint-Exupery. Last Updated: Jul 27, 2018.
Compositional process

For choosing where the piece should take place, I started from how I wanted the piece to end. For Track_4 I wanted the pedestrians to enter the concert hall, to make it clearer that this is a live performance, not recordings of the pedestrians’ paths showed in a score. The area for the score had to be the area where the Hochschule für Musik und Theater is situated. This resulted in that the score automatically got split into three parts, because of vertical streets dividing the map into parts. The different parts had different ways of how to interpret them.

The score

There are two kinds of signs in this piece. The first kind has the same function as in *Le petit plan* and *På vår gata i stan*, in which the musicians have to associate a playing technique with the signs they see in the score (figure 2). The other signs are symbols that already have a meaning to us: traffic symbols. Traffic symbols have, however, no meaning in a musical context.

![Figure 2: The different signs for the first part in the score. From left to right: sign 1: “tree branches”, sign 2: “diamond”, sign 3: “dots”, and sign 4: “spiral” or “snail shell”. The names are what I have called them and might refer to them by here. The musicians never got the names, only sign 1, sign 2 etc.](image)

The piece is divided into three parts: first part uses only the first kind of signs, the associative signs; the second part uses only the traffic symbols; and a third part uses a mix of both, or more so, the first kind of signs influenced by the traffic symbols. That means, that the first part is only with fixed sounds, but each musician has chosen their own sound or material based on what they associate with the sign when they see it. The second part
is free in what sounds and material the musicians choose, but they should react spontaneously to the traffic symbols when playing. In the third part, the signs mix and merge, which means that the materials associated with the first kind of signs come back, but since the signs have changed and been combined or influenced by the traffic symbols, the musicians are much freer in how they play compared to the first part. The pedestrians were supposed to be able to affect the dynamics and rhythmic playing of the musicians, with the marker growing and decreasing in size for the dynamics and the marker blinking as a tempo indicator for the rhythm. This was, however, too much information for the musicians to take in while also listening and playing with the other musicians, so this was taken away during the rehearsals.

The pedestrians

The pedestrians in Track_4 were:

- Wendy Liao
- Artur Musalimov
- Naama Freedman
- Hue Trinh Luong

All of them were studying in the Multimedia department in the Hochschule für Musik und Theater. They got instructions for the piece on how they could walk and the form of the piece they had to stick to. They could enter from any street in the first part, walk around in the first part for 10 minutes, then meet at one of the crossings which they had decided on beforehand, walk one street together and then split and walk for 10 more minutes. For the two first parts, the pedestrians could stop and stand still whenever they wanted to trigger a tape with sounds from the area they were walking in, i.e. traffic, birds, construction sites etc., this to have them bring in a bit of outdoors into the concert hall. In the very end of the piece, the pedestrians entered the concert hall from different doors and start walking towards the musician who had been following them during the piece. When the pedestrian walked, the
musician played, and when he or she didn’t the musician was silent. When the last pedestrian was standing by their musician, the piece was over.

The musicians
The musicians in Track_4 were:

- Maria Jönsson (me), flute
- Reuben Fenemore, clarinet
- Gustav Broman, electric bass
- Albin Vesterberg, electric guitar

Reuben Fenemore, I know since a few years back, and he has a background as a classical clarinet player, but has done many different kinds of projects, including improvisation. Gustav Broman and Albin Vesterberg are both jazz musicians whom I met in Hamburg. Together we formed the ensemble that played in Track_4. The actual instrumentation was not as important to me as the fact that the musicians were used to improvisation and wanted to participate, which was the case with all.

The musicians had to interpret the score, following the rules set by the composer. The first thing to do was to assign playing techniques to the different signs in the first part. Because the signs were the same for all musicians, some of them turned out to sound more or less the same, and some a little more different. For example, the second sign, the diamond, had differing sounds while the third sound, the dots, always got a short sound. The reason for this is probably how we are used to reading music. The dot already exists in traditional musical notation and signifies something short there. However, the diamond can also be related to traditional music notation, where it exists as either a symbol for harmonics or as a symbol for a different kind of sounds other than traditional for the note. This can explain the different choices made by the musicians for the diamond, but the similar choices made for the dot.
The concert

In the very concert it all came together quite well. Unfortunately, the pedestrians didn’t stop long enough for the tape to be triggered or the GPS didn’t work well enough for the patch register them as stopped. At some point in the end, one of the pedestrian’s marker stopped in the map because of a disconnection from the application. This led to some insecurity with the musicians and resulted in a non-visual triggered change in intensity for the piece not to die out before the pedestrians could enter the hall and finished the piece. That in its turn, made the audience a little confused, since there were no signs of any changes of such in the score. But when the pedestrians entered the hall, the focus was lifted from the score and into the hall instead, and because of the clarity in the pedestrians’ movements and how that was connected to the musicians, it was easy enough for the audience to understand what happened and that the piece was about to end.
Conclusion and reflections

Here I will present my thoughts and reflections on the process of composing Track_4, the result on the concert and finally some thoughts for the future.

Form

Letting the pedestrians and the city map decide the form of the score is another way of, as a composer, not putting too much of your own taste into a piece, as Cage would put it.\(^\text{24}\) Of course, it is my choice of signs and symbols, and it is I who have decided where in the score they are, however, I do not decide the actual form of the piece as composer. This adds the possibility of endless different performances, as no performance will be the same as the next, as both the pedestrians and the performers have a big responsibility in this piece. To some extent, I would have liked to give the pedestrians even freer hands, and not set up rules of form for them, but as a composer, it is my responsibility that the piece works, and since there was a clear way of ending, there was a need for some ground rules. By having pedestrians, i.e. other performers, deciding the part for the musicians, it creates a new layer of interpretation. It is no longer the composer’s decision how the piece turns out, nor is the musicians, who are only in charge of the musical material and not the form, but a third party are controlling the form of the piece. This still means the form isn’t random but creates a chain of communication: composer – pedestrian – musician – audience. The audience of course gets both the musician’s and the pedestrian’s chain connections, but it is mainly realised through the musician. A possible development for this, would be to create a relationship between the pedestrian and the musician, through letting the pedestrian hear what the musician does and take decisions based on that. This would mean that the pedestrian still takes the decision on the form but can do so based on what the musician is doing, and not having a hierarchical relationship where the

musician can’t influence the pedestrian at all. The reason this hasn’t been realised is because of the technical difficulties, which comes with it.

By letting pedestrians decide the form and the musicians decide the material, and only as a composer give some directions and indications, you give the piece its own life. There are many people involved: four plus four, and together they become modules where one part makes decisions and another part executes it, in its turn making the piece being what it is that very performance. If it would be performed another time, with other people, there is no way the piece would turn out the same once more, even though from the composer’s side, the piece is exactly the same.

The graphics: signs and symbols
The choice of signs and symbols was made by categorising parameters of sounds and then trying to think of different signs that could represent such a sound. For example, what sign could be associated with a sharp attack? By choosing signs based on sound parameters translated into visual parameters, I could imagine how a street in the score might possibly sound when played. However, I also chose signs by not thinking of a sound, but instead thinking of something, for example, something soft or smooth, as a piece of fabric or a smooth form and then make a sign out of this idea. This made the sounds that came out of sign less predictable to me and more of a surprise of what the performers would do with it. The signs that were chosen from sound parameters, made the performers choose more similar sounds or ways to play for that sound, for example the dot was always a short sound and of course also came from the idea of a sound that would be small or short. Signs that were picked without having been translated from a sound, were much more diverse, like the tree branches, that for most of the musicians were sounds that was connected, or longer phrases so to say, but the musical material for these phrases was very divers. This would be explained by that the signs that were adapted from sounds, or an idea of a sound, were just that: adapted from a sound, and as musicians probably have an idea of how they would play a sharp attacked sound, it is easy to connect that to a sign
that looks sharp. On the other hand, when the sign comes from a more visual side, the musicians interpret it differently, because it might not be seen as something soft or smooth by one musician and is then associated and interpreted differently. In the first part of Track_4 both these kinds of signs existed. The second part, where a third kind of signs existed, consisted of symbols that we are used to see in another context, not in music but in traffic. These signs had potential to create a game of how you would react to a stop sign, or to a warning sign of a moose when playing your instrument, but it didn’t quite work out. The reason for this was most likely the freedom that was given in this part. The rules would have needed to be clearer about that the musicians must react to the signs when the pedestrian crosses them, and the reaction should be somehow audible and connected to the sign. The freedom given there, made the musicians forget to react to the signs and the effect of them was lost. With clearer and harder rules there, it would have been a very interesting part of the piece to see how the musicians would adapt to the symbols.

**Final reflections**

This way of composing, relieving the composer of making decisions, is for me an interesting way of composing. By letting the performers take part in the decisions each time the piece is performed, it recomposes the piece for each performance, the same with the pedestrians making the decision on form. However, for avoiding some of the technical problems a better knowledge and development for the application would be needed, so that it doesn’t disconnect as easily and so that the pedestrian can see if it has disconnected. Also, a more stable solution for the Max-patch would be needed, to eliminate technical problems all together. This requires better knowledge about programming and about the specific programs in use. The piece would also need clearer rules and more strict rules to allow the freedom for the musicians and pedestrians that I am looking for. If the rules are the vague, as it seemed to be now, it might make the performer or pedestrian insecure of how to react or perform some parts of the score and
thus making the musical idea vague. This especially when there are so many performers involved. An idea for that would be to let the empty streets, without any signs, be streets where the musicians are allowed to play freely based on what they hear and not what they see (now the empty streets means silence, silence could then be assigned to when the pedestrian is standing still). In this way, I as a composer take bigger responsibility for the overall structure of the piece by making the rules very clear, but still it would open for some complete freedom for the musicians in some places and hopefully encourage the musicians to have bigger respect for the rules in the second part. It would also make the piece more flexible and smooth in the sound development and maybe make it easier for experienced improvisers to feel comfortable with following the signs and rules of the score, but still have some of the freedom they are used to when playing free improvisation. It would also further fully allow the piece to become a new creation based on the participants each time it is performed, but still keeping the signs and concept clear for both for the performers and for the audience, without removing the spontaneity and surprise that may lie within the piece.
References

Bibliography


Articles


**Encyclopediae**


**Other**


Appendix

I. Track_4 - Score

The score for Track_4 (June 2018). Rothembaumchaussee and Mittelweg mark the lines between the different parts.
II. *Fritjof’s Saga - Score*

The score for *Fritjof’s saga* (Februari, 2017). Part 1 is green, part 2 is red and part 3 is purple. The map is over an area in Lund, Sweden.
III. På vår gata i stan - Score

The score for På vår gata i stan (April 2017). The map (score) is over an area in Stockholm, Sweden.
IV. *Le petit plan* - Score

The score for *Le petit plan* (February, 2018). The map (score) is over an area in Lyon, France.
V. Technical setup

Picture of the technical set up at the concert in Hamburg for the piece *Track_4*.

A 1-4: Mobile smart phones (android) sending their GPS-location. Connected to mobile network (3G/4G).

B: Computer receiving OSC-messages over network and running patch for score and sound. Connected to network.

C: Soundcard getting sound from patch.

D: Projector projecting the score.

E: Projector canvas.

F: Mixer (sliders are just there for visual representation, they are not indicating any levels).

G 1-2 (G3-4 not in picture): Four speakers for sound from patch (soundtracks) and amplification of musicians.

H 1-4: Four microphones for amplifying musicians.

I: Stage with musicians on it.
VI. Recording of Track_4