# Masque de Fer: Extended Drum Kit Techniques

Gabriel Couturier & Martin Daigle, 2022
gabriel.couturier.1[at]umontreal.ca
martin.daigle[at]mail.mcgill.ca

For the original, full version of this publication, visit:
https://timbreandorchestration.org/writings/project-reports/masque-de-fer

## Overview

Masque de Fer is a research-creation collaboration which explores and expands on drum kit instrumentation. The goal of this project was to create a resource for composers and performers who wish to explore new sound production methods on a modern drum kit. This online resource—in the form of first-person point-of-view videos, as well as photos—is accessible for download by contacting the authors at the emails above. 48khz audio files and a stereo mix of the recording session are also available for download depending on the needs. To view photos from the projects' recording session, please visit the timbre and orchestration resource via the link above.

The second part of this collaboration resulted in the creation of a new piece for drum kit which features techniques in the online resource. This piece was premiered at the School of Music, Theater, and Art in Örebro University, Sweden on March 17, 2022, is also available later in the module.

## 1 Techniques

### 1.1 Techniques Definition

The Collins English dictionary defines a technique as: "the method of procedure (concerning practical or formal details), our way of using basic skills, in rendering an artistic work or carrying out a scientific or mechanical operation [1]." For instrumentalists, techniques are the methods for sound production which have a direct correlation with the resulting sound and the tone of the performance. Traditional performance techniques are in constant expansion due to the contributions of many creative performers and composers.

**1.2 Extended Techniques Definition**

An Extended Technique is an instrumental technique that deviates from the idiomatic and traditional performance method to create different sounds. These techniques require using the instrument differently than for what it was conceived.[2] Each instrument has its own history of technique extension and instruments such as the piano and the violin have had longer lifespans and an older tradition of performance practice and extended techniques. Being a relatively new instrument, the drum kit's extended techniques were inspired from the older classical percussion, root music such as Blues and Jazz, and intuitively to accompany music in various cultures. Throughout the ages, drummers have contributed to the pallet of extended techniques which eventually become standard techniques.

For the drum kit, techniques of other percussion instruments were integrated in the performance practice and became extended techniques. The cowbell Heel-tip Technique is also found in drum kit performance because the shaft of the stick hits the edge of the cowbell, and the tip hits the center of the cowbell resulting in two sounds which are all controlled by the striking angle. This technique was not necessarily adapted from the cowbell since it is an intuitive way to change drum kit articulation. Modern drummers are constantly fine-tuning the angles intuitively and naturally to increase the subtilities and feel of their grooves. Beyond percussion adaptation and possibly a natural and intuitive progression of drum kit extended techniques, tools and tool-specific techniques from other instrumental families are used in combination with the drum kit instruments (e.g., violin bow on cymbals).

For more inspiration from the drumming repertoire, composers such as Glenn Kotche, Enno Poppe, Emmanuel Scarpa, Alexander Schubert, Ben Wahlund, Nicole Lizée, Larnell Lewis, and many others have contributed to contemporary extended techniques and drum kit repertoire altogether.

**1.3 Drumming Conventions and Background**

The early drum set components were developed from percussion instruments used in military and civil bands in the 19th century.[3] The ensemble featured two percussion parts, one for snare drum and one for bass drum and cymbal. By the 1880s the two percussion parts were performed by one drummer who was now seated behind a makeshift gathering of components. In addition to drums and cymbals, many smaller instruments also called "traps" were added to the kit allowing drummers to perform accompaniments to dramatic action in the circus, silent movies, and radio.

In the 1930s jazz style gained popularity, and companies began manufacturing smaller kits for the performing musicians. In the later 1950s, drums manufacturing companies designed the instruments in a manner that allowed the performers more control over the cymbal and drum sizes and sounds. Continuing through into the 1980s, this resulted in kits featuring many components (e.g., two bass drums five to eight toms, etc.). The contemporary drum kit has shed

many of the extra components yet evolved to become more standardized than a lot of multi-percussion setups.[4] Modern drum kits can typically include Snare drum, 2–3 tom-toms, pedal bass drum, hi-hats, 2–3 suspended cymbals[5]. Due to modern technologies, drums have evolved into electronic drum kits which aims to mimic the sounds and haptic sensation of striking a drum; furthermore, electroacoustic combinations are made possible by drum triggers, microphones, and others.

As presented in this section, drumming conventions are in constant evolution both in terms of instruments and performance techniques. This never-ending evolution is the source of inspiration for this research creation in the hopes to find techniques and textures which will be useful for expanding the vocabulary of modern performers and composers.

## 1.4 Notation

Percussion scores feature many types of notations which are selected to facilitate the communication and learning of each piece. In this context, the challenge was to select a notation system which could feature the various techniques and the intricacies of their sound without over-complexifying the score.

From the various notation possibilities, drafts were made by combining traditional notation and graphic notation which was used in the open score for Masque de Fer. Similarly to the research process, the piece features an open score notation system which allows the performer to keep looking for interesting sounds with the various tools. Some notation is suggested for each of the tools nevertheless, many other methods of notations are possible. More on this research's notation process along with some examples are presented in section 5.

## 2 Tools

During this research, multiple uncommon tools were explored as methods to activate the drum kit. The use of new tools can contribute to the expansion of technique and new sounds. Modern percussionists and drummers frequently use various sticks, mallets, and brushes to generate different sounds; therefore, this project's goal was to expand on traditional tools and experiment with other items.

On June 25, 2021, Martin Daigle performed demonstrations with a series of tools which can be used to expand drum kit performance. The numerous audiovisual examples facilitate understanding of the instrumental technique in a manner that brings the viewer in the performance space to have a clear understanding of each tool's sound possibilities and physicality.

Since the drum kit includes both metal and skinned surfaces, the tools were tested on each surface to evaluate their potential. Each tool reacts differently to each surface and there are

interesting parallels between the tool, surface, and activation region which generate differences in granularity, harmonic spectrum and pitch, producing interesting morphologies[6]. Superposing many of these sounds would then create textures by the process of fusion.[7]

For example, bowing a semi-open hi-hat produced a bright harmonic sound of the top hi-hat and the grainy rattling between the top and bottom hi-hat. Other examples of textures could be generated by bowing a cymbal on a snare drum so the pitch of the cymbal resonated in the snare and activated the snare wires.

Since many options can be viable for notation the examples shown are only suggestions, open for re-interpretation. Extension of these indications to indicate effect or gesture can be written or indicated on top of the staff, or with symbols for example, drumstick-cuica effect:  or can be demonstrated by other means of notation such as graphic notation or others.

## 2.1 Bow
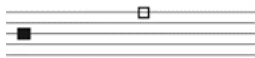
The bow (e.g., violin bow or cello bow) can be used while holding the cymbal dome or lightly placing a finger on the edge of the cymbal so it remains stable. Round surfaces such as cymbals and crotales are not stable; therefore, it is important to have the time to stabilize the bow and the instrument. It is possible to bow many objects; however, parts of the drums such as rims do not produce many sounds and were omitted from this article. It is also possible to use the bow on objects which are on resonating chambers and to use this as an external resonating chamber. (e.g., cowbell, crotale, bell, and others on the snare)

- Bow: Crash (*https://youtu.be/O1zqFCuU_hM*)
- Bow: End-Strike (*https://youtu.be/FRTztl8N4fc*)
- Bow: End-Strike 1 (*https://youtu.be/vEHquitC5Mc*)
- Bow: Hi-hat (*https://youtu.be/L1GAIi3lwm4*)
- Bow: Hi-hat, Open (*https://youtu.be/z9qV3dLXWKk*)
- Bow: Ride (*https://youtu.be/o99zguHaPqU*)
- Bow: Ride, End-Strike (*https://youtu.be/FRTztl8N4fc*)
- Bow: Col Legno, Crash (*https://youtu.be/1CSojiaENd0*)
- Bow: Col Legno, Ride (*https://youtu.be/Cq_vJatuapc*)
- Bow: Col Legno, Ride 1 (*https://youtu.be/ZiT0qEuD8d8*)

***Audio:*** *bow, all track, stereo mixed*
https://tinyurl.com/mwf2ppmd
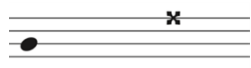
## 2.2 Drumstick



The most common drum-activating tool is the drumstick; therefore, we explored more non-standard ways of drum activation.

### *Rim Squeak*

One extended technique was to use the drumstick to produce a rim squeak. By positioning the tip of the stick and applying pressure to the inner part of the rim in slow rotating patterns, it results in a medium high-pitched sound. This technique is not as easily reproducible, it requires a lot of effort, and the resulting sound is intense. Rosin on the stick tip may help increase the friction and the overall sound.

- Rim squeak (*https://youtu.be/Az33VhfD3s4*)
- Rim squeak, Stick Variability (*https://youtu.be/-Qy7EyuxCiI*)

### *Cuìca effect*

Another technique demonstrated with the drumstick is the cuìca[8] effect. This requires the stick to be in a 90° angle, perpendicular to a drum, while the performer applies a downwards gripping motion. It is important to use a new pair of sticks to avoid getting any splinters.

- Cuìca Effect: Snare (*https://youtu.be/OYVF1zdEsL0*)
- Cuìca Effect: Snare 1 (*https://youtu.be/f-jmj_DT2PA*)
- Cuìca Effect: Tom (*https://youtu.be/D1ebEtpMCkw*)
- Cuìca Effect: Floor Tom (*https://youtu.be/_IxTsOvGOSo*)

### *90° ping*

Striking the drum parallel to the surface is the most common drum and cymbal activation method; however, striking cymbals perpendicular (90° from the cymbal) creates an interesting, focused sound. This technique produces a bright, quick, and controlled attack with a sharp onset and a fast decay.

- 90°Ping (*https://youtu.be/DheI5kpJ5Mg*)

### *Drumstick Tip*

The drumstick's tip can also be used to create a rich harmonic sound by using it to scratch or squeak the surface of a cymbal to activate the harmonics. This technique works best with lathed cymbals which have production groves; furthermore, rosin can be added to increase the friction.
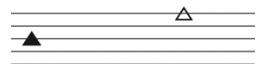
Many of these techniques are also possible with the tips of other sticks including mallets, rake stick, milk frother, and others.

- Drumstick Tip (*https://youtu.be/-ciCcmfk2ik*)

***Audio:*** *Drum Stick, all track, stereo mix*
https://tinyurl.com/ymrrffhm

## 2.3 Hand



Many hand-percussion striking techniques including conga and tabla drumming can be used to activate the many components of to the drum kit. Considering that there are endless rich traditions of hand drumming, this research focuses on the thumb roll, the finger roll (also called tambourine slide), hand roll, and flick techniques.

### *Hand Techniques*

These hand techniques demonstrate methods of applying forward friction to a drumhead to create various medium high-pitched granular sounds. It is also possible to use the hand's flat surface with backward motion. To facilitate the performance, it is possible to add beeswax or rosin to the membranes to increase friction. These techniques are also possible on cymbal surfaces though they are harder to perform and produce fewer sounds because the cymbal is muted with the increased friction from the hand.

- Finger Roll: Full Kit (*https://youtu.be/3LdPHcr_Aic*)
- Finger Roll: Ride (*https://youtu.be/imAsPZUsG6s*)
- Finger Roll: Snare (*https://youtu.be/CfPocPaXDjo*)
- Finger Roll: Snare 1 (*https://youtu.be/tofqMZvoaxA*)
- Flick: Snare (*https://youtu.be/KacabZLGcx8*)
- Hands: Full Kit (*https://youtu.be/Vw3TViwdo1A*)
- Hands: Ride (*https://youtu.be/5pi8XaxYyLM*)
- Hands: Snare (*https://youtu.be/1bU6pOmNwZg*)
- Hands: Under the Snare (*https://youtu.be/pPcBJhVDdfo*)

***Audio***: *The Hand, all track, stereo mix*
https://tinyurl.com/2hxt456r

## 2.4 Superball
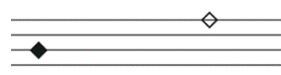
Couturier & Daigle, 2022
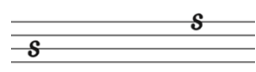
The superball is built by securing a rubber bouncy ball to a malleable fixture. The one used in the examples was made using a bouncy ball and a nail file. The SuperBall can be used on both drumheads and cymbals by varying the pressure, speed, and motion while creating a groaning sound like that of a fingerroll.[9] A useful tip is to clean the SuperBalls with rubbing alcohol to remove dirt buildup and to increase contact surface longevity.

- SuperBall: Crash (*https://youtu.be/h_TIQQKW9pc*)
- Superball: Ride (*https://youtu.be/v-v2G5xOjf0*)
- SuperBall: Hi-hat (*https://youtu.be/hD60N0u6o1k*)
- SuperBall: Snare (Snares-off) (*https://youtu.be/anxguG91c-o*)
- SuperBall: Snare (Snares-on) (*https://youtu.be/PPC2GG7dU9A*)
- SuperBall: Stick Edge (*https://youtu.be/iC0J_rDLZjE*)
- SuperBall: Stick Tip (*https://youtu.be/bc-ox1GOr1E*)
- SuperBall: Sequence (*https://youtu.be/0eDXmIdpNWA*)
- SuperBall: Sequence 1(*https://youtu.be/7sCo3fPcnRY*)
- SuperBall: Sequence 2 (*https://youtu.be/iEwFRQk6Ri0*)
- SuperBall: Floor Tom, Sequence (*https://youtu.be/4-ByKAi7SC4*)

Audio: *Superball, all track, stereo mix*
https://tinyurl.com/jeajjufh

## 2.5 Plastic Brushes

Plastic brushes can be used by holding the brush upwards on a membrane at a 90° angle and applying downwards pressure on the drums. Maneuvering the stick in various directions extends the brushes and can produce aleatoric rhythmic texture. The brushes can be used similarly on cymbals, producing interesting harmonics when they scrape the surface.
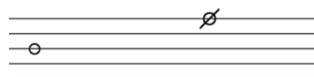
***Plastic brushes examples***

- Plastic Brushes: Snare (*https://youtu.be/sI2tvgyxdOI*)
- Plastic Brushes: Membranes (*https://youtu.be/cWt3XSyziI8*)
- Plastic Brushes: Cymbals (*https://youtu.be/DFNeYRT1fQc*)

***Audio:*** *Plastic Brushes, all tracks, stereo mix*
https://tinyurl.com/3mdbv65u

**2.6 Rake Stick**



The rake stick, also known as the guïro stick, is used by scraping the stick's indents against the edge of a drum rim. This can produce fast or slow granular iterations by varying the pressure and the speed. The pitch changes naturally on the rim by the amount of wood that is in contact with the drumhead. The same sounds are also possible by using the rake stick on a secondary rim, resting one extremity on another drumhead (e.g. Tip on snare head and indents on the rim of the floor tom).

- Rake Stick: Snare (*https://youtu.be/jgyV-yc1XvY*)
- Rake Stick: Snare 1(*https://youtu.be/ShKh37jVIlw*)
- Rake Stick: Snare 2 (*https://youtu.be/DDLaM-vFT2g*)
- Rake Stick: Snare & Tom (*https://youtu.be/obkQQPxUo-g*)
- Rake Stick: Snare & Tom 1 (*https://youtu.be/TRehnu-8x_w*)
- Rake Stick: Snare & Tom 2 (*https://youtu.be/m4nNXtw6oNU*)
- Rake Stick: Snare & Tom 3 (*https://youtu.be/oSVK3zSMu54*)
- Rake Stick: Snare & Floor Tom, Fast (*https://youtu.be/ixSNcbPlLRo*)
- Rake Stick: Snare & Floor Tom (*https://youtu.be/yhBYHzpL2O0*)
- Rake Stick: Snare & Floor Tom 1(*https://youtu.be/qgLQf2venoE*)
- Rake Stick: Snare and Floor Tom 2 (*https://youtu.be/kkOeMktx548*)
- Rake Stick: Floor Tom (*https://youtu.be/38hELVvXsbQ*)
- Rake Stick:  Floor Tom 1 (*https://youtu.be/qgLQf2venoE*)

Many other sounds can be produced by using the rake stick with cymbals. A technique known as the "reverse hi-hat" or "reverse cymbal" can be produced by sliding the rake stick rapidly on the edge of the hi-hat, incrementally augmenting the pressure and muting the cymbal as the stick passes the edge of the hi-hat and as the foot applies pressure on the hi-hat pedal to close it. This creates an effect similar to a sound played in reverse, commonly heard in electronic music.

- Rake Stick: Bell-Snare (*https://youtu.be/f1mBIhlaKck*)
- Rake Stick: Crash (*https://youtu.be/gDoQYgRBoQg*)
-  "Reverse": Crash (*https://youtu.be/O1kiBOrpjiU*)
-  "Reverse": Hi-hat (*https://youtu.be/Ez3MfmHEZZ0*)
-  "Reverse": Hi-hat 1 (*https://youtu.be/yd-KHMk0gKY*)
- Rake Stick: Hi-hat (Semi-Open) (*https://youtu.be/vwFPDs2O3zE*)
- Rake Stick: Hi-hat (Closed-Open) (*https://youtu.be/_G9OXjseUZ0*)
- Rake Stick: Hi-hat (Closed) (*https://youtu.be/34FtYnHZcRI*)

**Audio:** *Rake Stick, all tracks, stereo mix*
https://tinyurl.com/2s4cubw9
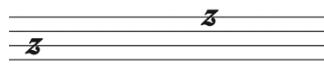
## 2.7 Milk Frother

The milk frother is a small electronic device which rotates at variable speeds. When used with all the components of the drum kit, it can generate a variety of sounds that change due to pressure and location variations. It is possible to use it both in the Off and On state. The different tips and variable speed will modify the overall texture of the sound.

- Milk Frother: Ride (*https://youtu.be/sE2-9vA3JKc*)
- Milk Frother: Ride (off) (*https://youtu.be/Tu76fPdtI8k*)
- Milk Frother: Ride (Tip2) (*https://youtu.be/4lVNMS9MDyg*)
- Milk Frother: Crash (*https://youtu.be/ZmMX8Lm2yJI*)
- Milk Frother: Crash (Tip2) (*https://youtu.be/plk1eoqbWkw*)
- Milk Frother: Hi-hat (*https://youtu.be/dyDkre-iRXY*)
- Milk Frother: Hi-hat (Tip2) (*https://youtu.be/D_WI8B1TUA8*)
- Milk Frother: Snare (*https://youtu.be/R4N6w4k4lYw*)
- Milk Frother: Snare (Tip2) (*https://youtu.be/bBec7E5zLrc*)
- Milk Frother: Tom (*https://youtu.be/_zyUCmus09I*)
- Milk Frother: Tom (Tip2) (*https://youtu.be/UOZcWikgOmA*)
- Milk Frother: Floor Tom (*https://youtu.be/5fn_eSE1rYc*)
- Milk Frother: Floor Tom (Tip2) (*https://youtu.be/MxA7npGZ0YE*)

*Audio: Milk Frother, all tracks, stereo mix*
https://tinyurl.com/f8kj7pps

# 3 Prepared Instruments

Prepared instruments are a combination of one or more tools and instruments that create hybridized sounds due to preparation and modification from its original state. This includes adding objects and contraptions to an instrument or modifying standard aspects to create original textures.

## 3.1 Velcro

To prepare, simply stick a Velcro patch on the selected drumhead(s). Scratching the surface of the Velcro hooks will activate rapid granular iterations amplified by the drum's resonating chamber. The Velcro loops can be applied to an object and be improvised either by using various motions or by sticking and separating the two parts. The Velcro does not affect the drum sound or playability. If the drummer strikes on the Velcro hooks with a regular stick, it briefly dampens the sound of the attack similar to other fabrics and Moongel [10]. It may be preferable to have

the hooks on the head because it produces more grain when scratched; therefore, it allows for more sound possibilities.

- Velcro: Nails (*https://youtu.be/XwzQ4OBj8lA*)
- Velcro: Tool (*https://youtu.be/_00Bw5KgHo8*)

***Audio:*** *Velcro, all tracks, stereo mix*
*https://tinyurl.com/yc2dc6pc*

## 3.2 Double Sided Tape

To prepare, simply add a strip of double-sided tape to the selected drumhead(s). Similar to the Velcro, the effect is created by sticking and removing an object and moving it around the taped surface. This preparation may affect the drummer's performance by restricting their playing area when activating the drums with sticks, although the tape does not affect the sound of the drum drastically.

- Double Sided Tape: Snare (*https://youtu.be/9o_19U8ZLic*)
- Double Sided Tape: Woodblock (*https://youtu.be/6C4gSBcx8Jk*)
- Double Sided Tape: Woodblock 1 (*https://youtu.be/JtuwVF1Je1M*)

***Audio:*** *Double Sided Tape, all tracks, stereo mix*
https://tinyurl.com/223aj746

# 4 The Drum as a Resonating Chamber

As seen in the bowing examples, objects may also be placed on instruments so that the resonance of the object is amplified or modified. This includes metal instruments such as cymbals, bells, cowbells, and other various instruments extending beyond this list.

## 4.1 Kalimba

The kalimba, also known thumb piano, mbira, and others, is frequently used with its traditional techniques; however, when placing it on cymbals and drums, its resonance is modified. By moving the kalimba up and down it is possible to create a wah-wah or tremolo effect. This is especially true when the kalimba has a resonating chamber or is attached to a frame drum such as the one in the examples. It is also possible to create a sympathetic resonance between the kalimba notes and the cymbal or drumhead by holding the kalimba at the right angle and on the right surface.

- Kalimba: Snare (*https://youtu.be/_7eRwR_Rys4*)

- Kalimba: Ride (*https://youtu.be/nL_9FMMQbY8*)

*Audio: Kalimba, all tracks, stereo mix*
https://tinyurl.com/4a9j472t

## 4.2 Cymbals and Instruments

Similarly to the rake stick demonstrations, objects such as bells can be placed and played on the drumhead. Metal objects such as Tibetan bowls, crotales, cowbells and cymbals can also be positioned on a drumhead so that they resonate with the drum chamber when bowed or stricken.

- Resonating Chamber: Bell (*https://youtu.be/RIvOZSsr2GA*)
- Resonating Chamber: Bell 1(*https://youtu.be/_CYD70xQ3X0*)
- Resonating Chamber: Cowbell (*https://youtu.be/Bb7ghOorG8E*)
- Resonating Chamber: Cowbell 1 (*https://youtu.be/bRj7vLAQH4A*)
- Resonating Chamber: Chinese opera hand cymbals (*https://youtu.be/5nmNYAM4wf0*)
- Resonating Chamber: Tibetan Bowl (*https://youtu.be/_Kl_EjEBfQI*)

*Audio: Cymbals and Instruments, all tracks, stereo mix*
https://tinyurl.com/bdf9d4p2

# 5 Creation

During the research phase, some of the extended techniques required certain speeds, pressures, and motions to be activated. If stricken, the instrument would naturally create a fast attack and medium to short decay according to a classic ADSR (attack, decay, sustain, release) envelope. The challenge in creating a notation system for these techniques resides partly in coordinating this natural envelope with traditional notation parameters such as rhythm and dynamic since many of the tools may generate steady dynamic, soft amplitude or aleatoric inner rhythm. Nevertheless, a solution would be to prioritize some characteristics, specifying traits in the key or score or even creating noteheads and graphic notation. In this case, notation may refer to the main gist of the technique giving leeway to the interpretation.
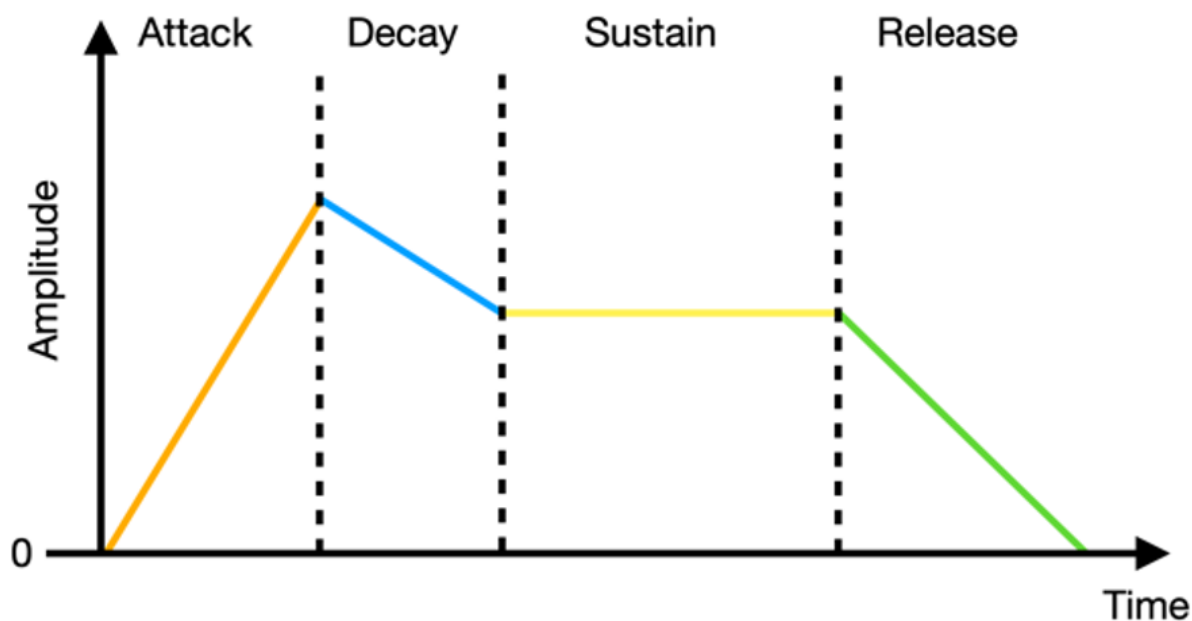
*ADSR envelope*

What makes these extended playing techniques interesting is the ability to have sustained notes. Combined with striking methods, it makes for a very versatile setup either for solo or ensemble performance. This gives performers the option of handling the overall sustain and to combine it with striking techniques. In this way, the instrument can blend with other sustained instruments while switching between the two performance styles. This enables the creation of many textures, beautifully demonstrated in Noam Bierstone's performance of Hanna Hartman's Message from the Lighthouse.

In an interview, Hartman talks about her view of music purely based on sound, inspired by electro-acoustic composers such as Barnard Permagianni. She mentions the use of microphones that enable them to "zoom in" on details which: "help make the sound seem more like a timbre not connected to its source."[11] Hartman then fixes the microphones so that the natural sound is preserved and then listens carefully to how the sounds from the ensemble connect. With this research, the sound recordings were also very convenient for learning the reaction time and envelope while also giving an opportunity to listen to the recordings as sound objects as would electro-acoustic composers through reductive listening.[12]

**5.1 Notation Process**

Working with new sounds, it was important for the composer to understand the performer's technical implications as well as the styles of notation adaptable to the techniques. Since some

extended techniques can benefit from non-traditional notation, some of the first questions during the process of notation were:

Will the composition only include extended techniques?

If not, what kind of notation can serve as common ground for both extend and traditional techniques?

Further discussions between performer and composer initially lead to having a semi-structured approach, integrating both the standard and extended techniques to conventional and non-conventional styles of notation. This way both styles of techniques could be written traditionally and could also indicate improvisation. This then brought another question:

In what way can these improvisations be written and included in the score?

### 5.2 Draft Scores

Many drafts were made to homogenize the mix of notations. Since the envelope could also be sustained for a determined amount of time, the initial drafts presented both traditional notation and improvisations in the form of notes and written text. The examples below present some of the first notation drafts.



*Stick_Tip*　　　　*FingerRoll*　　　　*Laissez-Vibrer*　　　*Velcro; added grain*
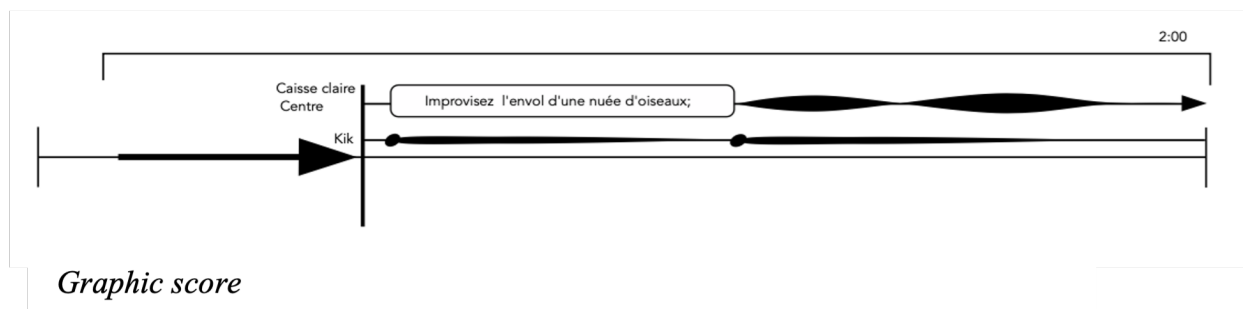
*Changed noteheads, and articulations*



*Written Improvisation and traditional notation*

*Graphic score*

## 5.3 Open Score

Through drafting this piece, the collaborators decided to make an open score for an improvised performance. The idea of a non-linear open score seemed interesting since it offered a lot of freedom to the performer. The score was then conceived and included adding electronics and video projections. The whole thing had a simple display and portrayed a list of the instruments and a guide on how to approach the score in the first few pages.



The score presents a list of choices. Each of these have a musical value. These choices all connect, can be longer or shorter. The interpreter may alternate between these choices and can interpret musical ideas with this selection of tools, by reacting to the videos presented. The tempo is free.

The tool pallet:

| Bow | Stick | Rake Stick | Plastic Brushes |
|---|---|---|---|
| Superball | Woodblocks with double sided tape | Tibetan bowl on snare | Hands |
| Milk Frother | Nails on velcro | Kalimba (on cymbals or snare) | |

*Performance notes*

The piece included three musical values (short, medium, and long) that could then be used in five instances either choosing a tool, choosing an instrument, choosing to produce sound, choosing silence, and choosing to activate video (with a Max patch). Each video clip could be activated in random order and would be projected with its own musical time. The performer could choose how to interact with the patch by performing actions or remaining silent.
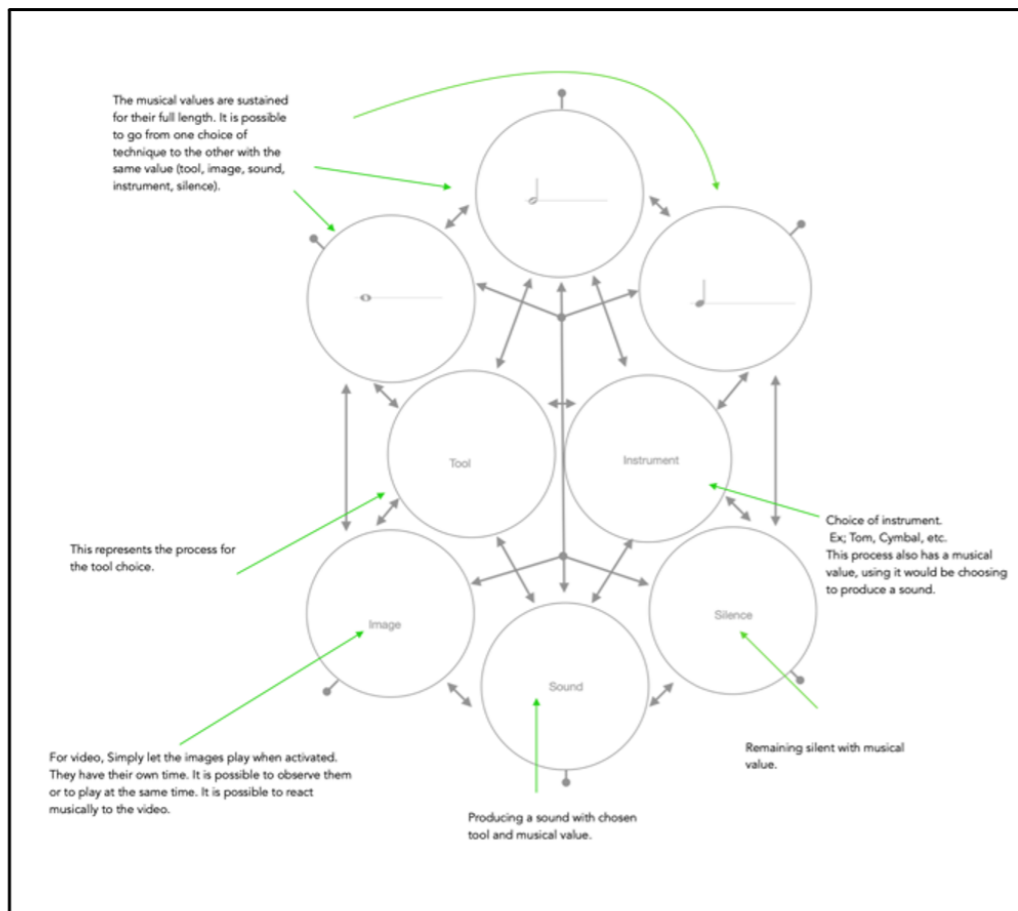
## *Score directions*

The visuals projected were retrieved from the 1963 American movie called Dementia 13, directed by Francis Ford Coppola and Produced by Roger Corman,[13] made available through the public domain.[14] The visuals were adjusted in Max to accentuate textural and temporal characteristics. The chosen images showed a ubiquitous shadow figure and some gloomy scenery which blended perfectly with some of the more austere sounds from the list. The performer could then activate videos which would appear in random order and inspire the interpretation of the score. Most of the playing indications were given verbally which resulted in an improvised performance that even included other musicians and artists well-received contributions to the piece. Many more options for notating these sounds can be explored depending on the style and direction of future works. Musicians are encouraged to explore their own notation by observing some of the performance videos accessible on the TOR module and on YouTube.

**Video:** *https://youtu.be/rfy2ldIxSE4*

## Conclusion

Masque de Fer was a good research opportunity to expand the extended drumming library while generating great material for musicians. Although the idea of extended percussion techniques has been explored with snare drum, multiple percussion, and many other pitched percussion, it is interesting to keep exploring new extended techniques and original methods for applying them to drum kit compositions. This instrument is fueled with innovations from many traditions, and it is interesting to borrow some of these approaches for contemporary composition and research.

Since this research put a focus on the creation of performance material and conceptualising with notation, future proposals could benefit from extensive timbral descriptions and their correlation with performance gesture. This could improve the means of communicating improvisations in the context of creation and writing specific effects. Due to the drumkit's relatively young history in contemporary music, it would also be interesting to see what vocabulary is used throughout the culture of percussionists to describe the drumkit timbres and how these could be joined to extended techniques.

This research experience has proved that there are vast varieties and combinations of sounds that can be produced with an ensemble of drums and that many methods of notation suggest fair territory for musical expression. With this resource, we invite composers and performers to keep exploring.

## Acknowledgments

## Works Cited

Collins Dictionary, https://www.collinsdictionary.com/dictionary/english/technique, Retrieved on March 22, 2022.

Coppola, F., Corman, R. Dementia 13, https://publicdomainmovie.net/movie/dementia-13-0, Retrieved on June 21, 2022.

Clark, P. Hannah Hartman in The Wire, vol. 429, November 2019.

Crouse, R. The 100 Best Movies You've Never Seen, ECW Press, 2003.

Delisle, Julie, Trois perspectives sur le timbre de la flûte traversière : instrumentale, perceptive et computationnelle, Doctoral Thesis, Université de Montréal, 2018.

Kernan, T, J., Drum set, (2013), Grove Music Online. Retrieved March 22, 2022.

Magnusson, Thor, Sonic Writing: Technologies of Material, symbolic and signal inscriptions, Bloomsbury, 2019.

Solomon, S, Z., How to Write for Percussion: A Comprehensive Guide to Percussion Composition, Oxford University Press, 2016.

Thoresen, L. & Hedman, A., Emergent Musical Forms: Aural Explorations, Studies in Music, 2015.

---

[1] https://www.collinsdictionary.com/dictionary/english/technique, Retrieved on March 22, 2022.

[2] Delisle, Julie, Trois perspectives sur le timbre de la flûte traversière : instrumentale, perceptive et computationnelle, Thèse de doctorat, Université de Montréal, Juin 2018, (p.36).

[3] Kernan, T. Drum set, (2013), Grove Music Online. Retrieved March 22, 2022.

[4] Solomon, Samuel, How to Write for Percussion: A Comprehensive Guide to Percussion Composition, Oxford University Press, 2016, (p18).

[5] Solomon, Samuel, (2016), How to Write for Percussion, (p.18).

[6] Thoresen, Lasse, Emergent Musical Forms: Aural Explorations, Studies in Music, 2015, (p.273).

[7] Thoresen, Lasse, Emergent Musical Forms, (p.474).

[8] Cuìca is a friction-activated percussion instrument which is important in Brazilian samba music.

[9] Solomon, Samuel, How to Write for Percussion: A Comprehensive Guide to Percussion Composition, Oxford University Press, 2016, (p.95).

[10] Moongel is a dampening solution used by many drummers to allow the drums to have a quicker decay.

[11] Clark, P. Hannah Hartman in The Wire, vol. 429, November 2019.

[12] Reductive listening is the listening attitude which consists in listening to the sound for its own sake, as a sound object, by removing it's real or supposed source and the meaning it may convey.

[13] Crouse, R. The 100 Best Movies You've Never Seen, ECW Press, 2003, (p.59-62).

[14] Coppola, F., Corman, R. Dementia 13, https://publicdomainmovie.net/movie/dementia-13-0, retrieved on June 21, 2022.