

Babylon Quartet:

Ghosts, Mirrors, and The River

A case study in performance and compositional practices of modern electro acoustic music.

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Title of Research:

Babylon Quartet: Ghosts, Mirrors, and The River

A case study in performance and compositional practices of modern electro acoustic music.

Research Question:

What are some of the important challenges faced in creating and performing works which utilize electronics, and what kinds of performance practices and compositional approaches can be used to mitigate and overcome these challenges?

Summary of Results:

The use of electronics in music composition and performance continues to expand, both in commercially mainstream and artistically niche genres of music. This presents a growing set of demands on classically trained musicians who wish to perform music which uses electronics. This paper is mainly a primary source documentation of performance techniques, challenges and solutions presented by the members of Babylon Quartet in their preparation and performance of an original work for string quartet involving electronics. The piece was written by violist Kellen McDaniel and his brother Marshall McDaniel. It consists of first hand accounts of all four players as well as the two composers, detailing the process of first premiering the work, and then subsequently revising and adapting the work for future performances, as well as relevant technical explanation and documentation. The goal of this research is to provide insight and practical solutions on how some core challenges of electro-acoustic performance can be overcome from both compositional and performance perspectives.

Biography:

Babylon Quartet is a string quartet based in The Hague. Playing together for the past three years, they have been honored as recipients of Het Kersjesfonds Strijkkwartetstipendium as well as winning first place De Grote Kammermusik Prijs - De Doelen. They consist of violinists Leonid Nikishin (Russia) and Danielle Daoukayeva (Netherlands), violist Kellen McDaniel (USA), and Cellist William McCleish (Canada). Kellen McDaniel and his brother Marshall McDaniel are a composing duo from Los Angeles, California. They have composed works for the concert hall and theater, as well as film and television.

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Babylon Quartet: *Ghosts, Mirrors, and The River*

A case study in performance and compositional practices of modern electro acoustic music.

Babylon Quartet is a string quartet who created a new work for themselves involving the use of electronics in performance in 2016. At times both rewarding and immensely challenging, together they confronted the myriad challenges of creating and performing what is sometimes referred to as "electro acoustic" music. The genre of electro acoustic music encompasses a wide cross section of aesthetic styles and technical configurations, and while the works generated by Babylon Quartet may not be representative of the genre as a whole, the kinds of difficulties and solutions presented by their process can be of use and interest to others seeking to leverage the power of electronics for their own performance applications. What follows is largely firsthand accounts of the process of creation, detailing the compositional, audio engineering, and performance practice considerations that shaped the outcome of the new works and their presentation.

Kellen McDaniel - Composer, Producer, Violist

Babylon Quartet began at the Royal Conservatoire of The Netherlands in 2014, when four students from four different countries came together to play some

traditional repertoire and to fulfill the chamber music requirements for their degrees. Emboldened by early success with their first prize at Het Grote Kamermuziekprijs – De Doelen in 2014, the four stuck together. They didn't play any modern music, much less music with electronics until, on a lark, they mailed a proposal to the Classical:NEXT expo in Rotterdam in 2016. For a spot in a showcase at the expo, they pitched a new work for string quartet using cutting edge electronics. The idea was to make a piece that was both artistically and technically innovative, while also being widely accessible in aesthetic, leveraging both the music production tools and the stylistic mediums those tools were created to produce in the production of a work fit for both the concert hall and beyond.

The proposal was accepted and my brother Marshall McDaniel and I set about the process of creating the new work; writing the notes, producing the electronics, devising the performance apparatus, and facilitating an agile and evolving rehearsal process, wherein the other members of the quartet would shape the outcome of the work as it was being created. A four movement, 24 minute piece titled *Ghosts* was premiered at the Classical:NEXT expo at De Doelen in Rotterdam in May of 2016. From a technological and composing standpoint it featured some notable techniques.

Our approach to *Ghosts* was based on our prior experience incorporating live performers with some kind of electronic accompaniment. Marshall and I had written music together before, all of it using electronics. Our first collaboration took place at the 2010 PODIUM festival in Esslingen Germany, where Marshall was working as composer in residence. Marshall recounted his conversation with artistic director

Steven “They commissioned me to write a string quintet, a string quartet plus a contrabass, and that they wanted electronics incorporated somehow. Electro acoustic music was maybe slightly more cutting edge at that time.” Marshall was unfamiliar with electronic and solicited my help. I had taken a course in electronic music in high school, and had some superficial familiarity with music software. We wrote a 20-minute, three-movement piece, which used a static backing track with no tempo changes and a steady click throughout for the player’s in-ear monitoring. It’s fairly primitive approach reflected how thoroughly in over our heads we were in the beginning of our experiments with electronics. The premiere was beset by numerous technical shortcomings brought on by sheer lack of experience. The performers had no backing track to monitor in their headphones, and struggled mightily to play convincingly in ensemble with the front of house.

Our next commission was to write the music for an original adaptation for the story of Merlin and King Arthur for the stage at The Will Geer Theatrum Botanicum in Los Angeles. There were 16 songs and incidental music throughout. There was a static backing track for all songs, with on stage wedge monitors. The actors sang along to the backing track through rehearsal and rote memorization, an approach that also yielded mixed results in performance. In the meantime Marshall worked in film and television composition and production in Los Angeles. His duties for certain clients included the creating of live set performance setups for festival and stadium venues. This experience endowed him with some professional familiarity with the conventions and available technologies for combining

electronics with live audio inputs in performance settings. When we got the spot in the showcase at Classical:NEXT, we knew we had a lot of options to explore.

We wrote the notes between January and March of 2016. There was a 10 minute *sonata-allegro* first movement, a sort of *scherzando* second movement featuring lots of loops at about six minutes, a third movement of cadenzas for the viola and cello using lots of effects for 3 minutes, and a fourth movement finale of 6 minutes. My brother flew out to the Netherlands to help facilitate the premier in May of 2016. After he joined us, we rented a car and drove to France where a benefactor (Evertjan Janssen) had invited to stay a week and prepare the piece for performance. Marshall and I completed most of the backing track production and effects automation, and other production during that week. With a few tweaks we produced the version of *Ghosts* which was premiered at Classical:NEXT in De Doelen in Rotterdam. The session was controlled remotely by Marshall through a purpose built Lemur interface running on an iPad that allowed starting and stopping, on the fly mixing, as well as additional live effects control.

The score of that version is included below under *Ghosts* - May 2016 in the scores section.

A mock-up of that version using sampled string instruments can be listened to at the following URL:

<https://soundcloud.com/kellen-mcdaniel/ghosts-may-2016>

A live performance of the third movement cadenzas and the original finale, much of which would serve as the basis for *The River*, can be seen at the following URL:

https://www.youtube.com/watch?v=NYPdfj_HHQI

Each player in the quartet had their instrument fitted with a condenser microphone. The four inputs from the microphones on the string quartet ran into a digital audio interface, which was connected to a desktop computer via USB cable. The computer ran a session of Ableton Live. The session contained an electronic backing track for the entire 4 movements of the work in one uninterrupted session. The audio of this track would be sent to the front of house, as well as to the quartet's headphone mix. There was another audio track containing a recording of a metronome, synced to the shifting tempo of the backing track. This track would only be sent to the quartet's headphone mix in order to allow them to keep in time with the rigid backing track (which would callously proceed in it's own tempo regardless of any struggles on the parts of the living quartet members playing along). Additionally, the audio inputs of from the four microphones of the string quartet would be processed live by the computer in Ableton using a wide variety of different plug ins. Automation of dozens of effects were carefully programmed into the session, allowing the members of the quartet to perform their parts without muddling with additional interfaces. This meant that the quartet could focus on their own instrumental performance while the computer did the work of triggering

effects ranging from reverbs, flangers, distortions, and complex filters to recording and triggering loops and processed samples, all processed live and unique to every performance. These four processed tracks were sent to the front of house and the quartet's headphone mix.

While Ableton Live and real-time digital processing have been used in conjunction with string quartets before, *Ghosts* could be considered noteworthy in the depth of detail invested in this concept, in that that each string track underwent modulation to a precise degree by a large number of diverse effects, often acting in ensemble with one another with the object of achieving unique timbres and presentations of sound from the string quartet. This was executed with a hands free "set it and forget it" interface, all the while married to a backing track which sought to provide a kind of electronic orchestration for the quartet's part, sort of like a modern electronic *concerto grosso*. The results of this conception were mixed, because while the real time processing endowed the work with unique expression and craft, the software and or hardware used in this implementation was simply not able to adequately keep up with the rigors of performance. Delays between the quartet playing their instrument and hearing the processed sound coming through their headphone mix was so significant as to make playing in time with the backing track nearly impossible.

Latency is a technical term referring to the delay between the input of an instrument or microphone, and it's output through speakers or headphones. It is typically measured in the milliseconds required for a system to throughput audio, from input to output. While a millisecond may seem small in everyday life, in

musical performance it can define success or failure; even a few milliseconds can mean the difference between a chamber group playing in perfect synchronicity or being a complete train wreck. The potential for problematic latency was an issue that Marshall and I were aware of from the outset, and for which we devised strategies in advance to try and prevent show-stopping performance issues.

There are ways for reducing the latency within Ableton itself through the settings menu. In digital audio, the “sample rate” is one metric that defines the quality or fidelity of an audio signal. Digital audio is composed of many very short sounds, called samples. In the example screenshot, the sample rate is set to 48000 samples per second, meaning every second, 48000 proportionally short little fragments of sound are played. Since Ableton is software optimized for live performance, and as such it allows you to configure how far it “looks ahead” to preload samples of upcoming audio that has yet to be played. This is what is referred to as “buffer size”. The buffer size can be increased or decreased, depending on the needs of your session. Increasing the buffer size will insure that the session does not “get ahead of itself”. When the buffer runs out, samples will not be loaded by the time Ableton attempts to play them, resulting in severely distorted playback and massive artifacts. Exceeding the buffer cannot be recovered from while the session continues to play; the session must be stopped and started again in order to allow for the buffer to fill in order to allow normal play back to resume. However, increasing the buffer size of your session is a trade-off; an increased buffer size means the computer will preload more samples in advance, which in turn increases the input latency. If you were performing purely electronic music using Ableton, a

higher buffer size might be desirable, as it would insure that your playback would be better guaranteed against exhausting the sample buffer. However, in the context of a session using live inputs and real time processing, the resulting higher input and output latency can be devastating to the performer's ability to stay with a set backing track. We found in our preparation that we could shave latency down about 8 or 9 milliseconds, using a sample buffer of 256 samples. This solution was barely workable.

Latency manifests from the performer's perspective as a delay between their playing or singing into a microphone, and the hearing of the amplified and processed signal from that microphone in playback, either through the front of house or through their headphone/monitoring mix. This presents a bedeviling challenge for performer, who must play at the same tempo as the backing and click tracks that they are hearing over monitors or headphones, but *consistently 8 or 9 milliseconds early*. This is a bizarrely unnatural and disorienting challenge for almost any chamber player. A classically trained musician who is accustomed to trusting their ears and sharing an internal pulse with their colleagues can find this problem to be nearly catastrophic in live performance. Each performer is torn between the pulse established by the click and their estimation of exactly how early they should play in order for it to come out of the front of house synchronized in with the backing track and effects automation. This challenge is then compounded further by each member of the ensemble, as they wrestle with these challenges on an individual level, disturbing and confusing their colleagues in the process, trapping the ensemble in an exacerbating feedback loop of inaccuracies.

It was under these kinds of conditions that *Ghosts* was prepared and later premiered at De Doelen in Rotterdam. Marshall and I had both dealt with latency issues before in the different setting of recording studio audio, rather than live performance. That body of reference seemed to indicate that latency of around 10 milliseconds or less would be adequate to make everything run smoothly and allow the electronics to seem responsive and organic to the string quartet. When Marshall and I began rehearsing the quartet with the electronics, the seriousness of this problem became immediately evident.

Take the second movement of *Ghosts* as an example. Movement two had a simple ABA structure, with the outer A sections (marked *Andante*) making heavy use of automated looping effects. Marshall and I were initially very enthusiastic about this scheme on paper, as it allowed the dynamic use of loops as a compositional tool without requiring the performers to each distract themselves with the kinds of stomp box loop stations that are a common sight in many pieces of electro acoustic music. Instead the quartet would play along with the track, and the Ableton session would know on which measure and which beat to begin recording loops for each individual player. The loops would then be played back at the desired measure and beat, at times automated to be processed with additional audio effects as well. All the members of the quartet had to do was to play the notes on the page, and everything else was automated. The setup seems like a functional plan until you mix in the additional difficulty that the string quartet, struggling with the latency issue, will often play their parts late by several milliseconds. This means that the audio being recorded for looping is recorded several milliseconds late, sounding so

far on the back of the beat as to seem simply out of rhythm. Some loops in movement two of *Ghosts* played for a long time, and would serve as cues for other loops. Attempts to execute new loops on top of the already latency-afflicted earlier loops would introduce rhythmic problems at every level of the loop stack, which even with rehearsal aimed at learning to circumnavigate this exact problem, produced only barely passable results.

After the premiere of *Ghosts* at De Doelen, Marshall and I reflected on this problem at length. Processing the sounds of the live instruments was half of what made the concept of electro acoustic music appealing to us in the first place. What could be done to reduce the latency, so that the performer didn't have to struggle with this decidedly unmusical challenge of splitting the brain into two timezones, each 8 milliseconds apart: one listing in real time, the other divining the very near future and propelling the body to play despite one's best trained musical instincts. We speculated about hardware deficits; a faster computer, particularly one with more and faster RAM, or a higher quality digital audio interface might help to whittle the latency down. Perhaps musicians with more experience in this field could point towards some other software, perhaps even non-commercial, that could do better. However doubts remained about any solution that merely reduced the latency. In the end the most cutting edge processing options; modern filters, effects, etc. would never be the ones with the smallest computer-resource foot print. Instead of bringing the freshest sounds to bear in ensemble with the string quartet, we could only conceivably use five and ten year old tools and sounds to achieve real time processing. This wasn't a satisfying prospect, as Marshall and I reasoned that

even with the best computer, even with the most optimized software, we would still be contending with no less than 5 milliseconds of latency.

It may not seem like an insurmountable task, but back on "planet classical music", the typical latency dealt with by musicians under normal conditions all over the world is exactly zero. And although I am not a mathematician, I can attest from personal experience that the difference between zero latency and even a few milliseconds of latency is, in some sense, infinite. The best way to play with electronics it seemed, would be the way that resulted in less than one millisecond of latency from the microphone inputs. Practically zero.

The only way to do this that Marshall or I could think of would be to skip the real time processing altogether and run the mic inputs from the string quartet directly into the amplifier or mixer that would send them to the front of house, cutting out any analog-to-digital audio conversion. This basically solves the latency issue, but at the cost of all the effects and new combinations of sounds that made the piece novel and worthwhile in the first place. After much discussion a workaround was devised by Marshall and I in a conceptual level, but it's implementation would require considerable advance preparation.

The motivations to implement these changes came later that year in September of 2016, when the quartet was informed that we had been scouted by Het Kersjesfonds for their Strijkkwartetstipendium for that year. They were interested in the kinds of innovative offerings we had showcased at Classical:NEXT and awarded us a beurs to continue to develop Babylon Quartet. They asked us to perform in the Kleine Zaal of Het Concertgebouw in Amsterdam as part of a

showcase that would introduce the laureates of that year's stipends. Het Kersjesfonds requested that we play at least two movements from *Ghosts* at the showcase. I knew that the technical foibles which had hamstrung the work's premiere in De Doelen would need to be mitigated for the occasion of the showcase in Het Concertgebouw in order to feature Babylon Quartet and the wider concept of electro acoustic performance in the best possible light. Whereas the showcase at Classical:NEXT was primarily a technology demonstration, the one in Het Concertgebouw was a concert, with all the attendant expectations of polish, panache, and precision. The concert was to take place on the 3rd of December, meaning there was just enough time to create a second draft of two movements from *Ghosts* using a new approach.

The new approach initially grew out of Marshall and my proposals for reducing latency, which had so far threatened the viability of performing the piece we had written in its current form. To fix the latency, the string quartet's mic outputs would now route directly to the mixing desk. The problem being that the string quartet's signal is now playing out of the front of house "dry". With no effects, no reverb, no filtering, the sound of the quartet is somewhat harsh, as even specialized microphones the highest quality flatten string instrument's rich bouquet of overtones to a much more focused, punchier profile, and has trouble blending convincingly with the backing track. In the previous apparatus for *Ghosts*, Ableton would send a mix of both the "dry" (unprocessed) and "wet" (processed) signals to the front of house to be played in ensemble with the backing track. With the new apparatus as Marshall and I planned it, we start with only the backing track and dry

quartet. How to bring back the wet quartet signal? Marshall and I decided to record the quartet playing their parts, individually. Each part would be tracked on its own, and then processed like it would be for a studio recording. In fact, one of the big benefits of this alternative approach was that the act of preparing for a live performance necessarily precipitated a proper studio of the recording of the piece as a byproduct of the process. Once the complete recording had been made, with the backing track, dry quartet track and wet (processed) quartet track all mixed to taste, a "live" version could then be created by simply removing the dry quartet tracks from the mix. In performance, the quartet would perform the dry quartet part live to complete the arrangement. We discovered along the way that by adding a touch of live reverb to the quartet in performance via the mixing desk (either through on board effects or an auxiliary channel and external module) that the quartet could blend very convincingly with the backing track. The reverb from the wet, pre-recorded quartet tracks would mesh with the modest reverb applied to the live quartet so that from the audience's perspective, it was not apparent that the wet signal had been recorded at another time. While this approach may seem at first blush to be a sort of glorified form of karaoke, in practice it yielded the most dynamic, most reliable, and most engaging results by far of the two approaches. Perhaps in the future, resources will become available that allow the most complex and demanding audio processing to be seamlessly executed in real-time in a performance environment, but to date, no such resources are available to artists with the means of graduate students.

Marshall and I were dissatisfied with the first and third movements of the original *Ghosts* for creative and compositional reasons and decided to scrap them when preparing for Het Kersjesfonds showcase, cannibalizing the best production and compositional elements into the second and fourth movements. These movements themselves became a pair of contrasting stand-alone works, and received individual titles; the second movement became a more compact work centered around looping techniques called *Mirrors*. The fourth movement became a sunny rondo punctuated with explosive episodes entitled *The River*. Both movements were essentially re-composed from the ground up, taking into consideration what worked and didn't work about *Ghosts* in its initial form. *Ghosts* was full, of synths doubling Quartet parts in unison, which due to temperament issues rarely sounded in tune, a concept Marshall and I sought to minimize in *Mirrors* and *The River*.

While some may be disappointed in our “retreat” from the live electronics of *Ghosts* in May of 2016, Marshall and I concluded strategically that the demands of *Mirrors* and *The River* needed to put the outcome for the performer above a loftier goal an exemplary musical work of the future. As the technology continue to develop, new sounds and techniques as well as new hardware and software become available, constantly augmenting the composer and producer’s capability to bring more exciting performances to life with electronics. More live processing, delivered in a more seamless, performative manner is no doubt around the corner. However in the context of our research, the backing track prerecorded with our own personal

interpretations best brought *Mirrors* and *The River* to life on stage, and that seems to be the state of these works in performance for the foreseeable future.

Scores for *Mirrors* and *The River* are included below in the Scores section.

You can listen to the studio recording of *Mirrors* at the following URL:

<https://soundcloud.com/mcdanielbrothers/mirrors>

You can watch a live performance of *Mirrors* in Braga, Portugal at the following URL:

https://www.youtube.com/watch?v=R_OHaGURkTc

You can listen to the studio recording of *The River* at the following URL:

<https://soundcloud.com/mcdanielbrothers/the-river>

You can watch a live performance of *The River* in Braga, Portugal at the following URL:

<https://www.youtube.com/watch?v=GF8xRmT6ioI>

Leonid Nikishin - Violin 1

1. Click track and ensemble playing.

In traditional chamber music, the best results are achieved when all members of the ensemble constantly combine leading and following. Even if another member is giving the queue, you will always be a fraction too late if you do not actively co-lead that queue. Likewise, you will always be a tiny bit ahead of everybody if you do not let your colleagues share your impulse and co-lead the queue that you give. As it is a very subtle and fragile equilibrium, it usually takes years to find and master it. Metronome, on the other hand, is cold-hearted and objective. Its inherent rigidity is unforgiving and can be rather frustrating at times. Due to the lack of micro-flexibility, it is extremely tricky to be truly, precisely together with metronome. When you play with a click track, you essentially play with an always-on metronome in your ear. In a string quartet setting, it created a problem we have never faced before: who do we play with - click track or our colleagues? What do we do if one of quartet members gets slightly off? Finally, there is also an artistic issue to consider: is there space for creative timing (subtle *rubato*, for example) when playing with click track?

As we started to work on the piece without electronics and backing track, the initial learning process was very similar to traditional repertoire: we sometimes played with metronome but mostly relied on our own sense of timing, followed our own artistic instincts and tried to play with the usual approach to ensemble playing. However, as soon as the click track was introduced into the process, we had to rethink our approach. First of all, there could be no arguing with the click track: all the electronic effects and backing track are tied to it and disobeying the meter would lead to undesirable results. Just like orchestras sometimes need to learn how to follow a particular conductor, we had to learn how to follow click track and feel comfortable doing so. After a lot of rehearsing and discussing, we arrived at the conclusion that it was best to be either precisely on the beat or just a fraction ahead (as it was much easier to align with the backing track than being even very slightly late). A lot of work was done having only one or two members at a time play with click track while Marshal was monitoring the timing and pointing out our 'hidden' tendencies and idiosyncrasies. With string instruments, there is always a delay between the motion of the arm and the beginning of audible sound as the string takes a moment to start vibrating at a regular pace. Usually almost unnoticeable, this delay was an issue with click track and had to be taken into account: we had to play purposefully a bit earlier and with a slightly more immediate, more articulated attack than we would normally choose to do. The middle section of original 2nd movement was a particularly tricky example as it was technically challenging and there were no other aural guides (backing track, for instance) to rely on, just a beep

of click track in our ears. Once all members became sufficiently comfortable playing with click track individually, it was a lot easier to keep the ensemble tight.

As for the artistic expression in timing, it quickly became apparent that the only way to have that is to 'pack' any liberties with meter within the beat of click track. It means that no matter what we had to align with the beat but could sometimes afford to have a limited amount of freedom between the beeps. It did not feel particularly natural at the beginning but ended up being a very useful skill: even in traditional repertoire, it is often desirable that expressive timing does not affect the overall meter and sense of tempo (hence the methods of practicing with a metronome set at one beat per bar, two bars, four bars, etc). By the time we were preparing the reworked piece for a performance at Concertgebouw, it felt rather comfortable and even reassuring to play with click track, we did not feel restricted by it anymore.

A notable recent experience was bringing *Mirrors* and *Rivers* to HARMOS 2017 festival based in Porto, Portugal (March 2017). It could be described as the first real-life test of taking these pieces on the road. Most importantly though, it was a test of how the pieces would be received by an unprepared audience.

All the times that we performed *Mirrors* and *Rivers* before Portugal, the audience was not completely unaware of what we were bringing to them. The public at those events also tended to be rather well-educated in the field of contemporary music. HARMOS was different: it positions itself primarily as a traditional classical music festival that brings talented young ensembles from all over European Union to

places which are not prominent hubs for classical music. Those include remote towns and villages, churches and city halls, small theatres and local schools among others. As such, it was an ideal set of circumstances to gauge how unprepared audience would react to our very unconventional repertoire.

First concert was at a city hall in the very center of Portugal's second largest city, Porto. Even though it is a vibrant city with plenty of cultural life, the audience mostly consisted not of music connoisseurs: it is not a concert hall per se, the entrance was free, it was a lunchtime concert, etc. Acoustics, reminiscent of old churches with plenty of echo, were hardly ideal for our setup as it was nearly impossible to compensate for natural reverberation of the room and as a result, sound from the quartet reached the audience with delay that was different from backing track. Nonetheless, the pieces were well-received and did not come across as alienating. We were especially happy to see some younger people in the audience that were clearly engaged by the fresh sonorities that we brought to them.

Second concert was at a local music school in Braga. Much smaller city, concert venue located quite far from the city center. However, this time it was a proper concert hall with decent acoustics which helped us greatly. We were able to achieve a much more precise alignment of live sounds and pre-recorded sound effects and it ultimately resulted in one of the best performances of *Mirrors* and *Rivers* that we have given so far. The audience seemed to agree as the reception was considerably more enthusiastic this time.

Third performance took place at one of the most prestigious concert halls in Portugal, Casa da Musica in Porto (more specifically Sala 2, the chamber music hall).

This was by far the most experienced audience we faced at HARMOS festival and certainly the most formal concert of the three. Acoustics were fine and technical support team from Casa da Musica provided us with as luxurious a setup as we could possibly wish for. Charmed and relaxed by the very receptive and downright cozy audience at the concert in Braga, we were under quite a bit more psychological pressure in Casa da Musica and did not feel quite as comfortable. The reception was warm, some people had heard us at city hall before and clearly enjoyed this performance more (unsurprisingly, most of them cited acoustics as the main differentiator).

Three performances, three very different locations, three considerably different audiences and yet... very similar receptions! It was especially peculiar as the other pieces on the program (Beethoven String Quartet No.11 '*Serioso*' and *Fratres* by Arvo Part, among others) received more varied responses (which, of course, stemmed from us giving more varied performances).

The conclusion we could draw from this experience is that by including electronics and performing repertoire unique to Babylon Quartet, we actually have a more resilient material that is less dependent on acoustics, location and preparation of the audience than traditional repertoire. However, it might be as much an advantage as it is an issue: in some ways, these pieces require even more courage and concentration to produce a truly remarkable performance than the usual string quartet repertoire, since the margin for artistic freedom is considerably reduced and electronics will always sound exactly the same (provided there are no particular technical issues at the venue).

Introduction.

First I am going to talk about the whole project and my experience throughout the different fazes. Second, I will elaborate on the following subject: *'Headphones'*. It all began when Kellen proposed to write a piece for Babylon Quartet to be performed in Classical:NEXT 2016. The idea was to create a new sound for string quartet, with the goal to attract a different audience group. Our initial idea for the Master Research was to research different audience types and how they react to different styles of music. But then we realized that it is too big of a project for only two years of a Master Program.

So, we started project *'Ghosts'*. A piece of four movements, written in a classical form, but engaged with an electronic *'machine'* that reacts on the spot to the music that is played by the quartet. During the first stage Kellen had to work alone (with his brother) and the remaining quartet members didn't really know what was happening and what the plan was. At some point we got our parts, but we still didn't know what the electronics would sound like or how it exactly would work (technically).

As it was a first time for the quartet, as well for Kellen, to build something like this there was a problem of being *'late'* for set deadlines. This resulted in a little chaos, because there were quite some technical difficulties and they had to be solved on the spot. The whole buildup to Classical:NEXT was very exiting and had many ups and downs as expected, mostly with the technical aspect. During the performance we had to deal with

'latency' and some other technical issues. The idea was to redo most of it. So, after Classical:NEXT we recorded and performed it a couple more times till the remake.

'Ghosts' became '*Mirrors*' and '*The River*'. The parts for the quartet got changed and there was a whole new 'machine' build for the electronics. This was very interesting, because this time we got to see how it actually got build and we had a much more clear idea how to operate ourselves and how/ what to prepare.

We performed it at the Concertgebouw, which was a great success! The goal of the remake was to make it accessible not only for a younger audience, but also the group of audience that doesn't like 'hip' music. And it definitely worked. Actually it was the same case for 'Ghosts', when we were in a very small town in France, where we played it and the 'older audience' very well accepted it. The next, current, goal is to promote the quartet and the pieces, to show our new profile to the world. Therefore we will make a music video for '*Mirrors*' and an EP.

Headphones and why did we need them?

Headphones are a very important subject within the research. It seems like a small detail, but without them it wouldn't be possible to perform these pieces. Also, the headphones gave a lot of complications, which had to be solved. So, a lot to talk about! It was a given from the beginning that the pieces can't be played without a click track. There is too much happening during the performance with the electronic sounds; to just play along and react on each other's playing like in a normal

string quartet setting. Therefore we have the click track, which keeps everybody/ everything synchronized.

Which headphones to use?

One of the main questions we had to answer was which headphones do we want to use. The decision was based on (the following) multiple factors.

Which headphones:

- 1) give the best sound
- 2) fit the ears individually
- 3) look good on stage
- 4) can give the best balance for the combination 'live- and electronic sound'
- 5) last but not least, which we can afford

We collectively decided on Apple phone-headphones. First of all, because we all individually own them, (and to go from the bottom of the list) if they would break or become defect, we could afford to buy new ones. Second, it looks good on stage. Meaning: it didn't disturb the visual aspect of the performance. In the end though, we used different ones. It was really a personal preference for each one of us. Then, we had to decide if we would have both ear buds in or just one.

In settings like this it's common to use only one, because you have to be able to listen to your own sound production, as well as your colleague's and also the electronics.

If you would cover both ears for the click track it would be impossible to react on the surrounding sounds.

It is critical to keep in mind that it takes time and practice to get used to this combination of sounds. So, you really need to start in time rehearsing in this setting! One of the bigger difficulties was something that relates to a chain of things resulting in synchronized or unsynchronized playing. The pieces are composed in such a way that it isn't just 'playing along' with the track and the electronic sounds. The electronics react live on our playing. At least, that was in the first version. So we have to play well together within the ensemble AND play exactly together with the click track for a perfect match with the electronic sounds. We chose of course for one ear bud, but it was decided individually to use the left or right ear. The small, in ear, headphones are made in a way so they have to fit everybody's ear. This was definitely the case for us! But, one of the first problems we came upon was, that during performances they would/ could jump out of our ear. A solution for this problem could be to tape the ear bud to the ear in a way it couldn't jump out. We didn't try it yet, but coming week we will definitely will experiment with this as we have three concerts to perform.

The following is a little bit of another topic, but definitely related to the headphones.. 'We are still human beings' and the possibility of making a mistake or being late/ early with the track could definitely result in a 'bad performance'. I'm telling this because the moment one of the ear buds jumps out of somebody's ear, one loses concentration. You have to keep playing, but the questions are: who or what do you listen to when that happens? In general it is a very interesting topic to discuss, because playing along with a machine doesn't immediately make you a robot too. We can't play the same

every time or perform and we don't. It is still music we are playing and one might take a bit more or less time in a certain passage or phrase, or suddenly somebody doesn't react; drops a bow; has huge inspiration and plays something in a totally different way. Meanwhile, there is still this blanket of electronic sounds one has to keep up with. That's why we have the click track and why it is important to have good and comfortable headphones. And why we need to solve the 'jump-out of-ear' problem.

Another problem that occurred was the leveling of the click track through the headphones, which had to be balanced with the backing track and acoustic sounds.

As we don't have our own technical equipment, we had to deal with the equipment provided by the venues we would perform in. Often this resulted in a lot of adjustment from our side. The biggest issue was the leveling of the click track within the backing track. This had to be done by somebody from outside for example: Marshal or a front of house technician. And even then it was impossible to adjust on the spot during the performance, because the 'mixer' can't hear everybody's mix at the same time. We would have to (physically) wave or make it clear in one way or another.

The leveling:

There are two or three sound streams that mix into the headphones (depends on the situation). Click track; backing track and monitoring. Then, throughout the pieces the level of the backing track shifts in volume quite a lot. If the click track would remain one volume all the time, it won't be coming through everywhere and we would get lost. Therefor the click track was adjusted for everybody individually and programmed

throughout the pieces really carefully.

Again, that doesn't mean it would be the same at every venue, because of the electronic equipment. For example: there was one performance where the level of the click track was way too loud for one of us, but it was such an important performance that we couldn't stop and adjust. It is even quite dangerous for one's hearing!

Conclusion.

It was a very exciting experience and actually literally a journey. We traveled through Europe with the work and it went through many stages along with it. The latest one was now: Portugal March 2017, where we played three concerts in different cities and in front of very different audience. The response where so great! People wanted to listen more and were also very interested in the process. After the concerts, for example, we had people lined up with compliments, questions, and so on, about the pieces. I am certain that we have a product that is new in the performance practice. It was a big experiment, which did the opposite of failing. Even with the many technical difficulties – there was always a solution and I'm even certain to say that the current performance practice needs 'our product'. It combines very well with traditional classical music and people are very excited after hearing it.

I hope that this is only the beginning of an even bigger journey!

William McLeish - Cello

Working on what was initially named *Ghosts*, and later came to be structured as two movements called *Mirrors* and *The River*, was an informative and stimulating experience. This project was an in depth and collaborative look at the compositional process; while I have worked with composers in the past, I have never been so thoroughly involved. Secondly, this experience posed new challenges as a performing musician, in that I faced a complex soundscape with which I was entirely unfamiliar. I was forced to be adaptive and imaginative in order to deal with issues of balance, texture and ensemble. The skills that I developed as a collaborator in this project are valuable in their own right, but are equally transferrable to my studies as a cellist and chamber musician. Finally, working on this piece acquainted me in a sophisticated way with the rich language of electronic music.

As a musician who witnessed a great number of different levels of the compositional process involved in creating this piece, I feel that I was afforded a unique perspective thereof, and had the privilege to influence its direction and offer input at various stages. The quartet first encountered the parts for this piece independent of the electronic sounds that ultimately constituted much of the composition. My colleagues and I did not become acquainted with the electronic portion of the piece until weeks into the process. This meant that learning this piece was at first much like learning a piece of standard repertoire. The quartet began by reading through; we subsequently delved into an examination of passages posing difficulties for intonation and ensemble. We were also

afforded the privilege of lending our input with regards to the part writing. For me, this was a particularly stimulating part of the experience. I felt rewarded by the opportunity of offering my perspective with regard to dynamic indications, voicing, etc. As a musician that mostly performs works that are centuries old, having input at a compositional level was a new and exciting experience.

When the quartet started rehearsing with the electronics, however, I noticed that a great deal of my input had become obsolete; whether because it was rendered artistically invalid by what was happening electronically; or because the details I had suggested were lost amid the new sounds we were experiencing; or because my suggestions had become redundant by an electronic figure that was achieving the same artistic outcome. As the quartet became more familiar with the electronic portion of the piece, however, we became wiser about the type of input that was valuable to the process. For example, input about our experiences of working with the click track and backing track became totally indispensable. We learned to become very vocal about levels of discomfort with the volume of the backing track, and to indicate to Kellen and Marshall immediately if anything was difficult to hear.

Because much of the electronic portion of the work was composed after the quartet had already started rehearsing the string parts, I was also afforded a unique play-by-play look at the process of electronic composition. Seemingly each day, new details were added to the piece and older ideas were rejected. This offered a completely unique glimpse into the compositional process. Even if musicians are working in close collaboration with a contemporary composer, they normally witness only a handful of

versions of a given piece. I had the privilege of witnessing this piece at a diverse range of stages of development.

As the electronics became more developed, the quartet faced new challenges of balance and technique; we were playing along with a backing track that was not only inflexible, but also stood in stark contrast to the quartet in terms of texture. For logistical reasons, the musicians had to perform with a click track, without which playing along with pre-recorded material is effectively impossible. Surprisingly, this felt quite natural: in fact, there was something very comfortable about it. Part of the interpretive burden of the musician was shifted to a reliable machine. Instead, what made this experience challenging was that musicians intuitively respond differently to a metronome. Minute differences in the way musicians react to a click track accumulate, and we were often faced with the necessity to compromise between playing with the metronome and following our colleagues. The only viable means of addressing this problem is to have an abundance of experience playing with the click track and one's colleagues, and to fight the urge to insist upon one's own responses to the metronome.

The quartet also had to find a way to be able to hear each other, the backing track, the click track and ourselves simultaneously. We tried numerous setups to enable ourselves to be aware of everything that was happening sonically. We tried wearing two earphones; we tried wearing just one; we adjusted the volume of the click track; we adjusted the volume of the backing track. Ultimately we settled on wearing one earphone each, with the backing track at a low volume and the click track at a high volume; however these issues continued to be so prevalent, that at the first performance of the work in De Doelen, I was almost deafened in my right ear by the backing track. As a

result, the first thing we check during a rehearsal or sound check is headphone volume. We have also learned to test drive this volume by playing with the backing track in order to have a clear idea of whether it is audible or uncomfortable as soon as possible.

One logistical problem with significant artistic implications, was that I personally had tremendous difficulty conceiving of how the quartet sounded out in the hall in combination with backing track. This was perhaps the greatest artistic challenge we faced. This issue is an exaggerated version of one that chamber musicians regularly face in the context of performing: how can a musician, performing on stage, have a sense of the way the sound of the quartet comes across in the hall? This question is further complicated when one must take into account a second sonic world that is happening concurrently, namely that of an electronic backing track being broadcast to the audience; the musician faces additional challenges as a result of the fact that he his being amplified, rendering many ingrained technical habits obsolete, unnecessary or even inappropriate. A constantly renewing compromise was necessary; I had to flit back and forth between checking my own sound, checking the sound of the backing track in my ear, adjusting to the click track, listening to my colleagues and imagining how the amplified sound of the quartet might come across in the hall in conjunction with the sound of the electronics.

In spite of having rehearsed and performed these two pieces on many occasions, issues of disorientation for the musicians have still not vanished entirely. This stems partly from the wide divergence of the rehearsing and performing environments: a rehearsal setting for this piece is frequently a practice room or one of our homes. Often in practice rooms we do not have access to a sophisticated sound system. This means that while we rehearse, we may only be experiencing the backing track through our

headphones. Even if we manage to wire the backing track through an inferior sound system in a practice room or living room, the amount of sound coming out of such a system simply does not resemble the sheer volume of sound coming out of a good sound system in a concert hall. As a result, in spite of the fact that we are accustomed to rehearsing with the backing track, frequently in performance settings, we encounter totally new problems with regards to our ability to hear each other and ourselves. As recently as our trip to Portugal a few days ago, I experienced extreme disorientation during performance.

The above issue is further exacerbated if there are any difficulties with the technology we are using. For instance, when we were performing in France, in May, the microphones we were using were extremely problematic. As a result, we frequently encountered feedback during rehearsal, and even during performance. Additionally, during our first performance in Portugal last week, there was a problem with one of the cables attaching our microphone to the interface, resulting in loud cracking noises at the onset. While this is a technical issue, it also has implications for the performers, namely that we sometimes have difficulty holding our concentration and feeling comfortable. Even introducing the slightest amount of extra noise or feedback during a performance can cause a musician intense discomfort, and effect one's concentration and confidence for the duration of the piece.

The solution that we arrived at in Portugal was to devote the vast majority of the time allotted in a sound check to these two pieces, even when we were performing acoustic works in the same concert. This enabled us to develop a greater level of comfort with the volume of sound generated by the speakers in a given hall, and to test drive

whatever technology we had access to, in order to decrease the risk of technical failure during the concert.

Finally, I would like to say a few words about the close experience I had working with electronics, and how it served not only to challenge and inspire me as a cellist and musician, but also was also deeply enjoyable, and expanded my conception of art music. In the same way that music of the 18th century came to embrace the newfangled technology of the fortepiano, I believe it is inescapable for art music today to acknowledge the rich sound palette afforded by electronics. Until now the influence of electronic music has been split between popular music and the very advanced and challenging compositions of composers such as Stockhausen, Milton Babbitt and other heavyweights of contemporary music. In my view, more standard forms and more accessible composers would benefit greatly from a curiosity about cutting edge technologies in electronic music. For this reason, I believe this project has had relevance not only to my colleagues and I, but has symbolic relevance to the art music community: it serves as compelling evidence of the creative value of technology to serious musicians.

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a drum, a violin, or a harpsichord. Kontakt is the lifeblood of modern sampling; it can be run as a VST in any environment, or as a standalone application. It can be run as a single instance of a single instrument, or as a multi instance with hundreds of instruments on deck at once. This manual provides the necessary technical support to make use of such a critical and wildly configurable piece of software.

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Ghost

I

McDaniel Brothers

Static **Allegro**

Violin I

Violin II

Viola

Violoncello

Piano

This system contains the first six staves of the score. The Violoncello staff begins with a *p stacc* marking. The Piano staff is empty. The key signature has two flats (B-flat and E-flat), and the time signature is 6/8.

7

Vln. I

Vln. II

Vla.

Vc.

Pno.

This system contains staves 7 through 11. The Violoncello staff continues with the *p stacc* marking. The Viola staff has a *mp* marking. The Piano staff remains empty. The key signature and time signature are consistent with the first system.

12

Vln. I

Vln. II

Vla.

Vc.

Pno.

mp

poco cresc.

16

Vln. I

Vln. II

Vla.

Vc.

Pno.

f

mf

f

21

Vln. I

Vln. II

Vla.

Vc.

Pno.

26

accel. poco a poco

Vln. I

Vln. II

Vla.

Vc.

Pno.

mp cresc

mp cresc

accel. poco a poco

31

Vln. I

Vln. II

Vla.

Vc.

Pno.

36 $\text{♩} = 120$

Vln. I *mf* col legno

Vln. II *f*

Vla. *mf* col legno

Vc. *mf*

$\text{♩} = 120$

Pno.

Vln. I arco

Vln. II arco ord.

Vla. arco

Vc.

Pno.

43

Vln. I

Vln. II

Vla.

Vc.

Pno.

47 **poco accel.**

Vln. I

Vln. II

Vla.

Vc.

Pno.

poco accel.

51 $\text{♩} = 128$

Vln. I

Vln. II

Vla.

Vc.

Pno.

$\text{♩} = 128$

54

Vln. I

Vln. II

Vla.

Vc.

Pno.

f

f

f

f

57 **Tempo I**

Vln. I

Vln. II

Vla.

Vc.

Pno.

Tempo I

p

63

Vln. I

Vln. II

Vla.

Vc.

Pno.

p

68

Vln. I

Vln. II

Vla.

Vc.

Pno.

p

p

72

Vln. I

Vln. II

Vla.

Vc.

Pno.

mp

mf

mp

76

Vln. I

Vln. II

Vla.

Vc.

Pno.

80

Vln. I

Vln. II

Vla.

Vc.

Pno.

arco

f appassionata calore

mf

Measures 80-84. Vln. I and II play eighth-note patterns. Vla. plays eighth notes. Vc. and Pno. play sixteenth-note patterns. Vln. I has an arco instruction and a dynamic marking of *f* appassionata calore. Vc. has a dynamic marking of *mf*.

85

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 85-89. Vln. I and II play eighth-note patterns. Vla. plays eighth notes. Vc. and Pno. play sixteenth-note patterns.

90

Vln. I

Vln. II

Vla.

Vc.

Pno.

mf

mf

97

Vln. I

Vln. II

Vla.

Vc.

Pno.

mp

mp

mp

mp

104

Score for measures 104-110. The key signature has two flats (B-flat and E-flat). The instruments are Vln. I, Vln. II, Vla., Vc., and Pno. Vln. I plays a melodic line with eighth and sixteenth notes. Vln. II plays a rhythmic pattern of eighth notes. Vla. plays a pattern of eighth notes. Vc. plays a continuous eighth-note accompaniment. Pno. is silent.

Vln. I

Vln. II

Vla.

Vc.

Pno.

111

Score for measures 111-116. The key signature has two flats. Vln. I has a triplet of eighth notes in measure 111. Vln. II plays eighth notes. Vla. plays eighth notes. Vc. continues the eighth-note accompaniment. Pno. is silent.

Vln. I

Vln. II

Vla.

Vc.

Pno.

117

Score for measures 117-123. The key signature is B-flat major (two flats). The time signature is 4/4. The instruments are Vln. I, Vln. II, Vla., Vc., and Pno. Vln. I has a half note G4, a half note A4, a half note Bb4, a half note A4, a half note G4, a half note F#4, and a half note E4. Vln. II has eighth notes G4, A4, Bb4, A4, G4, F#4, E4, D4, C4, Bb3, A3, G3, F#3, E3, D3, C3, Bb2, A2, G2, F#2, E2, D2, C2, Bb1, A1, G1, F#1, E1, D1, C1, Bb0, A0, G0, F#0, E0, D0, C0, Bb-1, A-1, G-1, F#-1, E-1, D-1, C-1, Bb-2, A-2, G-2, F#-2, E-2, D-2, C-2, Bb-3, A-3, G-3, F#-3, E-3, D-3, C-3, Bb-4, A-4, G-4, F#-4, E-4, D-4, C-4, Bb-5, A-5, G-5, F#-5, E-5, D-5, C-5, Bb-6, A-6, G-6, F#-6, E-6, D-6, C-6, Bb-7, A-7, G-7, F#-7, E-7, D-7, C-7, Bb-8, A-8, G-8, F#-8, E-8, D-8, C-8, Bb-9, A-9, G-9, F#-9, E-9, D-9, C-9, Bb-10, A-10, G-10, F#-10, E-10, D-10, C-10, Bb-11, A-11, G-11, F#-11, E-11, D-11, C-11, Bb-12, A-12, G-12, F#-12, E-12, D-12, C-12, Bb-13, A-13, G-13, F#-13, E-13, D-13, C-13, Bb-14, A-14, G-14, F#-14, E-14, D-14, C-14, Bb-15, A-15, G-15, F#-15, E-15, D-15, C-15, Bb-16, A-16, G-16, F#-16, E-16, D-16, C-16, Bb-17, A-17, G-17, F#-17, E-17, D-17, C-17, Bb-18, A-18, G-18, F#-18, E-18, D-18, C-18, Bb-19, A-19, G-19, F#-19, E-19, D-19, C-19, Bb-20, A-20, G-20, F#-20, E-20, D-20, C-20, Bb-21, A-21, G-21, F#-21, E-21, D-21, C-21, Bb-22, A-22, G-22, F#-22, E-22, D-22, C-22, Bb-23, A-23, G-23, F#-23, E-23, D-23, C-23, Bb-24, A-24, G-24, F#-24, E-24, D-24, C-24, Bb-25, A-25, G-25, F#-25, E-25, D-25, C-25, Bb-26, A-26, G-26, F#-26, E-26, D-26, C-26, Bb-27, A-27, G-27, F#-27, E-27, D-27, C-27, Bb-28, A-28, G-28, F#-28, E-28, D-28, C-28, Bb-29, A-29, G-29, F#-29, E-29, D-29, C-29, Bb-30, A-30, G-30, F#-30, E-30, D-30, C-30, Bb-31, A-31, G-31, F#-31, E-31, D-31, C-31, Bb-32, A-32, G-32, F#-32, E-32, D-32, C-32, Bb-33, A-33, G-33, F#-33, E-33, D-33, C-33, Bb-34, A-34, G-34, F#-34, E-34, D-34, C-34, Bb-35, A-35, G-35, F#-35, E-35, D-35, C-35, Bb-36, A-36, G-36, F#-36, E-36, D-36, C-36, Bb-37, A-37, G-37, F#-37, E-37, D-37, C-37, Bb-38, A-38, G-38, F#-38, E-38, D-38, C-38, Bb-39, A-39, G-39, F#-39, E-39, D-39, C-39, Bb-40, A-40, G-40, F#-40, E-40, D-40, C-40, Bb-41, A-41, G-41, F#-41, E-41, D-41, C-41, Bb-42, A-42, G-42, F#-42, E-42, D-42, C-42, Bb-43, A-43, G-43, F#-43, E-43, 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Bb-208, A-208, G-208, F#-208, E-208, D-208, C-208, Bb-209, A-209, G-209, F#-209, E-209, D-209, C-209, Bb-210, A-210, G-210, F#-210, E-210, D-210, C-210, Bb-211, A-211, G-211, F#-211, E-211, D-211, C-211, Bb-212, A-212, G-212, F#-212, E-212, D-212, C-212, Bb-213, A-213, G-213, F#-213, E-213, D-213, C-213, Bb-214, A-214, G-214, F#-214, E-214, D-214, C-214, Bb-215, A-215, G-215, F#-215, E-215, D-215, C-215, Bb-216, A-216, G-216, F#-216, E-216, D-216, C-216, Bb-217, A-217, G-217, F#-217, E-217, D-217, C-217, Bb-218, A-218, G-218, F#-218, E-218, D-218, C-218, Bb-219, A-219, G-219, F#-219, E-219, D-219, C-219, Bb-220, A-220, G-220, F#-220, E-220, D-220, C-220, Bb-221, A-221, G-221, F#-221, E-221, D-221, C-221, Bb-222, A-222, G-222, F#-222, E-222, D-222, C-222, Bb-223, A-223, G-223, F#-223, E-223, D-223, C-223, Bb-224, A-224, G-224, F#-224, E-224, D-224, C-224, Bb-225, A-225, G-225, F#-225, E-225, D-225, C-225, Bb-226, A-226, G-226, F#-226, E-226, D-226, C-226, Bb-227, A-227, G-227, F#-227, E-227, D-227, C-227, Bb-228, A-228, G-228, F#-228, E-228, D-228, C-228, Bb-229, A-229, G-229, F#-229, E-229, D-229, C-229, Bb-230, A-230, G-230, F#-230, E-230, D-230, C-230, Bb-231, A-231, G-231, F#-231, E-231, D-231, C-231, Bb-232, A-232, G-232, F#-232, E-232, D-232, C-232, Bb-233, A-233, G-233, F#-233, E-233, D-233, C-233, Bb-234, A-234, G-234, F#-234, E-234, D-234, C-234, Bb-235, A-235, G-235, F#-235, E-235, D-235, C-235, Bb-236, A-236, G-236, F#-236, E-236, D-236, C-236, Bb-237, A-237, G-237, F#-237, E-237, D-237, C-237, Bb-238, A-238, G-238, F#-238, E-238, D-238, C-238, Bb-239, A-239, G-239, F#-239, E-239, D-239, C-239, Bb-240, A-240, G-240, F#-240, E-240, D-240, C-240, Bb-241, A-241, G-241, F#-241, E-241, D-241, C-241, Bb-242, A-242, G-242, F#-242, E-242, D-242, C-242, Bb-243, A-243, G-243, F#-243, E-243, D-243, C-243, Bb-244, A-244, G-244, F#-244, E-244, D-244, C-244, Bb-245, A-245, G-245, F#-245, E-245, D-245, C-245, Bb-246, A-246, G-246, F#-246, E-246, D-246, C-246, Bb-247, A-247, G-247, F#-247, E-247, D-247, C-247, Bb-248, A-248, G-248, F#-248, E-248, D-248, C-248, Bb-249, A-249, G-249, F#-249, E-249, D-249, C-249, Bb-250, A-250, G-250, F#-250, E-250, D-250, C-250, Bb-251, A-251, G-251, F#-251, E-251, D-251, C-251, Bb-252, A-252, G-252, F#-252, E-252, D-252, C-252, Bb-253, A-253, G-253, F#-253, E-253, D-253, C-253, Bb-254, A-254, G-254, F#-254, E-254, D-254, C-254, Bb-255, A-255, G-255, F#-255, E-255, D-255, C-255, Bb-256, A-256, G-256, F#-256, E-256, D-256, C-256, Bb-257, A-257, G-257, F#-257, E-257, D-257, C-257, Bb-258, A-258, G-258, F#-258, E-258, D-258, C-258, Bb-259, A-259, G-259, F#-259, E-259, D-259, C-259, Bb-260, A-260, G-260, F#-260, E-260, D-260, C-260, Bb-261, A-261, G-261, F#-261, E-261, D-261, C-261, Bb-262, A-262, G-262, F#-262, E-262, D-262, C-262, Bb-263, A-263, G-263, F#-263, E-263, D-263, C-263, Bb-264, A-264, G-264, F#-264, E-264, D-264, C-264, Bb-265, A-265, G-265, F#-265, E-265, D-265, C-265, Bb-266, A-266, G-266, F#-266, E-266, D-266, C-266, Bb-267, A-267, G-267, F#-267, E-267, D-267, C-267, Bb-268, A-268, G-268, F#-268, E-268, D-268, C-268, Bb-269, A-269, G-269, F#-269, E-269, D-269, C-269, Bb-270, A-270, G-270, F#-270, E-270, D-270, C-270, Bb-271, A-271, G-271, F#-271, E-271, D-271, C-271, Bb-272, A-272, G-272, F#-272, E-272, D-272, C-272, Bb-273, A-273, G-273, F#-273, E-273, D-273, C-273, Bb-274, A-274, G-274, F#-274, E-274, D-274, C-274, Bb-275, A-275, G-275, F#-275, E-275, D-275, C-275, Bb-276, A-276, G-276, F#-276, E-276, D-276, C-276, Bb-277, A-277, G-277, F#-277, E-277, D-277, C-277, Bb-278, A-278, G-278, F#-278, E-278, D-278, C-278, Bb-279, A-279, G-279, F#-279, E-279, D-279, C-279, Bb-280, A-280, G-280, F#-280, E-280, D-280, C-280, Bb-281, A-281, G-281, F#-281, E-281, D-281, C-281, Bb-282, A-282, G-282, F#-282, E-282, D-282, C-282, Bb-283, A-283, G-283, F#-283, E-283, D-283, C-283, Bb-284, A-284, G-284, F#-284, E-284, D-284, C-284, Bb-285, A-285, G-285, F#-285, E-285, D-285, C-285, Bb-286, A-286, G-286, F#-286, E-286, D-286, C-286, Bb-287, A-287, G-287, F#-287, E-287, D-287, C-287, Bb-288, A-288, G-288, F#-288, E-288, D-288, C-288, Bb-289, A-289, G-289, F#-289, E-289, D-289, C-289, Bb-290, A-290, G-290, F#-290, E-290, D-290, C-290, Bb-291, A-291, G-291, F#-2

130

Vln. I

Vln. II

Vla.

Vc.

Pno.

mf

mf

mf

mf

135

Vln. I

Vln. II

Vla.

Vc.

Pno.

mf

mf

mf

mf

142

Vln. I

Vln. II

Vla.

Vc.

Pno.

p

mp

p

p

148

Vln. I

Vln. II

Vla.

Vc.

Pno.

cresc.

cresc.

cresc.

cresc.

154

accel.

Vln. I

Vln. II

Vla.

Vc.

Pno.

accel.

160

$\text{♩} = 132$

Vln. I

Vln. II

Vla.

Vc.

Pno.

$\text{♩} = 132$

165

Score for measures 165-168. The key signature is three flats (B-flat, E-flat, A-flat). The time signature is 4/4. The score includes staves for Violin I, Violin II, Viola, Violoncello, and Piano. Violin I has a melodic line with eighth and sixteenth notes. Violin II has a similar melodic line, often in harmony with Violin I. Viola plays a steady eighth-note accompaniment. Violoncello plays a steady eighth-note accompaniment. Piano has a simple bass line with quarter and eighth notes.

Vln. I

Vln. II

Vla.

Vc.

Pno.

169

Score for measures 169-172. The key signature is three flats (B-flat, E-flat, A-flat). The time signature is 4/4. The score includes staves for Violin I, Violin II, Viola, Violoncello, and Piano. Violin I has a melodic line with eighth and sixteenth notes. Violin II has a similar melodic line, often in harmony with Violin I. Viola plays a steady eighth-note accompaniment. Violoncello plays a steady eighth-note accompaniment. Piano has a simple bass line with quarter and eighth notes.

Vln. I

Vln. II

Vla.

Vc.

Pno.

174

Score for measures 174-176. The key signature is three flats (B-flat, E-flat, A-flat). The time signature is 12/8. The instruments are Vln. I, Vln. II, Vla., Vc., and Pno. Vln. I has a whole rest in measure 174 and a sixteenth-note melody in measure 175. Vln. II plays a continuous sixteenth-note pattern. Vla. has a whole rest in measure 174 and a sixteenth-note melody in measure 175. Vc. plays a bass line with eighth notes. Pno. is silent.

Vln. I

Vln. II

Vla.

Vc.

Pno.

177

Score for measures 177-179. The key signature is three flats (B-flat, E-flat, A-flat). The time signature is 12/8. The instruments are Vln. I, Vln. II, Vla., Vc., and Pno. Vln. I and Vln. II play sixteenth-note patterns. Vla. plays a melody with eighth notes. Vc. plays a bass line with eighth notes. Pno. is silent.

Vln. I

Vln. II

Vla.

Vc.

Pno.

180

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 180-182. Vln. I and II play a melodic line with eighth and sixteenth notes. Vla. plays a rhythmic pattern. Vc. plays a bass line. Pno. is silent.

183

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 183-186. Vln. I and II play a melodic line with eighth and sixteenth notes. Vla. plays a rhythmic pattern. Vc. plays a bass line. Pno. is silent.

187

Vln. I

Vln. II

Vla.

Vc.

Pno.

The musical score for measures 187-191 features five staves. The Violin I and Violin II staves are empty, indicating rests. The Viola and Violoncello staves contain a rhythmic pattern of eighth and sixteenth notes, with some measures featuring a key signature change to one sharp. The Piano staff is also empty, indicating rests.

192

Vln. I

Vln. II

Vla.

Vc.

Pno.

The musical score for measures 192-196 features five staves. The Violin I and Violin II staves are empty, indicating rests. The Viola and Violoncello staves contain a rhythmic pattern of eighth and sixteenth notes, with some measures featuring a key signature change to one sharp. The Piano staff is also empty, indicating rests.

196

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 196-199. Vln. I and II are silent. Vla and Vc play a rhythmic pattern of eighth and sixteenth notes. Pno is silent.

200

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 200-202. Vln. I and II play eighth notes. Vla and Vc continue the rhythmic pattern. Pno is silent.

203

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 203-205. Vln. I and II play eighth notes. Vla and Vc continue the rhythmic pattern. Pno is silent.

206

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 206-208. Vln. I and II play a melodic line with eighth notes and slurs. Vla. and Vc. play a rhythmic accompaniment with eighth notes. Pno. is silent.

209

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 209-211. Vln. I and II play a melodic line with eighth notes and slurs. Vla. and Vc. play a rhythmic accompaniment with eighth notes. Pno. is silent.

212

Vln. I

Vln. II

Vla.

Vc.

Pno.

215

Vln. I

Vln. II

Vla.

Vc.

Pno.

Broad

Tempo I

220

Vln. I

Vln. II

Vla.

Vc.

Pno.

225

molto rit. A Tempo

Vln. I

Vln. II

Vla.

Vc.

molto rit. A Tempo

Pno.

231

Vln. I

Vln. II

Vla.

Vc.

Pno.

237

Rit

Piu Mosso

Vln. I

Vln. II

Vla.

Vc.

p cresc

mf

p cresc

Rit

Piu Mosso

Pno.

246

Vln. I

Vln. II

Vla.

Vc.

Pno.

251

Vln. I

Vln. II

Vla.

Vc.

Pno.

f

cresc.

256

Vln. I

Vln. II

Vla.

Vc.

Pno.

261

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 261-264. Vln. I has a melodic line starting at measure 262 with a forte (f) dynamic. Vln. II plays a continuous sixteenth-note pattern. Vla. and Vc. play a similar sixteenth-note pattern. Pno. is silent.

265

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 265-268. Vln. I has a melodic line. Vln. II plays a continuous sixteenth-note pattern. Vla. and Vc. play a similar sixteenth-note pattern. Pno. is silent.

269

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 269-275. Vln. I and II play a melodic line with a key signature of one flat. Vla. and Vc. play a rhythmic pattern of eighth notes. Pno. is silent.

Andante ♩=100

276

Vln. I

Vln. II

Vla.

Vc.

pizz

Andante ♩=100

Pno.

Measures 276-281. Vln. I and II are silent. Vla. and Vc. play a rhythmic pattern of eighth notes. Pno. is silent.

282

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 282-287: Vln. I and II play chords. Vla. plays eighth notes. Vc. plays a bass line. Pno. is silent.

288

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 288-292: Vln. I has a long note. Vln. II plays chords. Vla. plays eighth notes. Vc. plays a bass line. Pno. is silent.

293

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 293-297: Vln. I has a long note. Vln. II plays chords. Vla. plays eighth notes. Vc. plays a bass line. Pno. is silent.

298

Vln. I

Vln. II

Vla.

Vc.

Pno.

305

Vln. I

Vln. II

Vla.

Vc.

Pno.

312

Vln. I

Vln. II

Vla.

Vc.

Pno.

316

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 316-318. Vln. I is silent. Vln. II plays eighth notes. Vla. and Vc. play sixteenth notes. Pno. is silent.

319

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 319-321. Vln. I is silent. Vln. II plays eighth notes. Vla. and Vc. play sixteenth notes. Pno. is silent.

322

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 322-324. Vln. I has a long note. Vln. II plays eighth notes. Vla. and Vc. play sixteenth notes. Pno. is silent.

325

Vln. I

Vln. II

Vla.

Vc.

Pno.

328

Vln. I

Vln. II

Vla.

Vc.

Pno.

rit.

ff

Vivace ♩=132

333

Vln. I

Vln. II

Vla.

Vc.

Pno.

336

Vln. I

Vln. II

Vla.

Vc.

Pno.

339

Vln. I

Vln. II

Vla.

Vc.

Pno.

342

Vln. I

Vln. II

Vla.

Vc.

Pno.

345

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 345-347. Vln. I: Treble clef, key signature of one sharp (F#), 2/4 time. Measure 345: Quarter rest, eighth notes G4, A4, B4, C5, eighth notes B4, A4, G4, F#4. Measure 346: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Measure 347: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Vln. II: Treble clef, 2/4 time. Measure 345: Quarter rest. Measure 346: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Measure 347: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Vla.: Bass clef, 2/4 time. Measure 345: Quarter rest. Measure 346: Quarter rest. Measure 347: Quarter rest. Vc.: Bass clef, 2/4 time. Measure 345: Quarter rest. Measure 346: Quarter rest. Measure 347: Quarter rest. Pno.: Bass clef, 2/4 time. Measure 345: Quarter rest. Measure 346: Quarter rest. Measure 347: Quarter rest.

348

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 348-350. Vln. I: Treble clef, key signature of one sharp (F#), 2/4 time. Measure 348: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Measure 349: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Measure 350: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Vln. II: Treble clef, 2/4 time. Measure 348: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Measure 349: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Measure 350: Quarter notes G4, A4, eighth notes B4, C5, quarter notes B4, A4, eighth notes G4, F#4. Vla.: Bass clef, 2/4 time. Measure 348: Quarter rest. Measure 349: Quarter rest. Measure 350: Quarter rest. Vc.: Bass clef, 2/4 time. Measure 348: Quarter rest. Measure 349: Quarter rest. Measure 350: Quarter rest. Pno.: Bass clef, 2/4 time. Measure 348: Quarter rest. Measure 349: Quarter rest. Measure 350: Quarter rest.

351

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 351-353. Vln. I and II play a melody with triplets. Vla. and Vc. are silent. Pno. is silent.

354

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 354-356. Vln. I and II play a melody with triplets. Vla. and Vc. are silent. Pno. is silent.

357

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 357-359. Vln. I and II play a melodic line with triplets. Vla. and Vc. are silent. Pno. is silent.

360

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 360-362. Vln. I and II play a melodic line with triplets. Vla. and Vc. are silent. Pno. is silent.

363

Vln. I

Vln. II

Vla.

Vc.

Pno.

366

Andante ♩=100

Vln. I

Vln. II

Vla.

Vc.

Andante ♩=100

Pno.

372

Vln. I

Vln. II

Vla.

Vc.

Pno.

379

Vln. I

Vln. II

Vla.

Vc.

Pno.

385

Vln. I

Vln. II

Vla.

Vc.

Pno.

391

Vln. I

Vln. II

Vla.

Vc.

Pno.

397

Vln. I

Vln. II

Vla.

Vc.

Pno.

403

Vln. I

Vln. II

Vla.

Vc.

Pno.

409

Vln. I

Vln. II

Vla.

Vc.

Pno.

415

Vln. I

Vln. II

Vla.

Vc.

Pno.

III

423 **Chill** ♩=74

Vln. I

Vln. II

Vla.

Vc.

p

Chill ♩=74

Pno.

427

Vln. I

Vln. II

Vla.

Vc.

p

Pno.

431 **Bright** ♩=116

Vln. I

Vln. II

Vla.

Vc.

Pno.

Bright ♩=116

438

Vln. I

Vln. II

Vla.

Vc.

Pno.

444

Vln. I

Vln. II

Vla.

Vc.

Pno.

f

f

f

450

Vln. I

Vln. II

Vla.

Vc.

Pno.

f

454

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 454-458. Vln. I: Melodic line with eighth-note runs. Vln. II: Sustained melodic line. Vla.: Rhythmic accompaniment of eighth notes. Vc.: Rhythmic accompaniment of eighth notes. Pno.: Silent.

459

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 459-463. Vln. I: Melodic line with eighth-note runs. Vln. II: Sustained melodic line. Vla.: Rhythmic accompaniment of eighth notes. Vc.: Rhythmic accompaniment of eighth notes. Pno.: Silent.

464

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 464-469: Vln. I and II play a melodic line with eighth notes. Vla. is silent. Vc. plays a bass line with eighth notes. Pno. is silent.

470

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 470-474: Vln. I and II play a melodic line with eighth notes. Vla. plays a melodic line with eighth notes. Vc. plays a bass line with eighth notes. Pno. plays a rhythmic accompaniment with eighth notes.

475

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 475-479: Vln. I and II are silent. Vla. plays a melodic line with eighth notes. Vc. plays a bass line with eighth notes. Pno. plays a rhythmic accompaniment with eighth notes.

479

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 479-483. Vln. I and II have rests. Vla. has a melodic line. Vc. has a rhythmic pattern. Pno. has a complex accompaniment with many beamed sixteenth notes.

484

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 484-488. Vln. I and II enter with a melodic line. Vla. continues its melodic line. Vc. has a rhythmic pattern. Pno. has a complex accompaniment with many beamed sixteenth notes.

489

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 489-493. Vln. I and II continue their melodic line. Vla. continues its melodic line. Vc. has a rhythmic pattern. Pno. has a complex accompaniment with many beamed sixteenth notes.

494

Vln. I

Vln. II

Vla.

Vc.

Pno.

499

Vln. I

Vln. II

Vla.

Vc.

Pno.

504

Vln. I

Vln. II

Vla.

Vc.

Pno.

509

Vln. I

Vln. II

Vla.

Vc.

Pizz.

Pno.

514

Vln. I

Vln. II

Vla.

Vc.

Pno.

519

Vln. I

Vln. II

Vla.

Vc.

Pno.

arco

arco

arco

525

Vln. I

Vln. II

Vla.

Vc.

Pno.

arco

529

Vln. I

Vln. II

Vla.

Vc.

Pno.

Molto Rit

arco

arco

arco

Molto Rit

Maestoso ♩=100

535

Vln. I

Vln. II

Vla.

Vc.

Pno.

Maestoso ♩=100

Measures 535-538. Vln. I and II play triplets of eighth notes. Vla. plays a triplet of eighth notes. Vc. plays a half note. Pno. is silent.

539

Vln. I

Vln. II

Vla.

Vc.

Pno.

cresc

cresc

Measures 539-542. Vln. I and II play triplets of eighth notes. Vla. plays a triplet of eighth notes. Vc. plays a triplet of eighth notes. Pno. is silent.

Rit **Heavy**

543

Vln. I

Vln. II

Vla.

Vc.

Pno.

The musical score for measures 543-548 is written for a string quartet and piano. The tempo is marked 'Rit' (Ritardando) and the dynamics are 'Heavy'. The string parts (Vln. I, Vln. II, Vla., Vc.) play a rhythmic pattern of eighth notes in triplets from measure 543 to 546. In measures 547 and 548, the strings play a different rhythmic pattern. The piano part (Pno.) is mostly silent, with some low notes in measures 547 and 548.

549

Vln. I

Vln. II

Vla.

Vc.

Pno.

The musical score for measures 549-554 continues the 'Rit' and 'Heavy' tempo and dynamics. The string parts (Vln. I, Vln. II, Vla., Vc.) continue with a rhythmic pattern of eighth notes in triplets. The piano part (Pno.) has some low notes in measures 549-554.

555

Vln. I

Vln. II

Vla.

Vc.

pizz.

pizz.

pizz.

pizz.

Pno.

561

Vln. I

Vln. II

Vla.

Vc.

Pno.

567

Vln. I

Vln. II

Vla.

Vc.

arco

arco

arco

arco

Pno.

572

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 572-575. Vln. I and II play a melody of eighth notes. Vla. plays a continuous sixteenth-note pattern. Vc. plays a continuous eighth-note pattern. Pno. is silent.

576

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 576-580. Vln. I and II play a melody of eighth notes. Vla. plays a continuous sixteenth-note pattern. Vc. plays a continuous eighth-note pattern. Pno. is silent.

581

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 581-585. Vln. I and II play eighth notes. Vla. and Vc. play eighth notes with triplets. Pno. is silent until measure 585 where it plays a triplet of eighth notes in both hands.

587

Vln. I

Vln. II

Vla.

Vc.

Pno.

Measures 587-591. Vln. I and II play eighth notes with triplets. Vla. and Vc. play eighth notes with triplets. Pno. plays a triplet of eighth notes in both hands.

591

Vln. I

Vln. II

Vla.

Vc.

Pno.

594

Vln. I

Vln. II

Vla.

Vc.

Pno.

Mirrors

McDaniel Brothers

Walking

♩ = 104

Violin I

Violin II

Viola

Violoncello

p

p pizz

7

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

p poco esp.

p pizz

arco

12

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

mp esp.

arco mp esp.

6

mp

mp poco esp.

17

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

This musical score is divided into three systems. The first system includes staves for Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), and Violoncello (Vc.). The second system is for the Ensemble (Ens.), and the third system is for the Loops. The score is written in 4/4 time and features a variety of musical notations, including eighth notes, quarter notes, and sixteenth notes, as well as rests and accidentals. The Vln. I and Vln. II parts are marked with a 17, indicating a specific measure or section. The Vla. part has a 3 marking. The Vc. part has a 6 marking. The Ens. part has a 3 marking. The Loops part has a 6 marking. The score is written in a standard musical notation style, with a key signature of one flat (Bb) and a time signature of 4/4. The Vln. I and Vln. II parts are in the treble clef, while the Vla. and Vc. parts are in the bass clef. The Ens. part is in the bass clef. The Loops part is in the bass clef. The score is written in a standard musical notation style, with a key signature of one flat (Bb) and a time signature of 4/4. The Vln. I and Vln. II parts are in the treble clef, while the Vla. and Vc. parts are in the bass clef. The Ens. part is in the bass clef. The Loops part is in the bass clef.

21

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

p poco

pizz

mp esp.

6

3

3

6

Score for Vln. I, Vln. II, Vla., Vc., Ens., and Loops.

Vln. I: Treble clef. Measure 26: quarter note G4, quarter rest. Measure 27: whole rest. Measure 28: *mp esp.* half note G4, quarter note A4, quarter note B4, quarter note C5.

Vln. II: Treble clef. Measure 26: quarter note G4, quarter rest. Measure 27: *mp* quarter note G4, quarter note A4, quarter note B4, quarter note C5. Measure 28: quarter note G4, quarter note A4, quarter note B4, quarter note C5.

Vla.: Bass clef. Measure 26: quarter note G2, quarter note A2, quarter note B2, quarter note C3. Measure 27: quarter note G2, quarter note A2, quarter note B2, quarter note C3. Measure 28: quarter note G2, quarter note A2, quarter note B2, quarter note C3.

Vc.: Bass clef. Measure 26: half note G2, half note A2. Measure 27: quarter note G2, quarter note A2. Measure 28: half note G2, half note A2, quarter note B2, quarter note C3.

Ens.: Grand staff. Measure 26: Treble: half note G4, half note A4. Bass: quarter note G2, quarter note A2, quarter note B2, quarter note C3. Measure 27: Treble: whole rest. Bass: whole rest. Measure 28: Treble: quarter note G4, quarter note A4, quarter note B4, quarter note C5. Bass: quarter note G2, quarter note A2, quarter note B2, quarter note C3.

Loops: Grand staff. Measure 26: Treble: quarter note G4, quarter note A4, quarter note B4, quarter note C5. Bass: quarter note G2, quarter note A2, quarter note B2, quarter note C3. Measure 27: Treble: quarter note G4, quarter note A4, quarter note B4, quarter note C5. Bass: quarter note G2, quarter note A2, quarter note B2, quarter note C3. Measure 28: Treble: quarter note G4, quarter note A4, quarter note B4, quarter note C5. Bass: quarter note G2, quarter note A2, quarter note B2, quarter note C3.

6

29

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

This musical score page contains measures 29 through 31. The staves are arranged as follows:

- Vln. I:** Treble clef. Measure 29 has a half note G4, a quarter note A4, and a half note B4, all beamed together. Measure 30 has a whole note G4. Measure 31 has a whole note G4.
- Vln. II:** Treble clef. Measure 29 has a half note G4, a quarter note A4, and a half note B4, all beamed together. Measure 30 has a whole note G4. Measure 31 has a whole rest.
- Vla.:** Bass clef. Measure 29 has a half note G3, a quarter note A3, and a half note B3, all beamed together. Measure 30 has a whole note G3. Measure 31 has a whole note G3.
- Vc.:** Bass clef. Measure 29 has a half note G3, a quarter note A3, and a half note B3, all beamed together. Measure 30 has a whole note G3. Measure 31 has a whole note G3.
- Ens.:** Treble and Bass clefs. Measure 29 has a half note G4, a quarter note A4, and a half note B4, all beamed together. Measure 30 has a whole note G4. Measure 31 has a whole note G4.
- Loops:** Multiple staves. Measure 29 has a half note G4, a quarter note A4, and a half note B4, all beamed together. Measure 30 has a whole note G4. Measure 31 has a whole note G4.

32

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

This musical score page contains measures 32 through 34. The top section includes staves for Violin I, Violin II, Viola, and Violoncello, all of which play a melodic line with long, sweeping slurs. Below these is the Ensemble section, consisting of piano and bass staves with rhythmic accompaniment. The bottom section, labeled 'Loops', contains a series of staves for various electronic or sampled sounds, including arpeggiated patterns, sustained textures, and rhythmic pulses. The page is numbered '32' at the top left and '7' at the top right.

35

Vln. I

Vln. II

Vla.

Vc.

p dolce esp.

Ens.

Loops



40

Vln. I

Vln. II

Vla.

Vc.

6/4

Vivace

46 $\text{♩} = 126$

Vln. I *f*

Vln. II

Vla.

Vc.

49

Vln. I

Vln. II *f*

52

Vln. I

Vln. II

55

Vln. I *f*

Vln. II *mf*

Ens.

58

Vln. I

Vln. II

Ens.

61

Vln. I *mf*

Vln. II *mf*

Ens.

Measures 61-62. Violin I and II play sixteenth-note patterns. The Ensemble has a sustained chord in the left hand and a melodic line in the right hand starting in measure 62.

63

Vln. I

Vln. II

Ens.

Measures 63-65. Violin I and II continue with sixteenth-note patterns. The Ensemble has a sustained chord in the left hand and a melodic line in the right hand.

66

Vln. I *cresc.* 6 6 6 6 *f* 6 3 *sfz*

Vln. II *cresc.* 6 6 6 6 *f* 6 3 *sfz*

Ens.

Measures 66-67. Violin I and II play sixteenth-note patterns with crescendo and sforzando markings. The Ensemble has a sustained chord in the left hand and a melodic line in the right hand.

68

Vln. I 6 3 *sfz*

Vln. II *sfz* *f*

Ens.

Measures 68-70. Violin I and II play sixteenth-note patterns with sforzando and forte markings. The Ensemble has a sustained chord in the left hand and a melodic line in the right hand.

71

Vln. I

Vln. II

Ens.

73

Vln. I

Vln. II

Ens.

mf

3

6

75

Vln. I

Vln. II

Ens.

f

78

Vln. I

Vln. II

Ens.

12

81

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

$\text{♩} = 104$

mp

$\text{♩} = 104$

==

86

Vln. I

Vln. II

Vla.

Vc.

Loops

mp esp.

mp esp.

arco mp. esp.

mp esp.

91

Vln. I

Vln. II

Vla.

Vc.

Loops

==

96

Vln. I

Vln. II

Vla.

Vc.

Loops

99

Vln. I *mp quasi flautando*

Vln. II *p quasi flautando*

Vla.

Vc.

Ens.

Loops

The musical score for measures 99 and 100 is presented in a multi-staff format. The top section includes staves for Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), and Violoncello (Vc.). Vln. I is marked *mp quasi flautando* and Vln. II is marked *p quasi flautando*. The bottom section includes staves for the Ensemble (Ens.) and Loops. The Ensemble section features complex rhythmic patterns and melodic lines. The Loops section features a variety of musical motifs, including a triplet in the third staff. The score is written in a key with one sharp (F#) and a common time signature (C).

101

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

This musical score page contains measures 101 and 102. The staves are arranged as follows: Vln. I (Violin I), Vln. II (Violin II), Vla. (Viola), Vc. (Violoncello), Ens. (Ensemble), and Loops. The Vln. I staff begins with a measure rest and a first ending bracket. The Vln. II staff plays a melodic line. The Vla. staff has a long note with a first ending bracket. The Vc. staff has a long note with a first ending bracket. The Ens. staff consists of four staves with complex rhythmic patterns. The Loops staff consists of six staves with rhythmic patterns. The page number 101 is at the top left, and 15 is at the top right.

16

103

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

This musical score page contains measures 103 and 104. The staves are arranged as follows: Violin I (Vln. I) in treble clef, Violin II (Vln. II) in treble clef, Viola (Vla.) in alto clef, Violoncello (Vc.) in bass clef, Ensemble (Ens.) in three staves (bass, alto, and treble), and Loops in six staves (three treble and three bass). Measure 103 begins with a key signature change to one sharp (F#) and a common time signature. The Violin I part features a half note F#4, a quarter rest, and a half note G#4. The Violin II part plays a continuous eighth-note pattern: A3, B3, C#3, D4, E4, F#4, G#4, A4. The Viola part has a half note F#3, a quarter rest, and a half note G#3. The Violoncello part plays a half note F#2, a quarter rest, and a half note G#2. The Ensemble section consists of three staves: the bottom staff (bass) has a continuous eighth-note pattern of F#2, G#2, A2, B2, C#3, D3, E3, F#3; the middle staff (alto) has a half note F#3, a quarter rest, and a half note G#3; the top staff (treble) has a continuous eighth-note pattern of F#4, G#4, A4, B4, C#5, D5, E5, F#5. The Loops section consists of six staves: the top two staves (treble) have a continuous eighth-note pattern of F#4, G#4, A4, B4, C#5, D5, E5, F#5; the middle two staves (treble) have a continuous eighth-note pattern of A3, B3, C#3, D4, E4, F#4, G#4, A4; the bottom two staves (bass) have a continuous eighth-note pattern of F#2, G#2, A2, B2, C#3, D3, E3, F#3. Measure 104 continues the patterns from measure 103, with the Violin I part playing a half note A4, a quarter rest, and a half note B4. The Violin II part continues its eighth-note pattern. The Viola part has a half note A3, a quarter rest, and a half note B3. The Violoncello part has a half note A2, a quarter rest, and a half note B2. The Ensemble section continues with the same patterns as in measure 103. The Loops section continues with the same patterns as in measure 103.

[illegible]

108

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

This musical score page contains measures 108, 109, and 110. The instruments are Violin I, Violin II, Viola, Violoncello, Ensemble, and Loops. Measures 108 and 109 are marked with a '108' at the beginning of the first staff. The score is written in treble and bass clefs with various musical notations including notes, rests, and slurs. The Ensemble part is written in a grand staff (treble and bass clef). The Loops section consists of seven staves, with the first four in treble clef and the last three in bass clef. The music features a mix of eighth, quarter, and half notes, with some measures containing slurs and ties.

111

Vln. I

Vln. II

Vla.

Vc.

Ens.

Loops

p pizz

p pizz

3

The River

McDaniel Brothers

Bright, easy

semplice

♩ = 116

 mf

Violin I

Violin II

Viola

Violoncello

mf

laid back

⑤

mf

⑨

13

Measures 13-15. The score is in 3/4 time with a key signature of one sharp (F#). It features four staves: two treble clefs and two bass clefs. The melody is primarily in the upper staves, with a complex accompaniment in the lower staves. A double bar line is present after measure 15.

16

Measures 16-18. The score is in 3/4 time with a key signature of one sharp (F#). It features four staves. Measures 16-18 show a change in the melody and accompaniment. The lower staves have a more active role. A double bar line is present after measure 18.

p dolce

p dolce

p dolce

20

Measures 20-22. The score is in 3/4 time with a key signature of one sharp (F#). It features four staves. Measures 20-22 show a continuation of the melody and accompaniment. A double bar line is present after measure 22.

p dolce

(26)

26



(30)

30



(35)

35

[illegible]

51

6 6 6 6 6 6



53

6 6 6 6 6 6

p pizz
p pizz
p pizz
p pizz

3 3 3 3 3 3

♩ = 116
Bright

7

61

arco pp sempre cresc poco a poco

arco p sempre cresc poco a poco

arco p sempre cresc poco a poco

arco p sempre cresc poco a poco

Bright



65

arco p sempre cresc poco a poco

arco p sempre cresc poco a poco

arco p sempre cresc poco a poco

arco p sempre cresc poco a poco

70

70



75

Heavy, Marcato

75

Heavy, Marcato

Heavy, Marcato

81

Violin I
Violin II
Viola
Violoncello
Piano



84

Violin I
Violin II
Viola
Violoncello
Piano

86

Musical score for measures 86-88. The score is written for a piano with four staves: two for the right hand (treble and alto clefs) and two for the left hand (bass and tenor clefs). The key signature is one sharp (F#). The time signature is 4/4. The music features a complex, fast-moving melody in the right hand, primarily consisting of eighth and sixteenth notes. The left hand provides a steady accompaniment with quarter and eighth notes. The piece concludes with a double bar line and repeat dots.



89

Musical score for measures 89-91. The score is written for a piano with four staves: two for the right hand (treble and alto clefs) and two for the left hand (bass and tenor clefs). The key signature is one sharp (F#). The time signature is 4/4. The music continues the complex, fast-moving melody in the right hand, with the left hand providing a steady accompaniment. The piece concludes with a double bar line and repeat dots.

92

Chorale

$\text{♩} = 91$

f cresc.

f cresc.

f cresc.

f cresc.

mf

Chorale



96

Moving

♩ = 116

102

p anxious, *cresc. poco a poco*

p anxious, *cresc. poco a poco*

p anxious, *cresc. poco a poco*

p esp. *cresc. poco a poco*

Moving



107

111

f esp.

f

f

f

115

f

mp

f

mp

f

mp

119

rit.

Massive ♩=100

f esp.

f esp.

f esp.

sfz

sfz

sfz

f pesante

rit.

Massive ♩=100

124

sfz

sfz



129

sfz

sfz

133 **Bright** ♩=116

pizz

p pizz

p pizz

pizz *p*

Bright ♩=116

Double bar line

139

Double bar line

145

arco

mp cantabile, sempre cresc. poco a poco

arco

mp cantabile, sempre cresc. poco a poco

arco

pp *sempre cresc. poco a poco*

pp arco poco sul pont. ad lib. sempre cresc e non pont poco a poco

148

150

Musical score for measures 150-151. The score is written for four staves. The first two staves (treble clef) show a melodic line with a long slur over measures 150 and 151. The third staff (bass clef) features a complex rhythmic pattern with sixteenth notes and slurs, marked with a '6' below each measure. The fourth staff (bass clef) shows a melodic line with eighth notes and slurs.

152

Musical score for measures 152-153. The score is written for four staves. The first two staves (treble clef) show a melodic line with a long slur over measures 152 and 153. The third staff (bass clef) features a complex rhythmic pattern with sixteenth notes and slurs, marked with a '6' below each measure. The fourth staff (bass clef) shows a melodic line with eighth notes and slurs.

154

Measures 154 and 155 of a musical score. The score is written for a grand staff (treble and bass clefs) and a piano accompaniment (treble and bass clefs). The piano part features a complex, rhythmic pattern in the right hand, consisting of eighth notes grouped in pairs, with a '6' marking below the staff. The left hand of the piano part plays a simple, steady eighth-note pattern. The vocal part (top staves) features a melodic line with a long, sustained note in measure 154, followed by a series of eighth notes in measure 155.

156

Measures 156 and 157 of a musical score. The score is written for a grand staff (treble and bass clefs) and a piano accompaniment (treble and bass clefs). The piano part features a complex, rhythmic pattern in the right hand, consisting of eighth notes grouped in pairs, with a '3' marking below the staff. The left hand of the piano part plays a simple, steady eighth-note pattern. The vocal part (top staves) features a melodic line with a long, sustained note in measure 156, followed by a series of eighth notes in measure 157.

158

Musical score for measures 158-159. The score is written for a grand piano (treble and bass staves) and a four-part vocal ensemble (soprano, alto, tenor, and bass staves). The key signature is one flat (B-flat major or E-flat minor). The time signature is 4/4. The vocal parts feature long, sustained notes with ties across the bar lines. The piano accompaniment consists of a steady eighth-note pattern in the right hand and a slower, more melodic line in the left hand. The piece concludes with a double bar line.

160

Musical score for measures 160-161. The score is written for a grand piano (treble and bass staves) and a four-part vocal ensemble (soprano, alto, tenor, and bass staves). The key signature is one flat (B-flat major or E-flat minor). The time signature is 4/4. The vocal parts feature long, sustained notes with ties across the bar lines. The piano accompaniment consists of a steady eighth-note pattern in the right hand and a slower, more melodic line in the left hand. The piece concludes with a double bar line.

Musical score for piano, measures 162-165. The score is written for four staves: two grand staves (treble and bass clef) and two individual staves (treble and bass clef). The first three staves are marked *ff* (fortissimo). The music features sixteenth-note patterns and triplet markings (3) in the bass clef staves. The notation includes various musical symbols such as notes, rests, and dynamic markings.

Measures 162-165. The score is written for four staves: two grand staves (treble and bass clef) and two individual staves (treble and bass clef). The first three staves are marked *ff* (fortissimo). The music features sixteenth-note patterns and triplet markings (3) in the bass clef staves. The notation includes various musical symbols such as notes, rests, and dynamic markings.

163

Musical score for measures 163-166. The score is written for four staves: Treble 1, Treble 2, Bass 1, and Bass 2. Measures 163 and 164 feature sixteenth-note patterns in the upper staves, with a '6' (finger 6) indicated below the notes. Measures 165 and 166 feature a more complex bass line with triplets (marked '3') and sixteenth-note patterns. The piece concludes with a double bar line at the end of measure 166.

164

Musical score for measures 167-170. The score continues with four staves. Measures 167 and 168 feature sixteenth-note patterns in the upper staves, with a '6' (finger 6) indicated below the notes. Measures 169 and 170 feature a more complex bass line with triplets (marked '3') and sixteenth-note patterns. The piece concludes with a double bar line at the end of measure 170.

165

Musical score for measures 165-168. The score is written for four staves (two treble and two bass clefs). Measures 165 and 166 feature a melody in the upper staves with a '6' (sixteenth note) marking. Measures 167 and 168 feature a melody in the lower staves with a '3' (triple) marking. The notation includes various musical symbols such as notes, rests, and bar lines.

166

Musical score for measures 169-172. The score is written for four staves (two treble and two bass clefs). Measures 169 and 170 feature a melody in the upper staves with a '6' (sixteenth note) marking. Measures 171 and 172 feature a melody in the lower staves with a '3' (triple) marking. The notation includes various musical symbols such as notes, rests, and bar lines.

167

168

169

170

Musical score for measures 169-172. The score is written for four staves (two treble and two bass). Measures 169-172 feature a continuous melodic line in the upper staves, primarily consisting of eighth and sixteenth notes, with a '6' (sixteenth) marking below the first staff. The lower staves feature a complex, fast-moving bass line with many sixteenth notes, including triplets marked with a '3'.

Musical score for measures 173-176. Measures 173-175 continue the melodic and bass patterns from the previous system. Measure 176 is a full rest for all parts. The word **Broad** is written above the first staff of measure 176, indicating a change in tempo or feel.

Musical score for measures 177-180. Measures 177-179 continue the melodic and bass patterns. Measure 180 is a full rest for all parts. The word **Broad** is written above the first staff of measure 180, indicating a change in tempo or feel.