

Tracing the Evolution of Percussion Music from Canon to Contemporary

by

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ABSTRACT

Three percussion recitals were given in lieu of a written dissertation. The work below represents the programming and research from the dissertation recitals.

My three dissertation recitals aimed to cover musical topics of performance and research which are important to me personally and which I hope to pursue in my professional teaching and performing career. The first two recitals focused on providing a context to understand where Western classical percussion music came into prominence and how a canon of solo and chamber works then developed. These recitals also show how this canon subsequently grew into being an influential part of new musical composition in the 21st century. The first recital, taking place in the Hankinson Rehearsal Hall, focused on the history and canon that has been built up in percussion music, and illustrated a wide breadth of musical ideas and their development between 1936 and 1986. The second recital was performed in Britton Recital Hall, and focused on the current state of percussion music, with all the works being composed within the last 20 years. My final recital was canceled and recalibrated in response to the COVID-19 pandemic; this shift resulted in the creation of a lecture video on Karlheinz Stockhausen's pivotal work, *Kontakte* (1959-60), for piano, percussion, and electronics. This piece represents a pivotal time in my musical upbringing, not to mention the immense impact it had on the future of contemporary music. These recitals together

represent both the history and future direction of percussion music, and include many pieces which I hope to make staples of my performing and teaching career.

Chapter 1

First Dissertation Recital Program

Colin McCall, Percussion

Friday, October 11, 2019
Moore Building, Hankinson Rehearsal Hall
7:30 PM

Three Dances for Solo Snare Drum (1962)

Cretan Dance
Foxtrot
Fandango

Warren Benson (1924-2005)

Conversation Suite (1962)

Tender Talk
How Nice It Was...Repeatedly
Lingering Chagrin
Again the Hazy Answer!
A Lame Excuse

Akira Miyoshi (1933-2013)

Quartet (1936)

Moderate
Axial Symmetry
Fast

John Cage (1912-1992)

Jean Carlo Urena Gonzalez, Emily Salgado,
& Clark Hubbard, *percussion*

Reflections on the Nature of Water (1986)

Crystalline
Fleet
Tranquil
Gently Swelling
Profound
Relentless

Jacob Druckman (1928-1996)

Thirteen Drums (1985)

Maki Ishii (1936-2003)

First Dissertation Recital Program Notes

This first program is a selection of classics and standards from the percussion solo and chamber repertoire. I chose to take this direction for a number of reasons, but primarily that I wanted to make sure these well-known and often played pieces were something I knew well and could teach to my students in the future. I think the future of percussion music, and all music really, requires two key components to thrive: a respect and knowledge of the things which came before, and an eye towards innovation.

Warren Benson is an icon in percussion history, not only for his playing and percussion teaching, but as a mentor and composition teacher to many important percussionists such as Gordon Stout, and founding members of the groundbreaking Nexus percussion ensemble: William Cahn, Robin Engelman, and Bob Becker. Benson's contribution to the percussion repertoire is seen most strongly in his works *Three Pieces for Percussion Quartet* (1960) and the piece you will hear tonight: *Three Dances for Solo Snare Drum*. The three movements act as miniature explorations of dance styles, realized on the seemingly monochromatic snare drum. Benson overcomes this musical obstacle by utilizing a wide variety of sounds through shifting playing areas on the drum, changing implements, and even incorporating the clicking of sticks together as a part of the performance. All of these elements come together to create what I hope is a bright and captivating snare drum performance.

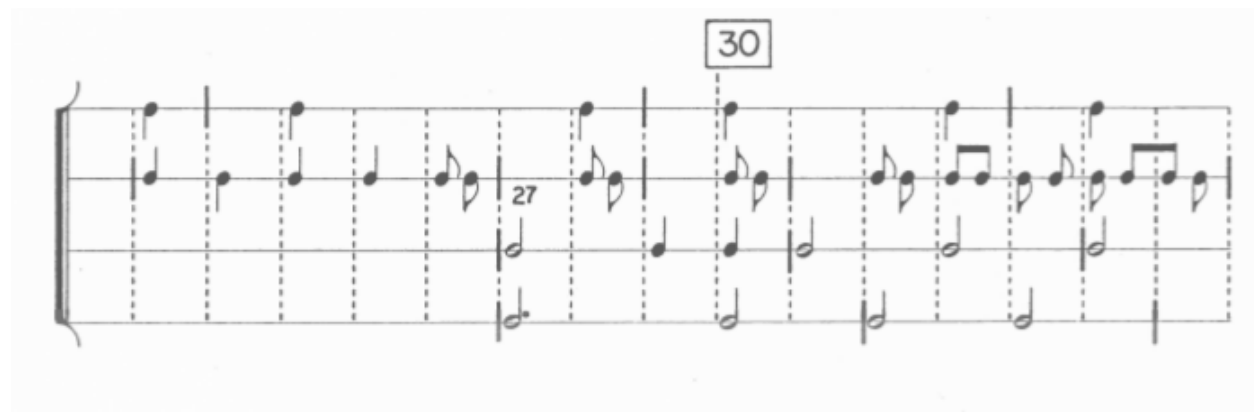
The advancement of Japanese marimba repertoire through the latter part of the 20th century is due in large part to the work of Akira Miyoshi. *Conversation Suite* is the earliest of his works for marimba, and appropriately shows his initial lack of

seriousness surrounding the instrument. Playful dancing figures and coy titles in this piece illustrate a sense of entertainment and joy Miyoshi drew from the marimba, which promptly shifted by the time he finished his intense and volatile *Torse III* in 1968.

Another iconic advocate for the development of marimba repertoire in Japan is marimbist and prolific composer Keiko Abe, who premiered *Conversation Suite* in 1962. It is from her interpretations and teachings that the sound qualities and performance styles of Japanese marimba repertoire began to develop. My performance of *Conversation Suite* is informed by this history of performance style, with a focus on brightness, clarity, and a wide dynamic range. I chose this piece because I saw an opportunity to improve my playing in these specific stylistic ways, and it has been a joy to dig into my musicality and pull out some new ideas!

John Cage's *Quartet* is his earliest dive into writing for percussion ensemble, closely followed by an explosion of percussion works, especially his three landmark *Constructions* (1939-1941). Composed in four movements, Cage suggests that performers could play only one of the slower movements for the sake of time, which I have chosen to do. One of the most interesting aspects of this piece is the way it is notated, and the implications that holds for creative liberties from the performers. The score shows us a creative, outside-the-box kind of thinking, with each part being limited notationally to one line on a grid, with the notehead and stem direction indicating only duration of sound or choice of sound type (seen below). As performers, we have been tasked with choosing each instrument for this piece, as Cage gives only one simple instruction on the first page of the score: "QUARTET for percussion: no instruments specified." From this indication, we have chosen a wide selection of instruments, sounds, and devices,

including electronic samples, pitch pipes, brazilian drums, a water bottle, and even the large grey cart which we used to move these instruments into the room. The greatest challenge with this piece has been making it our own, crafting a thoughtful and innovative approach to a piece now reaching towards 100 years of age.



Reflections on the Nature of Water has become an iconic staple of our solo percussion canon, being listed on the audition lists of most colleges and festivals, and being performed and recorded world-wide on a regular basis. American composer, Jacob Druckman, has crafted a delicate and color-filled musical journey in this piece, with movements eliciting vivid imagery of the many forms of water: frozen icicles, gentle streams, trickles from a faucet, droplets resting on a window, and the list goes on as far as your imagination can take it. The idea of drawing these types of imagery (water, nature, etc) through music is not a new one, with the likes of Claude Debussy's *La Mer* and Benjamin Britten's *Four Sea Interludes* creating evocative soundscapes and fostering almost mythical lineages. Druckman has taken a scaled back approach in this piece by utilizing only marimba, which allows for a more delicate take on the subject.

My plan with programming this work is that I can utilize the skills and sensibilities I learn to apply to my future playing and teaching, and based on my

experience with the music in preparations leading to this recital, I can see this becoming a staple in my future recital repertoire.

Thirteen Drums is a modern elaboration and adaptation of influences from Japanese Taiko drumming, as performed by musical groups like the famous ensemble Kodo. Maki Ishii creates an almost meditative space for the performer and audience alike, allowing all involved to exit their surroundings for thirteen minutes and experience the music of the drums, simultaneously bombastic, powerful, controlled, and focused. Ishii specifically chose to avoid the trend he noticed in percussion writing, one of using many different instruments to create diverse and subtle colors, generally relying on what he called the “sounds of symphonic breadth.” Instead he uses drums, which have very little resonance or decay compared to something like a triangle or cymbal, and focuses on repetitive, driving motives that grow, unfold, and break apart as the piece develops. This is not to say that the wide array of available percussion sounds did not interest him, as he composed many other types of work for percussion in the future.

Maki Ishii was known for being a composer who could utilize the traditional elements of Japanese music, with instruments like the shakuhachi and ryuteki flute, while also being comfortable composing and conducting for orchestras, as he did for many years throughout Europe. It is worth noting that while Ishii utilizes both of these realms of music in his writing, he manages to successfully fuse the two worlds together in an almost effortless way, where many composers have failed. A common problem in any type of “fusion” of cultures and styles, whether it be in food, music, or something else, is in the way that one or the other can become too transparent or used only at face

value, and not truly incorporated into the final product in a holistic way. I find the music of Maki Ishii to be refreshing, influenced by so many ideas, yet expertly synthesized into something original and lasting.

Chapter 2

Second Dissertation Recital Program Notes

Colin McCall, Percussion

Monday, January 27, 2020
Moore Building, Britton Recital Hall
8:00 PM

Meadowlark (2014-2016)

All Nature Neglects
Lets a Curl Entangle
Tall Elegance Turns

Tawnie Olson (b.1974)

Unveiled Future (2018)

Wan Heo (b.1992)

Wind - Rose - Wood - Cuts (2003-2009)

Juhasz Balazs (b.1980)

Quartet (2013)

Steve Reich (b.1936)

Melissa Coppola & Alissa Freeman, *piano*
Clark Hubbard, *vibraphone*

Second Dissertation Recital Program Notes

In this second recital, I aim to express my commitment to the development of new music, and my love for the collaboration which is possible between living performers and composers. I draw a lot of joy from playing new music and working with composers who I believe in. For this program, I chose pieces which I have not had the opportunity to play yet, some I only recently discovered and others have been wanting to play for a while. Wan Heo's piece grew out of a friendship made over the summer and which I hope grows into meaningful collaborations in the future. I think this recital also nicely frames my first recital in regards to the way the role of percussion and language of our music has developed from Cage's landmark quartet in 1936, to the quartet of Steve Reich from 2013.

Tawnie Olson's *Meadowlark* is not the first piece to explore birdsong as an inspiration for musical exploration and composition, but it certainly stands out as a noteworthy entry. Olivier Messiaen famously employed bird calls in many of his works, often in raucous cacophony, fighting to be heard amongst one another, while composer Ottorino Respighi even utilized a phonograph recording of nightingales in the third movement of his 1924 symphonic poem *Pini di Roma*. John Luther Adams' *songbirdsongs* replicates and intensifies the musical characteristics of many species of birds and their environments through the use of flutes and percussion. In Tawnie Olson's piece, we experience a collage of many of these techniques, the most unique being her transformation of the bird calls through stretching their length until they melt into abstractions of the original content.

Olson describes the way she built the composition, saying:

“The structure of the piece is rooted in the meadowlark's song; the fixed media in the first movement is derived from a two-second birdsong recording, which I stretched out to last over four and a half minutes and processed slightly. The marimba music is also drawn from that slowed-down song. It calls for very virtuosic playing; the percussionist must perform diminuendi with one hand and crescendi with the other in a kind of transcription of the slowly shifting, overlapping pitches of the original birdsong. The second and third movements of the piece use transcriptions and transformations of a meadowlark recording made by Geoffrey A. Keller. The second movement also uses a recording of peepers and bullfrogs made by Chad Stayrook at i-Park.”

The first and third movements of *Meadowlark* present several challenges, as Olson mentions, the most taxing being the sustained intensity and speed of alternating notes, while also controlling diverging dynamics in each hand. My goal with this performance is to highlight the way we hear and digest the sounds around us, which I am attempting to amplify with subdued, immersive lighting.

Inspired by her readings from the book *Sapiens: A Brief History of Humankind* by Yuval Noah Harari, Wan Heo composed *Unveiled Future* as a musical depiction of duality, optimism, and inevitability. Heo writes about the impact the book had on her thinking, summarizing:

“While describing important revolutions which made current humankind and the world, the author points out that humans never could predict the exact result of those revolutions (for example, agricultural revolution led to population explosions and forced humans work harder than they were foragers and the invention of home appliances made the world going faster so that people should do more work in the same amount of time.) At the last chapter, the author talks about scientific revolution, especially about genetic engineering. He argues even though no one can predict all possible results of consistent development of genetic engineering, humans will never stop. Through *Unveiled Future*, I aim to depict our desire towards a better future, that we always hope to be more developed and constantly progress to another significant revolution. In the contrasting part, I tried to express the negative effects, damage, and questions from the other side. The parts are alternated, but each part is modified as the piece gets to the end and finally, both parts are combined into one. The overall structure of the piece reflects my personal question around this consistent development, hoping to become a part of a desirable and peaceful world.”

To speak more on the musical demands contained in the composition: Heo asks the performer to create a vast array of sounds and colors using a limited amount of instruments (the setup consisting of a bass drum, bongos, metal pipes, a cymbal, and a crotale). She utilizes an assortment of implements beyond normal mallets towards this end, including metal brushes, double-bass bows, and what we in the percussive community refer to as a “super ball mallet,” or a child’s bouncy ball on the end of a

flexible stick. Choreography and sensitivity to sound become crucial elements for the performer to consider in interpreting a piece like this, one which should feel and sound improvisatory despite the precise notations used in the score.

My choice of this piece was guided by my primary goal in music, which is to work with composers towards expanding the repertoire for percussion. I want to establish connections with the composers whose music I perform, and this has led to an exciting collaboration between Wan and I. We will be working together on another multi-percussion solo work to be composed over the summer of 2020, and will be a meld of our personalities and values as performers and composers.

Wind - Rose - Wood - Cuts was born out of Hungarian composer Juhasz Balázs' mission to promote the marimba as a solo concert instrument. Inspired by Gyorgy Ligeti's *Piano Etudes*, the nine-movement work explores a variety of musical ideas, each portion dealing with a particular technique, sound concept, or characterization. The first movement, *Initial*, sets a simple harmonic and melodic groundwork for the rest of the work to play around with, or completely diverge from in some cases. Many of the movements draw inspiration from the connection between literature, art, and music, most strongly felt in the contemplative eighth movement, inspired by the evocative "Pilgrimage to the Cedars in Lebanon" of painter Tivadar Csontváry Kosztka. Each movement of this solo challenges the performer in a particular way, whether it be lightning fast moto perpetuo in *Lizard*, a continuous stream of wide, fast movements like in *Fan*, or delicate pacing and control in *A Cedar from Lebanon*. I was drawn to this music because of its unique colors and characterizations, and have found it to be an exciting challenge to learn. Each movement gave me a new style and feel to develop in

my playing. While I did not approach the piece this way for this recital, I see this piece as an excellent opportunity to segment sets or individual movements through the space of a recital, interwoven between other pieces and acting as a sort of musical throughline for the listener.

This performance will feature five of the nine movements, as highlighted:

Initial

Lizard

Fan

Windharp

Calligraphy

House of Cards

Glass Marbles

A Cedar from Lebanon

Riding the Tiger

Quartet undulates, surfs, and transforms unlike any other piece in the vast compositional output of Steve Reich. His music famously sits with one idea for extended periods of time (as in his *Clapping Music* or *Piano Phase*), the principal goal being that the listener can hear and understand, maybe even “see” the compositional process unfold in front of them. While this model is not necessarily the case for every single piece he has written, *Quartet* marks a significant shift in Reich’s approach, especially in the way it changes harmonic centers on a regular basis and puts the listener in a state of rapid engagement. Reich writes, regarding this change in style:

“The piece is one of the more complex I have composed. It frequently changes key and often breaks off continuity to pause or take up new material. Though the parts are not unduly difficult, it calls for a high level of ensemble virtuosity.

The form is one familiar throughout history: fast, slow, fast, played without pause. The slow movement introduces harmonies not usually found in my music.”

Worth mentioning, beyond this new harmonic complexity, is the development and restatement of ideas and themes which takes place, especially in the first movement. This movement is tied together by a rising motive first heard at the outset of the piece, later returning in an altered rhythmic form, even noticeably influencing the material in between these structural points. This sort of thematic development is atypical for Reich, and perhaps hints at a new direction in his composing, even drawing on older models of theme, development, and restatement which we are all too familiar with from the music of Mozart, Beethoven, Schumann, etc.

Chapter 3

Third Dissertation Lecture Recital

Exploring and Understanding Stockhausen's *Kontakte*

Karlheinz Stockhausen is widely regarded as a pioneer in contemporary classical composition. His works span a vast creative breadth of ideas, drawing on and expanding serial composition, and revolutionizing techniques in electronic music. One of the foundational goals of Stockhausen's musical career was surrounding the idea of spatial musical experience, he believed that directionality and our physical relationship to sound was as important an element in musical composition as, say, harmony and melody. He sought out numerous projects like this, including an installation entitled *Expo* for the 1970 World Fair in Osaka, Japan. This piece was fascinating. It called for a vast array of speakers set within a two story sphere, which Stockhausen had constructed specifically for the 187 day event. And every day, three performers went in, equipped with shortwave radios, to play an improvised concert, in which the composer could sit at a soundboard and manipulate where each sound was coming from in the room, whether it be up, down, left, right. He had complete control of every angle.

In tandem with his theories of space and directionality, Stockhausen sought to explore the way music and sound affect us on a physical level. In a lecture from 1970 regarding electronic music, he discussed how a pitch starting very high and descending

rapidly and loudly makes us feel a sort of indescribable dropping sensation in our stomach. Of course this is a subjective feeling, but it is not unfounded. Stockhausen was intent on playing with this idea and finding increasingly unique ways to present it to listeners. An earlier piece of his, *Gesang der Junglinge*, or song of the youth, took the voice of a boy soprano and interlaced and added on top a variety of electronic sounds.

This piece is an early example of him exploring the bounds of his style, incorporating electronic music and *musique concrete*, a french style of composition centered around the manipulation of recordings of acoustic music. Here he takes the vowels and consonants of the voice, and pairs them with electronic noises - sine tones, pulses, white noise. Thus began an exploration of the way sound is constructed and the ways in which we can connect acoustic and electronic music together. Which brings us to the focus of this video, *Kontakte*.

Composed and realized between 1959-1960, *Kontakte* (english: *Contacts*) is a remarkable achievement. The work was first conceived as a 35 minute electronic track which the composer created using an array of state of the art recording and broadcasting equipment in the Westdeutscher Rundfunk radio station in Cologne, Germany. He wanted to add percussion and piano to this music, and initially designed for each performance to be improvised. However, this didn't quite pan out, since that would require such a deep and intimate knowledge of the electronic track, that the performers were unable to produce the results Stockhausen was hoping for in a timely manner. The composer was certainly more than familiar with the track and also what he hoped to gain from adding live performers, so he proceeded to notate the two parts himself. This was certainly an important decision, because I don't think the piece would

have survived the way it has, were every performer tasked with both learning the track and deciding how to play with it. Let's take a brief look at the score and hear some of the music from the beginning of the piece.

The players primarily reside in their own stations, surrounded by instruments, the pianist also being tasked with playing a number of percussion instruments. Obviously it is not a given that all pianists are comfortable, so we had a good number of video calls where I helped Hikari to understand grip, stroke, and playing areas. I'm so grateful Stockhausen did not ask me to play piano on this piece...that would have been a nightmare.

Here is a photo which accompanies the score, showing the setup each player used for the first performance in 1960. And here is the last photo I could take of my setup before we were sent off to our quarantine lives!

As you can see, there are a number of percussion instruments needed for this piece, and a whole bevy of mallets as well. The composer asks for many different mallet choices, altering the sound quality or timbre often, sometimes even for each note in a sequence. This adds a level of physical difficulty to learning the piece, and caused me to spend a lot of time practicing the choreography of retrieving and depositing mallets as I play, which I will talk about more in a little bit.

A performance of *Kontakte* requires at least four speakers setup in corners of the room, from which the electronic music emanates. Stockhausen split the music into four distinct tracks, which are assigned to each speaker in a very deliberate manner, utilizing the spatial element to its fullest extent. Sometimes the sounds whirl around rapidly in circles, making the audience feel like they're completely absorbed in a musical

environment rather than viewing a performance from a distance as we often do in concert halls. The performers are placed in a generally normal configuration in the front of the room, this primarily being in service of the directional sound of the piano. I'm sure Stockhausen would have loved if the performers could actively be spinning around the audience as well during but as he has pointed out...(cue video quote from lecture by Stockhausen)

From this perspective, the audience is exposed to 35 minutes of highs and lows: overwhelming intensity, delicate subtlety, overall a remarkable and unforgettable musical experience.

NOTATION

Stockhausen was meticulous in so many aspects of composition and music, and this certainly did not change when it came to creating his scores. The notation for Kontakte is unique in the way it lies somewhere between graphical and traditional. Each note is carefully placed in the timeline, underneath his stunningly accurate realization of the electronics, which is an artwork in itself. So as you can see from this example,

The percussion instrument choices are indicated by shapes which generally resemble their shape, which I appreciate as someone tackling a large amount of instruments at once. That said, it is a bit challenging relearning how to read the setup for each individual page, because often the way the parts are organized vertically is not always consistent. Sometimes you'll be looking at the top of the percussion part and see *almglocken*, but other times it will be something else entirely. This saves space on the

page by removing dead space, but sometimes makes it confusing to settle all the instruments needed for a given page.

Percussion notation has taken many different forms throughout the last century, and I want to show you a few examples of how this form??? has been approached throughout history. You can see: Morton Feldman's *King of Denmark*, Stockhausen's solo percussion work *Zyklus Nr. 9*, Maki Ishii's *Thirteen Drums*, and John Cage's *Quartet*.

Each score offers a different approach between maximal and minimal amounts of notation. Cage's *Quartet* keeps each player on only one line, while *King of Denmark* uses shapes and unique markings to indicate what kind of sound should be produced. *Thirteen Drums* and *Zyklus* show you a lot more information (and sometimes emptiness) at all times and consequently have a much steeper learning curve for the performer. The lack of agreement between composers on the best form of notation for percussion music has formed into a hallmark of our musical identity. We are the ones who are constantly asked to rethink and relearn the way we read our music, so naturally we have become the ones who are asked to do everything under the sun by composers. At this point I welcome the challenge.

At the top of the *Kontakte* score is a realization of the electronic track, and here is an excerpt in action, from an early part of the piece.

While the drawings might seem kind of confusing at first, Stockhausen laid out fairly specific graphical parameters within which he notated the sounds. Here is a graph detailing a few of the types of shapes and patterns we see in the score. You can see here: Continuous rotating sounds within pitch ambit, with no attack or decay audible (0'15")

Short imitative percussion sounds (bongos, marimba, cymbals, even piano): their position on the score indicates approximate pitch (12'21")

Vowel or consonant human voice fragments linked by filter sweeps (1'02")

Long heavy noise - cymbal.tam-tam (2'21")

Heavy white noise sounds where attack and decay are much varied (4'15")

High or low trill elements (21'57")

Enclosed but transforming sound elements - with constant inner change, written as Swoops (33'19") and squares (20'13")

The sounds are certainly synthesized, and I don't think Stockhausen was trying to hide that per se. A common goal with electronic music in the present time is towards making sounds appear to be natural, from live performers with acoustic instruments. Consider movie scores and lots of commercial music which aims to bring in the sound of an entire orchestra without needing to hire 80 plus musicians. Stockhausen took what he had at the time, and explored every minutiae within that world.

LEARNING THE PIECE

Okay I'm sure you're asking yourself, how on earth do you learn to play along with this music? As musicians we are generally trained to play things in time, within some sort of rhythmical framework, but that isn't really present in this piece, and when it is, it's really more of an approximation of the rhythms. Instead, the learning process for Kontakte is focused around repetition, repetition, repetition, until we just have an innate understanding of "how it goes". It's a bit like learning from rote, but at least in

this case we have an immaculate score to use as a visual guide. Once we have an understanding of the electronic track, then we can begin to introduce our own part, and begin to understand how everything can fit together.

A great joy for me is the freedom with which the notation allows me to choose how and where I interact with the sounds coming around me. I can rely on my ears to guide my choice of the proper implement, playing area and type of stroke for every single note in the piece. With each choice of mallet and color comes another difficulty: how and when do I get these mallets in my hands? Much of my practice revolved around the choreography of picking up and putting down mallets in between gestures. Sometimes those pauses were long, and sometimes they were very brief. Stockhausen asks for so many different sounds that I have to make compromises somewhere. I can only hold so many mallets in my hand at once, but I definitely explored what was feasible!

Take a look at this example in which I am simply playing a gong, but for almost every note the composer requests a different type of sound, mallet, or playing area. Or consider this part where I am playing many different instruments made of different materials, and aiming for some kind of unified clarity between them all.

Or take a look at this... actually, maybe we'll not try to process all that information right now. Let's just say that you can see how some of the requests in here are a bit out of the scope of physical possibility.

Stockhausen utilized percussion in many of his works, most notably *Zyklus Nr. 9*, which you saw earlier, and in pieces like *Kreuzspiel*, *Mikrophonie*, and *Schlagtrio*. I

think what he saw in percussion, especially based on the way he utilized it in all these pieces, is the wide array of easily accessible and changeable timbres. Mikrophonie revolves around a single gong, but manages to explore a large amount of different sounds and colors by the use of multiple implements, striking areas, and spatial microphone placement. You can see how this carried over from his work on Kontakte, where he began to fully realize the potential of percussion towards achieving this timbral volatility.

Rehearsing this piece was a fun but tiring challenge, even from the little I was able to do prior to the closing of the music building. It was an exploratory experience which we had to go through together, despite having a certain comfort with the material beforehand on an individual level. The shared experience of putting the piece together and deciding how and when to line up our parts was necessary, as we can't simply go on autopilot and perform our individual interpretations with the electronic track. One tool we began using as we planned for performing the piece was a click track which only the performers would hear in headphones, helping us to align moments, especially where there is a large amount of silence preceding an entrance. This was helpful in aligning our performance with the fixed track. We must find a unified approach and then decide in each moment who will lead cues and how best to convey our placement and sound concepts to one another, and ultimately to the audience.

SOUND CONCEPTS

One of the most fascinating aspects of Stockhausen's theoretical thinking is his exploration of the relationship between rhythm and pitch. In Kontakte, around the 17

minute mark, the composer includes a particularly clear example of these relationships he is exploring throughout much of the piece. In this moment, he shows how sound can affect us physically, with this great, intense drop in pitch, followed by an illustration of how pitch and rhythm can morph into one another when stretched or shrunk. As a personal aside, this moment, among others, is what caused me to want to play this piece when I first heard it nine years ago. The piece really shocked me and changed my perspective on what is possible with a piece of music, which is what drew me to programming this for my final dissertation recital.

In this musical example, he lays out a tenet which guides much of the construction and development of sound in *Kontakte*. That is, pitch and rhythm are one in the same when given full control of all sound parameters. If you take a short rhythm, then repeat it, and you are able to speed up this rhythm greatly without affecting the pitch of the sound, you create a unique pitch and timbre from this. As we have experienced when dealing with electronic sound manipulation, typically speeding up a sound raises the pitch, and slowing it makes it lower, but when you are able to manipulate these characteristics of speed and pitch independently, you can simply compress or expand a sound byte and it gains a new quality entirely. This is the technique Stockhausen used to create many of the sounds in the piece. Some sounds are even extreme compressions, sometimes taking a lengthy passage, maybe a minute or two minutes long, and compressing it down into 1 second to create something like this. All of that sound suddenly becomes something new, completely divorced from the original material.

Now that we're discussing the musical techniques Stockhausen used in his music, let's see how he actually created all those sounds. As I mentioned previously, he realized all of the electronic music for Kontakte at the West German Broadcasting electronic music studio in Cologne, Germany, with the assistance of fellow composer Gottfried Michael Koenig.

Here are some examples of the kinds of equipment he was using in the studio:

- Octave Bandwidth filters - acting generally as a device for frequency equalization
- Sine/Square wave generators - which simply create sine or square soundwaves, which you can later manipulate.
- Beat frequency oscillators & Pulse generators - which are used to create noise pulses, of which you can control the speeds and durations.
- Tape loops - this is one of the most important tools which Stockhausen used for creating sound which he could then alter the length of.
- Tunable frequency amplifiers & Bandpass filters - for limiting the range of frequencies around any given sound.
- Sine wave sweep generators - these are super fun, and allow you to create moving pitches like this:

The moment I just mentioned in the middle of the piece, utilizes the process of taking a recording of a sound, I believe in this case starting with a nearly unpitched blip, then stretching it out until it creates a sustained tone.

A video by youtuber HAINBACH gives us a fascinating glimpse into one of these tools - the tunable indicating amplifier. This device primarily allows for the manipulation of pitch and overtones, the latter being an important tool for altering timbre.

To put this into context, with modern day DAW's (or digital audio workstations) like ProTools or Logic, this is simply a small component built into the system, requiring only a few button presses and you're off. Here Stockhausen is working with machines which require live input, turning knobs and adjusting many different devices, which can then be recorded onto tape loops and further manipulated after the fact. In a way, you're actually hearing Stockhausen physically performing most of the sounds you hear in *Kontakte*, turning knobs and switches while the tapes run and capture what he is creating in real time.

A crucial aspect to the structure of this composition is that this is an example of total serialism. Serial music takes parameters, perhaps a row of 12 unique chromatic tones such as in the music of Arnold Schoenberg, and uses processes and methods of organization to create a musical composition by reordering in numerous creative ways. One of Stockhausen's goals was to reach a form of total serialism, where he was able to bring all the aspects of music (timbre, pitch, intensity, and duration) under one control.

You can see from his sketches of the piece, that his process and organization were paramount, deciding nearly every aspect of the composition beforehand, and in some ways likely helped make the actual realization of the music quite simple, especially once he knew how to produce the results through the technology he had in front of him. You could liken it to writing out by hand the most detailed outline for a paper possible, then you only have to go and type it up on your computer. With all that information in hand, let's listen to a small segment of the electronic piece, which I think highlights the use of a lot of these techniques and tools.

So clearly this piece was originally imagined as electronic music, and does exist that way independently, so why did Stockhausen want to add live musicians to the piece, and what does that add? From my perspective, Stockhausen seems curious about how much he could blur the line between live and electronic sounds. He even goes so far as to equate many of his sounds to percussion instruments in the breakdown of electronic notation which we saw earlier. I think this is mostly successful, with there being moments where it becomes hard to tell the source of any given sound. But I think even more successful is the idea of contacts, the namesake of the piece. This idea of creating points of contact, or moments when the timbres and synchronization of the music align, but also more abstractly that we are making physical contact between electronic and acoustic sound. Since Stockhausen posits that music and sound are physical things which affect us in real ways, everything floating around our heads and bodies is making contact with one another and with both the audience and performers.

There is also a particular focus for the listener which is gained by having live musicians performing. The piece becomes much more of a meditative ritual, a set of prescribed motions and actions, than a standard listening experience. Once you add the two performers up in front, the piece enters into new territory of dramatic performance, with a deeper level of aural and visual engagement than when simply listening to the electronic piece alone. Even cooler is the experience of being inside the piece, so to speak. As a performer I feel like I'm interacting with this musical object which, while essentially set in place, feels alive and improvisatory when the music is comfortable in my hands and I can resort to my primary function being listening over

executing a task. So there is also this sense of contact which comes from the performer playing and interacting with a sort of ghost musician, in this case I suppose that would be the ghost of Stockhausen.

An example of this in action is one of my favorite moments in the whole piece, where it becomes a marimba and electronics duet, and the lines begin to blur between acoustic and electronic sound, and also the feeling as a performer in this part is one of fun and improvisatory interaction.

It is interesting to consider that Stockhausen, having developed this hyper-controlled form of composing, chose to take a step away from that and have the performers improvise along with the piece. I guess it should be no surprise that he was not satisfied with this result, and wrote out the parts as he imagined them. This brings me to what I see as the core element of this piece which makes it so interesting to me, the juxtaposition of freedom and control. The electronic music is fixed in place, while the performers can move freely around within that, making decisions about when and where they want to place the music. This piece is chamber music of a particular variety, one where two players are working to play together, while also aiming to fit into a completely static music which will happily move on without us.

These aspects, tied together with the powerful spatial experience, made a lasting impression on me as a young college student, and opened up my ears to a new type of listening. Now that I have had the experience of at least beginning to dive into this piece, I am so excited to continue work on it, and hope to schedule many performances in the future.

I so appreciate you taking the time to watch this video, and I hope that you have begun to understand the importance Kontakte holds in the history of percussion, electronics, and musical discourse. The impact it has had on me is immense and unforgettable both as a performer and listener, and I hope we can all sit in a room sometime soon and experience this brilliant, shocking music together.

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Karlheinz Stockhausen (1922-2007) Zyklus / Kontakte / Klavierstücke V & IX

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