

Percussion Ensemble Performance Practices and Instrumentation Changes:

Comparing New to Old

by

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## ABSTRACT

The percussion ensemble pieces of the 1930s and 1940s have many performance practice and instrumental selection considerations when performed in the modern day. The four pieces of music under consideration for this study are *Ionisation* (1933) by Edgard Varèse, *Ostinato Pianissimo* (1934) by Henry Cowell, *First Construction (In Metal)* (1939), and *Third Construction* (1941), both by John Cage. These works have stood the test of time, and are still an important part of today's percussive literature. As with many historical works, issues such as interpretation and instrument selection arise when performed in the twenty first century. This project aims to provide general considerations and specific solutions when preparing these works for performance. The research conducted in this paper will help percussionists and musicologists alike further understand how to properly replicate the early percussion ensemble music, if the performers objectives are to emulate the composers' original intentions.

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# Chapter 1

## Introduction

The goal of this document is to examine how performance practice and instrumentation have changed in the playing of 1930s and 1940s percussion ensemble pieces. This is important work, because it will act as a preservation of history for performers and audiences of early percussion repertoire. This document can also be beneficial to anyone studying “original intent” in classical and contemporary music, in addition to anyone researching performance practice or historical accuracy in music. Original intent here is described as using the exact instruments the composers intended in the way they intended them at the time of composition. Percussion instruments design and construction has changed significantly since the early twentieth century. Many modern percussionists are not aware of the acoustic differences. My research into the history of both Western and Non-Western percussion instruments in America, and the pieces by John Cage, Henry Cowell, and Edgard Varèse, coupled with the experiences of others, will facilitate a discussion about how these pieces were played when they were first written.

This research also examines the performances of *Ionisation* (1933) by Edgard Varèse, *First Construction* (1939) *Third Construction* (1941) by John Cage, and *Ostinato Pianissimo* (1934) by Henry Cowell, in a modern context to provide a better understanding of the changes in instrumentation and performance practice over time. These composers and pieces have been chosen because they have stood the test of time, since they are all still played often by both academic and professional touring and

recording percussion ensembles. Additionally, the pieces listed above use instruments that are either considered “unusual” or contain instruments that have changed drastically since the time they were originally written. Accounts will be given from both the early-mid twentieth century to present day, since historical accuracy will be an important research objective, especially through instrument selection and nuances in the form of dynamics, tempos, accents, and more.

Performance practice vis a vis historical accuracy can be a troubling topic to pinpoint as Richard Taruskin says, “we just assume recreating an original performance through external conditions, recreates the composer’s experience.”<sup>1</sup> I agree with him on the point of assumption, as many composers enjoy their pieces being played in a variety of ways, or possibly even with different instruments depending on the circumstances of the performance. Nonetheless, because of the dramatic changes in percussion instrument construction, and the nature of using “non-musical” objects, or found instruments, having a sense of the sound and feel of original instruments is a valuable tool for contemporary performers, regardless of whether they decide to use original instruments or not. Staying informed of historical performance practice is also helpful for any musician wanting to make educated musical decisions. Performers who instinctively choose modern instruments and employ modern performance practices in presenting historical works often detract from the composer’s original intent. However, following the original intent in every conceivable instance is but one way to interpret a piece. It is pertinent to conduct extensive research into the piece one is playing, especially if the composer is not alive to

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<sup>1</sup> Richard Taruskin, *Text and Act: Essays on Music and Performance* (Oxford University Press, 1995) p. 55.



ask them specific questions about the work. This is important if the performer wants to be informed about historical performance practice. As this paper will discuss, the reproduction of sounds and timbres is important when maintain historical accuracy and requires careful thought and analysis into the percussion ensemble pieces, and performances of the 1930s and 1940s. Many of these early percussion ensemble pieces rely on the use of found instruments, or instruments whose primary purpose is not music-making. Replicating the exact timbre a composer had in mind is difficult. These “unusual” instrument examples and more will be detailed throughout the document, providing both historic and modern thoughts on how the pieces might be performed.

The examples for instruments and performance practice will be examined not only through various scholarly readings detailing the historical facts of the instruments used in the pieces in this document, but also through supplemental material such as recordings made by myself, academic and professional percussion ensemble recordings, and interviews conducted with experienced percussionists. The audio recordings will provide some side-by-side comparisons of instruments from the early twentieth century next to modern instruments. The author utilizes different mallets and playing zones of every instrument from both time periods to make sure there is ample data for proper collation. This technique will provide insight into the timbral differences we experience simply from the different manufacturing of instruments like tom-toms, brake drums, and cymbals in today’s percussive world. Each audio sample is recorded as consistently as possible with the microphone placed 6 feet away and no extra effects or mastering being added to any of the recordings.

Likewise, the interviews will offer insight from musicians who interacted directly with some of the early percussion ensemble composers, plus give a better understanding into instrument and performance practice decisions for today's ensembles. In the assembly of instrument selection and performance practice topics, I consulted percussionists who are considered experts in these subjects by the percussion community. The interviewees have worked with some of these early composers, and have put a lot of time and effort into instrument selection and performance practice considerations. These great percussionists include Allen Otte, co-founder of Blackearth Percussion Group and Percussion Group Cincinnati and Chris Shultis, Distinguished Professor Emeritus at the University of New Mexico. Allen Otte has worked directly with John Cage, and has directed his pieces many times, so his candid reports of these interactions are integral to the bulk of the research. Chris Shultis has written a particularly important document as part of the book *John Cage: Music, Philosophy, and Intention* by David Patterson, dealing with instruments and performance practice in the context of Cage's works, so this interview was helpful for instrumental considerations. Additionally, it is beneficial to listen to many recordings from the 1930s to the present day, to hear how the pieces were played at that time. Some pieces, like *Ionisation*, have recordings from the 1930s, while others, like many by John Cage, do not have recordings until the early 1950s. Listening to recordings from these different time periods also helps determine a sense of timbre and even the exact instruments used in some cases. It is important to note however, that there is some distortion of timbre in the oldest recordings, due to the technology audio engineers had at the time. Throughout the rest of this paper, I will be detailing the

changes in the instruments and performance practice pertinent to the early percussion ensemble literature.

## **Chapter 2**

### **History of Instruments in Percussion Ensemble Works of the 1930s and 1940s**

This section will focus on how the construction and performance practice of Western and non-Western percussion instruments changed over time. Comparing the instruments used in early percussion ensemble works with modern performances and existing instruments shows us how the instruments have changed. These changes can impact contemporary performance practice. The physical differences in the instruments can cause problems when selecting sounds and timbres for the early percussion ensemble pieces today. Sometimes, instruments asked for in the 1930s and 1940s are difficult to acquire, such as Chinese tom-toms and 1930s vintage automobile brake drums. Studying the cultural history of the instruments and how they are used in the works which are being examined will provide great insight into the changes in performance throughout the twentieth century.

#### **Availability of Instruments**

The general availability of percussion instruments, especially the “exotic” ones, was much lower in the early and mid-twentieth century than it is today, attributable mainly to the fact that domestic manufacturing was almost non-existent. Exotic in this context is what composers like Cage and Cowell called many of the non-Western percussion instruments they wrote for in the 1930s and 1940s. This document will

explore why there was a need to mass produce instruments and how it happened over time. Meanwhile, some instruments common in the scores for this study are not nearly as common today. It is clear that instrument availability has direct effects on the overall sound of a percussion ensemble, especially when trying to be musically accurate to the time period in which the pieces were written.

Lack of availability was not limited simply to experimental music. In their article “A Historical View of Iannis Xenakis’s ‘Psappha’ Instrumentation,” Tom De Cock and Simon Florin state how even up until the 1970s it was rare for most practicing percussionists to have access to things like a nice set of bongos or even a concert bass drum.<sup>2</sup> This often forced performers to find substitutes to many instruments written for in the 1930s and 1940s, which required a knowledge of the timbres asked for by composers like Cage, Cowell, and Varèse.

The composers within this study were also performers and conductors out of necessity in order to get their music performed. As such, they needed to acquire their own instruments to compose and perform their pieces. This is evident in Cage, Cowell, and other early percussion composers drawing inspiration from non-Western instruments. For example, Henry Cowell, a famed percussion composer of the 1930s, wanted to add instruments to his pieces after researching world music and hearing

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<sup>2</sup> Tom De Cock and Simon Florin, “A Historical View of Iannis Xenakis’s “Psappha” Instrumentation,” *Percussive Notes* Vol. 55, No. 2 (2017): p. 46, <http://publications.pas.org/archive/May2017/1705.46-49.pdf>.

certain drums, specifically following his study of African Pygmy music in Germany.<sup>3</sup> Because many percussion instruments that inspired these composers were relatively rare, it was common to have foreign instruments, like the drums Cowell was studying, imported at a hefty price, or to get fellow composers and performers to replicate the rarer instruments, sometimes with underwhelming accuracy. Another example is John Cage's acquisition of Native American and Latin American instruments from his work with dance companies that had access to various rattles and drums, especially in the Pacific northwest.<sup>4</sup> Cage had much more success in obtaining the exact instruments than some of his contemporaries.

Though common today, many percussion instruments were considered "exotic" in the 1930s and 1940s. Under the umbrella of "exotic" instruments, composers in the early-mid twentieth century started to use bongos, maracas, claves, and more. The "exotic" category of percussion, or simply non-Western percussion, is important to study if one is aiming for historical accuracy in the early percussion pieces because there was a large boom in the use of Latin American, West African, and Asian instruments from composers like Cowell, Varèse, and Cage. Many instruments fall under this category and the composers of the 1930s and 1940s usually used the term "exotic" when referring to non-Western percussion in general. Varèse has been noted calling the non-Western

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<sup>3</sup> Leta E. Miller, "Henry Cowell and John Cage: Intersections and Influences, 1933-1941," *Journal of the American Musicological Society* Vol. 59, No. 1 (2006): p. 55, <https://doi-org.ezproxy1.lib.asu.edu/10.1525/jams.2006.59.1.47>.

<sup>4</sup> Allen Otte, interview with the author, 2021.

instruments “very unusual” when writing for them in the 1930s.<sup>5</sup> Varèse’s use of “very unusual” in this context most likely refers to their general sense of exoticism and availability. The widely referenced 1923 pedagogy book *The Straight System of Modern Drumming*, which provides nascent percussionists with professional solutions to what we can assume is a comprehensive set of musical situations, includes no mention of the instruments discussed.<sup>6</sup> This book can provide us with a view into the most common instruments of the time, and give reason for why some of the 1930s and 1940s composers would have called certain instruments “unusual” or “obscure.”

Chris Shultis told me that he was aware of composers like Cowell and Varèse were taking trips to Cuba and talking to Latin American composers, like Amadeo Roldan, who were subsequently being influenced by the music and instruments they were hearing in Latin America.<sup>7</sup> The availability of these instruments has greatly increased the ease of playing many of the early percussion pieces, since there is no longer a need to import them thanks to modern instrument manufacturers like LP, or Latin Percussion. At the time, many of the Latin instruments had to be imported from their country of origin, making the process difficult and quite expensive. LP specifically was formed out of necessity after the United States’ trade embargo on Cuba in the late 1950s forced its founder Martin Cohen to build his own high-quality bongos.<sup>8</sup>

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<sup>5</sup> Brian Holder, “Varèse’s Drum: The Tarole in ‘Ionisation’,” *Tempo* Vol. 67, No. 266 (2013): p. 67 <http://www.jstor.org/stable/43932537>.

<sup>6</sup> Edward B. Straight, *The Straight System of Modern Drumming*, (Chicago, Il.: Franks Drum Shop, 1923) p. 7.

<sup>7</sup> Chris Shultis, interview with the author, 2021.

<sup>8</sup> “About,” [lpmusic.com](https://www.lpmusic.com), accessed January 26, 2021, <https://www.lpmusic.com/about>

The formation of LP was integral in making Latin American instruments more readily available in the U.S., but it was not a perfect process at first. Even until the mid-1970s, the heads that were installed on many of the Latin American drums were not strong enough to endure tuning even slightly higher than normal.<sup>9</sup> Access to plastic heads was welcomed later on in the twentieth century, although the general timbral differences between these and animal skin heads led to more uncertainty in playing the parts of the 1930s and 1940s, which is discussed in greater detail later in this paper.

Contrary to most of the other instruments considered “exotic” by percussionists of the 1930s and 1940s, Chinese tom-toms, also called paigu drums or tack headed toms, were quite common for percussionists of the time, especially on drum sets. These drums were shorter than today’s double-headed tom-toms and the animal skin heads were tacked onto the shell, instead of held on by a metal hoop with screws, as is the case today.

These tack drums would have been the instruments performers used when composers such as Cage called for “tom-toms” in the 1930s and 1940s. In John Cage’s *Third Construction* (1941), the intended instruments are Chinese tom-toms, which were frequently used; however, the score simply states “drums,” so a deciding what instrument to use can be problematic.<sup>10</sup> In the mid twentieth century, single headed toms become the prevalent tom-tom sound, and many modern percussion ensembles commonly use a double headed tom with a plastic or synthetic drum head on it. This is a problem because

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<sup>9</sup> De Cock and Florin, “Historical View,” p. 46.

<sup>10</sup> Christopher Shultis, “No Ear for Music: Timbre in the Early Music of John Cage,” in *John Cage: Music, Philosophy, and Intention, 1933-1950*,” ed. David W. Patterson (New York: Rutledge Publishing, inc., 2002), p. 99.

the single headed toms have a much different sound than the tack headed drums, which have a more full and warm sound. If the performer of *Third Construction* is aiming for a historically informed performance, then the synthetic-headed toms would be problematic.

Many Asian instruments were of interest to Edgard Varèse and Henry Cowell by the time they began writing for percussion. The Jal Tarang for instance, is a traditional Indian instrument composed of porcelain or clay cups or bowls and struck with bamboo sticks. Cowell used the Jal Tarang in his landmark percussion work *Ostinato Pianissimo* (1934), where he states that the player can substitute other bowls if desired.<sup>11</sup> Replicating an exact instrumentation can prove difficult in this scenario, though the composer gives an acceptable substitute that can vary widely depending on the bowls the performer chooses.

Another subset of “exotic” instruments are Native American instruments, used by Cage in several of his works. In this context, “exotic” of course does not refer to something non-Western, but instead means an instrument that was unusual to composers of the time. Care should be taken when playing Native American instruments such as the Northwest Indian rattles and the teponaztli, or tongue drum. Shultis explained to the author that Northwest Indian rattles have fewer beads than maracas, which are a common substitute, and that the teponaztli often has a very specific interval of a second or minor third.<sup>12</sup> Maracas are still generally an acceptable substitute, but careful instrument selection is important for finding an instrument with minimal beads inside of it. A log

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<sup>11</sup> H. Wiley Hitchcock, “Henry Cowell’s ‘Ostinato Pianissimo’,” *The Musical Quarterly* Vol. 70, No. 1 (1984), p. 26, <https://www.jstor.org/stable/741922>.

<sup>12</sup> Chris Shultis, interview with the author, 2021.



drum is usually the substitute for the teponaztli for modern performance, but the performer should ensure the interval between beating spots is a second or minor third, so they may replicate the instruments closely.

In addition to the many different instrument manufacturing changes in both Western and non-Western percussion over the years that have made some instruments more or less available, there are certain other global events that impacted the way in which we use percussion instruments. According to Yang Hon-Lun, a professor of music at Hong Kong Baptist University “the New Culture Movement in 1919 helped open the doors to the sharing of musical knowledge in China, especially through the establishment of the National Conservatory of Music in Shanghai.”<sup>13</sup> This New Culture Movement is part of the reason that some of the Chinese instruments like the tack headed toms discussed above were more readily available by the 1930s and 1940s than the Latin American and West African instruments that composers like Cage and Cowell had to import or travel to obtain. In my interview with Allen Otte, he says that instruments that fit into the “exotic” category like the Chinese tom-toms, were increasingly hard to find between the 1940s and 1970s until trade opened between the US and China around 1972.<sup>14</sup> This is most likely due to the reduction of trade between countries after World War II.

The last important part of the changing history of instruments in percussion ensembles is the cost and accessibility over time, something that should be considered

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<sup>13</sup> Hon-Lun Yang, *China and the West: Music, Representation, and Reception*, (Ann Arbor: University of Michigan Press, 2017) p. 2, <https://www.jstor.org/stable/j.ctt1qv5n9n.4>.

<sup>14</sup> Allen Otte, interview with the author, 2021.

when picking instruments today. Many of the works in this study-in particular John Cage's music-use found instruments, sounds taken from everyday household objects. These instruments are affordable and mostly readily available which was important when trying to create obscure sounds of the time. The term "obscure" here is referring to the fact that many of the household items and found instruments had not been used in a musical sense before composers like Cage and Lou Harrison wrote for them. The "unusual" and "obscure" instruments, as Cowell and Cage often called them, like tin cans or brake drums, may have been widely available, but the nomenclature they used here comes more from the instruments lack of use before either of these composers time. In his *Imaginary Landscape No. 3* (1942), Cage chooses to write for five pitched tin cans, household items, that he states will gradually change with use, even though he was aiming for specific sounds associated with each found instrument.<sup>15</sup> This change in sound over time makes it difficult to choose instruments when trying to replicate original performances, but as he said, Cage knew the instruments would change sound anyway.

Household items provided many composers with the ease of writing for percussive sounds at a reduced cost and with great artistic freedom choose their own timbres. John Cage, among others, paved the way for future composers to explore percussion timbres in a new way by shifting his focus to the sounds and colors the instruments produced, and by utilizing percussion in a way it had never been utilized before.<sup>16</sup> Their artistic freedom did, however make it difficult for us to replicate exact

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<sup>15</sup> Larry Vanlandingham, "The Percussion Ensemble 1930-1945," *The Percussionist* Vol. X, No 1 (1971), p. 57.

<sup>16</sup> *Ibid*, p. 55.

timbres in today's ensembles because of the wide variety of sounds many of the found instruments produce. In addition to wide availability, cost was a significant factor in using found instruments, since having non-Western instruments shipped to the US was expensive and challenging before modern manufacturers made them domestically. It was also expensive to use animal skin heads on drums before the invention of the plastic drum heads in 1957 that performers commonly utilize today.

### Nomenclature

Aside from availability or lack thereof, other issues arise regarding nomenclature. As discussed earlier, composers such as Cage often indicate "tom toms" in their scores, a term percussionists of the 1930s and 1940s would most likely assume to be a Chinese tack drum, given their availability. Cage's use of Indigenous names for instruments has created issues regarding substitutions. In other cases, using regionalized terms for percussion instruments has created sonic issues over the intervening years. Cowell asks for a tambourine with "rattles" removed (Fig. 2.1), whereas many contemporary percussionists call them jingles. Nowhere is this difference in nomenclature more confounding than in the case of the tarole, a seemingly innocuous instrument choice in Varèse's *Ionisation*.

The tarole is a debated instrument among many percussionists because the score itself defines the tarole as a "flat military drum with snares," however, even at the time, many percussionists considered this a general, shallow drum of high pitch.<sup>17</sup> We can see

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<sup>17</sup> Holder, "Varèse's Drum, p. 66.

Varèse's notes on the instrument in Fig 1.1. Today, it is quite common to use a piccolo snare drum to replicate the timbre of a tarole, since it is close to the specified instrument in sound and construction. This can create some authenticity problems, since Varèse says "military drum", although this could be a byproduct of the time, using nomenclature popular in the early 1930s. The term "military drum" today is most often associated with an instrument that is much deeper and lower pitched than the one Varèse specified. The modern piccolo drum which does not exceed 3.5 inches in height, most closely resembles the high pitched instrument heard in a recording from 1933 on Symposium Records played by Nicholas Slominsky, who premiered the work originally.<sup>18</sup> In this recording, the tarole has a lot of snare response and sounds very brittle and thin, so a smaller modern drum tuned to similar characteristics would get the performer close to that timbre. Slominsky worked closely with some of the early percussion composers not only on performing their pieces, but on instrument selection as well. One of the main focuses of

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<sup>18</sup> Ibid, p. 66.

this paper is understanding the complexity of instrument selection from the 1930s and 1940s, to inform our decisions on this topic today.

### Nomenclature of instruments

1. Crash Cymbal – Bass Drum – (very deep) <sup>a)</sup> from 7 to 9 Cencerro (muffled) <sup>k)</sup>
2. Gong – Tam-tam (high) Tam-tam (low) <sup>b)</sup> from 7 to 9 Cencerro (muffled)
3. 2 Bongos <sup>c)</sup> – Side-Drum <sup>d)</sup> – 2 Bass Drums (medium size and large) laid flat
4. Tambour Militaire – Side-Drum
5. Siren (high) <sup>f)</sup> – String-drum <sup>e)</sup>
6. Siren (low) <sup>f)</sup> – Slapstick – Güiro <sup>g)</sup>
7. Chinese blocks (high, middle register, and low) – Claves <sup>h)</sup> – Triangle
8. Snare-drum (with snares relaxed) – Maracas <sup>i)</sup> (high and low)
9. Tarole <sup>j)</sup> – Snare-drum Suspended cymbal
10. Cymbals – Sleigh bells, and later Tubular Chimes
11. Güiro – Castagnettes, and later Glockenspiel a clavier (with resonators)
12. Tambourine Anvils (high and low), and later Grand Tam-tam (very deep)
13. Slapstick – Triangle – Sleigh-bells, and later Piano <sup>l)</sup>

a) A drumstick in each hand: at  $\boxed{13}$  change to light tam-tam instead of crash cymbals.

b) A drumstick in each hand; give very elastic strokes; even in the *ff* the combined weight of arm and stick are sufficient - do not kill the tone.

c) Bongos are West Indian twin drums with parchment heads. They may be played either with small wooden sticks, or with fingers.

d) Use, according to indications, the different kettle-drum sticks: (skin ordinary), wooden, felt, or sponge. For tarole, military-drum, snare-drum, or tenor drum, where the notation  $\frac{x}{x}$  occurs, play on the rim.

e) String-drum, also known under the name lion-roar, - a medium sized wooden barrel, with parchment head, through which a rosined string is drawn. The sound is produced by rubbing the string with a piece of cloth or leather.

f) Sirens: Sterling Type H (Part No.73 PU. PB.), operated by hand, with a button for instantaneous stopping, (thumb brake). If unobtainable, substitute Theremin's electric instruments, or any similar instruments (see special score). Mouth sirens not to be used.


g) Güiro, - a Cuban desiccated gourd, serrated on the surface to be scratched with a wooden stick.

h) Claves. - Cuban sticks of hardwood. In order to obtain desired sonority, one stick must be held loosely between the fingers with the palm of the hand curved to form a sort of sounding box, the other stick must strike rather lightly about the middle.

i) Maracas are Cuban rattles (best with ammunition inside the gourd).

j) Tarole is a flat military drum, with snares.

k) Cencerro - a cow bell with no clapper - fastened by the handle and struck with drum stick - muffle by sticking handkerchief in bell.

l) The symbol  indicates all chromatic intervals between the two notes and must be played simultaneously making use of the forearm. The chord is to be played without stiffness and without brutality.

between the two notes and must be played simultaneously making use of the forearm. The chord is to be played without stiffness and without brutality.

Fig. 1.1: Nomenclature of Instruments in *Ionisation*



## DIRECTIONS

This work may be played by eight percussion players; woodblocks, tambourine and guiro may be taken by one player. Only one professional player is needed; this is for the xylophone.

The form of the work is an ostinato passage which varies in length for each performer, and in accent for the repeats. The beginning of the repeat in each section is marked by a cross over the note in each part. The note on which the repeat begins should be marked by each instrument section as follows: St. Piano, first player, cluster as indicated. St. Piano, second player, cluster as indicated. Rice bowls, interval instead of single tone, as indicated. Woodblocks, interval as indicated. Bongos, interval as indicated. Drums, grace note as indicated. In the case of gongs, the player should tap the gong of the first repeated note with a small stick (not padded) at the same time as continuing to strike with the regular padded stick. This should be explained to the player. Most of the instruments announce the measure before the repeat by a tremolo.

The string piano part marked by letter (a) is played by the player damping the strings to be played at the dampers with his fingers, and playing the notes as written in the keyboard. Marked letter (b) the player damps the strings two octaves below where written, at one-fourth the length of the string (thus producing the fourth partial overtone) and playing the notes written on the keyboard. Marked letter (c) (as the second player's part) the strings are damped at the bridge, and the notes played on the keyboard as written.

The tambourine's metal rattles must be removed.

The eight rice bowls\* are to be arranged in order of pitch, but not in any definite pitch or tuning. Gongs and drums are also not tuned, but arranged from low to high.

Bongos may be played by trilling with two fingers, staccato.

(The pitches given for rice bowls indicate the order of pitch only, not specific pitch.)

(All accented notes should be brought out sharply, the other notes very soft. The FF in the final measures to come suddenly in each instrument, no crescendos.)

\*Other sorts of bowls may be substituted if desired.

HENRY COWELL

Fig. 2.1: Directions in *Ostinato Pianissimo*

## Chapter 3

### Usage of Instruments in a Performance Context

#### Instruments

Research on instrument selection and performance practice as it pertains to both composers and performers, is unusually significant in these percussion works from the 1930s and 1940s, because of the way the instruments have changed since the time of composition. Timbre, historical accuracy, and possible composer intention are each factors in this research. In any case, percussionists should strive for the most appropriate sound production possible for every instrument and in every piece, no matter if the performer is using original instruments or not. Historical replication is important for the preservation of the pieces discussed and makes informed performances easier.

Appropriate sound making for the early percussion ensemble pieces discussed earlier may be a somewhat subjective topic, and has only recently become a salient issue in our field. Chris Shultis, a percussionist and teacher active over the last 30 years notes that “20 years ago almost no one was worried about playing the early pieces on the correct instruments in the percussion field.”<sup>19</sup> Today, in the eyes of both interviewees, percussionists tend to do more research into the pieces of the 1930s and 1940s. There is importance to be placed in studying the past performance practice beyond instrument selection. Broader themes of performance practice such as nuances and subtleties in dynamics, accents, and tempos, can be discovered by examining extant historical

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<sup>19</sup> Chris Shultis, interview with the author, 2021.

recordings and by both past and present experiences from myself and fellow percussionists.

Henry Cowell was a composer who thought carefully about the instruments he included in his pieces, often asserting a knowledge of World Percussion he gained through his international travels, especially West Africa and Latin America.<sup>20</sup> He frequently included explicit instructions on certain performance practices in his pieces, incorporating specific inflections on accents, while also sometimes giving nothing more than a note to “play soft,” as in *Ostinato Pianissimo*.<sup>21</sup> Here, Cowell provides a page of directions in the published score which provides some interesting notes on performance and instruments (Fig. 2.1). In the explicatory notes, a few details stand out to the contemporary reader, such as the mention of only needing 1 professional player for the xylophone part.<sup>22</sup> Generally, his level of detail is impressive as he often describes the “exotic” instruments of the time in his works, so the performers could find suitable substitutes if the authentic ones could not be obtained. Even though many of the rarer instruments Cowell indicates, such as the Indian Jal Tarang, can be easily acquired today, the wide variance in sound across non-Western instruments means that Cowell’s indication of possible substitutions helps the modern percussionist find the appropriate sound.

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<sup>20</sup> Hitchcock, “Henry Cowell,” p. 25.

<sup>21</sup> Ibid, p. 28.

<sup>22</sup> Cowell, Henry, *Ostinato Pianissimo*, (Bryn Mawr, Pennsylvania: Marion Music, Inc, 1979), p. 2.



for Nicolas Slonimsky

# Ostinato Pianissimo

for Percussion Ensemble

3

Score

Duration: c.2'30"

HENRY COWELL  
(1934)

ALLEGRO ( $\text{♩} = 60$ ) SEMPRE PIANISSIMO

Fig. 2.2: First Page of *Ostinato Pianissimo*

In the case of the Jal Tarang, it would seem Cowell is indicating a specific pitch for each bowl. However, he is most likely using the term “interval” to indicate the relationship between the instruments. While they have an exact pitch, their pitch is not considered essential to the harmonic content of the piece. Another interesting part to

address is that the Jal Tarang is indicated in the directions to play the intervals indicated (Fig 2.1 & 2.2), but it is also placed in treble clef, even though Cowell specifically says they do not have to be any definite pitch.<sup>23</sup> In addition to specific instrumental considerations, Cowell provides the players some performance notes, with explanation on how to play the bongo part, instructions for how the instruments should be arranged, and notes on how to play accents and dynamic inflection. The last noteworthy instrument in *Ostinato Pianissimo*, is a tambourine with the rattles removed, as mentioned above. Many percussion ensemble performances I have studied play this part on a high pitched tom-tom, Chinese tom-toms or something similar, as is the case with the LSU Percussion recording.<sup>24</sup> This is an important point to make because it is a hassle to remove the jingles from any tambourine and the performer can get the desired effect by using a higher pitched drum or frame drum, if they understand what a tambourine would sound like with no jingles.

John Cage is another great example of a composer who was very particular about the sounds and timbres being produced in his pieces at the time he was writing them. Al Otte told the author “Cage didn’t go through his ‘attachment to non-attachment’ phase until after his percussion pieces had been written,” meaning he wrote for very carefully selected sounds.<sup>25</sup> Even though he used many found instruments, as detailed above, he cared more about thoughtful sound production through instrument selection than about using the exact items he had in mind. This is evidenced by Russell Hartenberger’s story

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<sup>23</sup> Ibid, p. 2-3.

<sup>24</sup> Joe. W. Moore III, “Ostinato Pianissimo by Henry Cowell,” October 29, 2013, video, 3:07, <https://www.youtube.com/watch?v=fJKnWxsnjZI>.

<sup>25</sup> Allen Otte, interview with the author, 2021.

in his article “Encounters with John Cage” of Cage commenting positively on Nexus’ change of the cowbell part in *Third Construction* played on almglocken instead, calling the timbre “particularly resonant” adding to the group’s very clear sound.<sup>26</sup> The instance provided is a clear example of historical accuracy being supplanted by sonic preference. Cage makes his own case for sound quality taking precedence over tradition.

Another of Cage’s consent to adapt to performance conditions is found in the notes section of *First Construction (In Metal)* (Fig. 3.1). Cage specifies that the conductor can change dynamics depending on the actual instruments selected.<sup>27</sup> Here, he is saying that the particular instance of the instruments he requests should help determine factors like dynamics and tempo.

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<sup>26</sup> Russell Hartenberger, “Encounters with John Cage,” *Percussive Notes* Vol. 50, No. 5 (2012): p. 17, <http://publications.pas.org/Archive/Sept12/1209.16-19.pdf>.

<sup>27</sup> Cage, John, *First Construction (In Metal)*, (New York: Henmar Press Inc, 1962).

## NOTE

THE RHYTHMIC STRUCTURE IS 4-3-2-3-4 (16X16) WITH CODA OF 9 MEASURES (2-3-4) – AN EXPOSITION, (1-1-1-1) FOLLOWED BY DEVELOPMENT (3-2-3-4) AND EXTENSION (2-3-4).

THE PLAYERS USE THE FOLLOWING INSTRUMENTS: 1<sup>ST</sup>, ORCHESTRAL BELLS, SUSPENDED THUNDERSHEET (THERE ARE 5 GRADUATED THUNDERSHEETS FOR PLAYERS 1, 3, 4, 5, AND 6; THIS ONE GIVES THE HIGHEST SOUND); 2<sup>ND</sup>, STRING PIANO (HENRY COWELL'S TERM FOR AN ORDINARY GRAND PIANO, THE STRINGS OF WHICH ARE PERFORMED UPON) WITH ASSISTANT (THE ASSISTANT APPLIES A METAL ROD FIRMLY ON THE STRINGS USED, PRODUCING HARMONICS;  $\wedge$  AND  $\vee$  INDICATE SLOW SLIDES OF THE ROD AWAY FROM OR TOWARD THE CENTER OF THE STRING'S LENGTH, PRODUCING, RESPECTIVELY, ASCENDING AND DESCENDING SIREN-LIKE SOUNDS; ANY JANGLING SOUND IS AVOIDED BY INCREASING THE PRESSURE ON THE STRINGS; IF, BECAUSE OF THE PIANO CONSTRUCTION, THE TONES NOTATED DO NOT PERMIT THE FREE USE OF THE ROD, USE OTHER TONES THAT DO); (THE 2<sup>ND</sup> PLAYER PLAYS AT THE KEYBOARD, EXCEPT, AS IN  $\square$ , WHEN HE SWEEPS A GONG BEATER ACROSS THE BASS STRINGS.); 3<sup>RD</sup>, SUSPENDED THUNDERSHEET, SUSPENDED STRING OF SMALL SLEIGH BELLS, 12 GRADUATED COXEN BELLS (OR 12 GRADUATED BALINESE BUTON GONGS SUSPENDED HORIZONTALLY); 4<sup>TH</sup>, SUSPENDED THUNDERSHEET, 4 GRADUATED MUTED BRAKE DRUMS, 8 GRADUATED COW BELLS, 3 GRADUATED JAPANESE TEMPLE GONGS (STRUCK; TREMOLO BETWEEN TWO); 5<sup>TH</sup>, SUSPENDED THUNDERSHEET, 4 GRADUATED SUSPENDED TURKISH CYMBALS, 4 GRADUATED MUTED ANVILS – PIECES OF NON-RESONANT METAL PLACED ON PADS, 4 GRADUATED SUSPENDED CHINESE CYMBALS; 6<sup>TH</sup>, SUSPENDED THUNDERSHEET, 4 GRADUATED MUTED GONGS (PLACED FLAT ON PADS), WATER GONG (12"-16" CHINESE GONG RAISED OUT OF, OR LOWERED INTO TUB OF WATER DURING TONE PRODUCTION), TAM TAM, SUSPENDED GONG.

THE CONDUCTOR MAY ALTER THE INITIAL TEMPO SO THAT IT EXCEEDS 96 BUT NOT 120, OR HE MAY INCREASE THE TEMPO AT  $\square$ ,  $\square$ , AND  $\square$  IN WHICH CASE THE TEMPO AT  $\square$  WILL BE THAT AT  $\square$ . HE MAY ALSO MAKE CHANGES IN DYNAMICS IF, DUE TO THE ACTUAL INSTRUMENTS USED, THESE ARE NECESSARY.

Fig. 3.1: Notes in *First Construction (In Metal)*

Some parts provide helpful descriptions, such as the specification of four muted anvils as pieces of non-resonant metal placed on pads in player 5's instrument list.<sup>28</sup> This is an important distinction from the four muted brake drums in player 4's list, because in today's percussion ensembles it is very common to substitute brake drums for any part where the composers write for anvils, and so Cage is clear here on the sounds being different. In the first page of the score to *First Construction* (Fig. 3.2), the performers should note that Cage has included specific beaters with which to strike some of the

<sup>28</sup> Ibid.



instruments.<sup>29</sup> If we assume a composer's intention without putting in the work to research the background of a particular piece then we may end up farther from the end goal than we thought. Often, making an informed decision is as simple as reading through the composer's notes or directions thoroughly before rehearsing a given piece.

FIRST CONSTRUCTION (IN METAL)

PERCUSSION SEXTET WITH ASSISTANT

JOHN CAGE

$\text{♩} = 96$  (MODERATELY FAST)

1 THUNDER SHEET

2 STRING PIANO WITH ASSISTANT  
PEDAL THROUGHOUT

3 OXEN BELLS RUBBER BEATERS

4 THUNDER SHEET

5 THUNDER SHEET

6 THUNDER SHEET

ORCHESTRAL BELLS METAL BEATERS

BRAKE DRUMS LEATHER COVERED BEATERS

TURKISH CYMBALS SOFT BEATERS

MUTED GONGS SOFT BEATERS

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Fig. 3.2: First Page of *First Construction (In Metal)*

<sup>29</sup>Ibid, p. 1.

## Performance Practice

When looking more specifically at performance practice, Erik Heine and David Steffens present a useful table for comparative analysis of Varèse's *Ionisation*. The table gives us a look into changes over time from a performance standpoint, using average tempos and differences in presentation throughout certain parts of the piece. The first assumption one might make before looking at the table was that the tempos of the earlier recordings would be generally slower, based on a knowledge that professional percussionists were often not playing the early pieces at the time of their writing. This assumption comes from the fact that non-professional players often had to take things slower than seasoned percussionists. It is not so evident to say that every earlier recording is slower than every modern recording, since the tempos vary dramatically. However, the earliest recording, from the 1933 premiere by Nicolas Slonimsky, is on the lower half of the tempo spectrum when compared to recordings of the early 1990's to the 2000's.<sup>30</sup>

Some composers will give more specific details on dynamic and tempo, such as near the end of the notes section in *First Construction* (Fig.3.1), where Cage says "The conductor may alter the initial tempo so that it exceeds 96 but not 120."<sup>31</sup> If the performer is correctly reading through Cages notes, then the range of tempos for *First Construction* will be more limited than in pieces by composers who are not as specific. When looking at musical factors such as tempos and other nuances of performance practice changing over time, Chris Shultis put the comparison clearly when he told the author "many of

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<sup>30</sup> Erik Heine, and David Steffens, "Ionisation: A Comparative Analysis of Published Editions and Recordings," *Percussive Notes* Vol. 47, No. 3 (2009): p. 54, <http://publications.pas.org/archive/Jun09/articles/0906.52-57.pdf>

<sup>31</sup> John Cage, *First Construction (In Metal)*.

today's percussionists can play the Cage pieces perfectly and so they lose a wild energy that was natural in the 1930s and 1940s."<sup>32</sup> This conveys that often there are many subjective parts of performing an older piece but historical ideas should inform things like tempo and instrument choice if one is to re-create the "wild energy" of the 1930s and 1940s works. Shultis goes on to compare the "wild energy" aptly to Stravinsky's *Rite of Spring* (1913), which, when first premiered, was considered exceedingly difficult for the performers and the same can be said of *Ionisation*, parts of *Ostinato Pianissimo*, and Cage's *Constructions*. With the ability to play these pieces through upon the first try, both Chris and Allen Otte agree that some modern percussion ensembles tend to lose some of that original energy that comes from the piece being difficult to perform. Otte clarifies that "Cage cared a lot about sound and had specific ideas about tempo when he was first writing the *Constructions*," and goes on to say that "percussionists today tend to play the pieces much faster."<sup>33</sup>

The assumption of composer intention can facilitate discussion about changing a piece based on what a performer thinks the composer would have written, or what instruments they would have written for. This topic is much more controversial in my opinion, after talking to many fellow percussionists especially in the orchestral realm of playing, mostly due to the nature of that profession playing so many older pieces. Some evidence suggests that early percussion composers would have written parts differently, as is the case with Varèse stating that he always wanted to write for new instruments,

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<sup>32</sup> Chris Shultis, interview with the author, 2021.

<sup>33</sup> Allen Otte, interview with the author, March 2021.

seemingly as they became available.<sup>34</sup> A claim can be made toward this as many composers throughout time certainly enjoy constantly looking for new sounds and timbres to produce.

It should be noted, however, that once a composer writes a piece, it enters the hands of performers and is left up to their interpretation. One can also not claim to historically re-create a given piece of music as a composer intended if they are only picking and choosing what to emulate from a composer's original intention. Instruments are not the only deciding factor when attempting to play a piece with historical accuracy. Factors like tempo, accents, and whether the players are amateurs or not also determine a sense of authenticity when replicating pieces of the 1930s and 1940s. Even though the early percussion composers seemed to think in depth about the sounds for which they were writing, and collected many of the instruments themselves, it is likely they would have changed something if they heard an instrument they liked. The examples given would be John Cage instructing Nexus and enjoying the almglocken sound instead of the cowbells for which he had written. Varèse was always swayed by Nicolas Slonimsky when picking the tarole and an exact siren for *Ionisation*. Composer intention may be hard to pinpoint because of these many factors.

We can go back even further than the 1930s and use timpani as an example for change in composer intention, because the writing for them changed drastically in the 1800's as new mechanizations made it so changing pitch was much easier. Many percussionists reference this time period when making an argument about changing parts

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<sup>34</sup> Jonathan W. Bernard, "Pitch/Register in the Music of Edgard Varèse," *Music Theory Spectrum* Vol. 3 (1981): p. 2, <https://doi-org.ezproxy1.lib.asu.edu/10.2307/746131>.



based on guessing what the composer would have done, had the proper instruments or performance practice existed at the time. Chris Shultis, said that “a lot of composers are heavily involved in picking instruments and care about the sounds they are producing.”<sup>35</sup> The author believes there is room for interpretation occasionally and some composers, like John Cage with the almglocken story earlier, do not mind exploration in their music, especially if they view it as a change that serves the same purpose. The question then becomes, how far is too far when making interpretational decisions, and what would each individual composer consider appropriate substitutes for certain instruments?

These questions do not have one answer, but I will be looking at past examples in addition to common solutions many percussionists utilize in today’s percussion ensembles. When considering substituting instruments one may not have or be able to access, it is important to first research the original instrument and study it as closely as possible. Knowledge about the original will make selecting a replacement easier as you are aware of the composer’s intended sound qualities. Shultis uses a great example in brake drums, noted for their large difference from the 1930s compared to today. The older ones rang for a longer period of time, making them ideal for the metallic timbre required of them in many pieces.<sup>36</sup> By contrast, today’s brake drums are much more staccato in their attack and are not optimal for tone production in most circumstances. This document provides audio examples of these different types of brake drums, showcasing the different timbres both thick and thin metals can have. When selecting instruments in a scenario where the performer is attempting historical accuracy, it would

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<sup>35</sup> Christopher Shultis, interview with the author, 2021.

<sup>36</sup> Shultis, “No Ear for Music,” p. 91.

be paramount to find brake drums that have a very clear and ringing sound, as the 1930s and 1940s instruments would have supplied. Certain companies like Dream Cymbals make bell plates, which function as very resonant metallic sounds with many overtones. If one can find more modern brake plates or pulleys instead, then these would be a suitable substitute, since they ring for much longer than their brake drum counterparts. The act of choosing the appropriate substitutes for original instruments is an integral part of performance practice in percussion ensemble music.

## **Chapter 4**

### **Changes in Instruments and Performance Practice: Side by Side**

This section will explore the major differences in instruments from the 1930s and 1940s to modern day through side-by-side audio recordings. Additionally, this section will provide a comparative analysis of recordings from the 1930s to present day for *Ionisation*, *Ostinato Pianissimo*, *First Construction*, and *Third Construction*. The process for each recording was as consistent as possible, taking into account how far the instruments were from the microphone and the same usage of implements for direct comparisons. The instruments compared include Chinese tom-toms, brake drums, various mallet instruments, and wood blocks, that will be researched in detail, while discussing the fundamental differences in sound and tone production produced by the instruments of both periods.

An importance should be placed on the selection of instruments for any percussion ensemble piece, but more research naturally goes into the consideration for the earliest ones, since it may be impossible to inquire with certain composers about their

instrument selection. My aim is to provide a simple space to explore the sounds of the 1930s and 1940s instruments and to give a detailed background on each, so listening is easier when reflecting on timbre and tone production. In our interview, Chris Shultis states that “there is a difference in live performances to recordings as generally touring ensembles will not bring all their own instruments to a show, but they have freedom to pick in a recording session.”<sup>37</sup> This is an important distinction to make, because this paper looks at both live recordings and studio sessions, so in the latter the performers have freedom to acquire the exact instruments they want, to be able to curate certain sounds, whether they are emulating original composer intention or not. Of course, some professional ensembles may have traveled for some shows with their own equipment, but in general many touring groups use what is available. Depending on the instruments the groups had access too, some recordings may not be an accurate reflection on what the players would have used if they had complete control over this aspect. This is why I produced my own recordings, in an attempt to give the listener an accurate representation of some instruments when compared next to each other.

### The Author’s Recordings

For my recordings of the individual instruments, I used the default settings in the Digital Audio Workstation program, Garageband. The sample rate was 44.1kHz, and the bit depth was 24-Bit. The microphone used was a Blue Yeti Pro podcast mic and it was always placed exactly 6 feet from the instrument being recorded. Anytime a different playing area was used,

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<sup>37</sup> Chris Shultis, interview with the author, 2021.

such as on the Chinese tom-toms, an exact measurement was used on the drum head to produce accurate results from every instrument.

The first comparison recordings this study focuses on are the 1930s Chinese tom-toms to a modern set of double headed toms. In my recording comparisons of Chinese tom-toms to double headed tom-toms, one can get a sense of how different the instruments sound, and how replacing a part originally meant for these Chinese tack headed drums requires a lot of careful thought. I broke down the audio into 12 sections for both the 10 and 12 inch tom, played at the center and the edge of each instrument while using a stick on each playing zone, followed by a rubber mallet, and then hands/fingertips. The Chinese tom-toms used have a short wooden shell with an animal skin head attached to the shell with many small tacks. The double headed tom-tom is a Pearl brand, with a much deeper wooden shell and a plastic head screwed onto the shell by lugs and a metal hoop. A tonal difference that is immediately obvious is the plastic head on the double headed tom compared to the skin head of the Chinese tom-toms. The plastic headed tom produces a thinner overall sound, even though it rings much longer and produces more overtones, while the skin head provides a warm tone that decays quickly. They both serve unique purposes, with the Chinese drum being preferable for any piece where a long ringing tom is not the desired sound. The Chinese tom-toms have a bigger tonal difference in the playing areas, so it is easier to produce different tones or even relative pitch by simply playing on a different part of the drum, while the double headed tom-tom does not offer quite the same contrast. This important information elucidates instrument substitutions that may be far from the originals in sound, if that is

the desired effect of the performer. Both Shultis and Otte provided me helpful insight into substitutions specifically for the calf headed Chinese tom-toms that are found in my recordings. Shultis told me that a better substitute for calf skin heads are the synthetic heads that replicate skin because pure plastic heads are too different from the originals.<sup>38</sup> Otte suggests in our interview that applying a small amount of gaffers tape to even plastic heads will help eliminate ringing and high over tones, thereby getting the sound of the modern tom-toms closer to that of the original Chinese tack headed drums.<sup>39</sup> These Chinese tom-toms have some of the most apparent sonic differences of all the instruments included in this study.

Mallet instruments were examined next, and do not appear frequently in the 1930s and 1940s pieces being studied, however a prominent xylophone part exists (fig. 2.3), starting at rehearsal number 40, in Henry Cowell's landmark work *Ostinato Pianissimo*. I was able to access recordings for a marimba, vibraphone, and xylophone from the late 1920s and early 1930s through Kutztown University's Center for Mallet Research, to compare to today's mallet instruments. An excess of differences in the time periods when the comparisons were made are not abundant, since the general construction of the instruments has not changed drastically. There is some difference in timbre between the 1930s Canterbury vibraphone and the modern Adams vibraphone; The Adams has a slightly sharper and lighter sound, and the Canterbury has a darker sound, with slightly less overtones. Both the King George marimba, which was made to tour with the International Marimba Symphony Orchestra in the 1930s, and the modern Adams

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<sup>38</sup> Chris Shultis, interview with the author, 2021.

<sup>39</sup> Allen Otte, interview with the author, March 2021.

marimba use rosewood bars, so most of today's marimbas would be an acceptable substitute.

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The image displays two systems of musical notation. The first system, starting at measure 35, features seven staves: S.P. (1), S.P. (2), R.B., W.B., Tamb. G., Dr., and Gongs. The second system, starting at measure 40, features eight staves: S.P. (1), S.P. (2), R.B., Xyl., W.B., Tamb. G., Dr., and Gongs. The Xyl. part in the second system is marked 'soft mallet' and shows a complex rhythmic pattern. The score is written in a key signature of one flat and a common time signature.

Fig. 2.3: Xylophone (Xyl.) Entrance in *Ostinato Pianissimo*

Brake drums are one of the more sonically different instruments over time, as a recording from two Ford Model A brake drums, manufactured between 1927-1931, indicate. The two older brake drums (pitched at C-sharp and C respectively) are extremely resonant and have a beautiful, overtone rich sound. The author's recording of a

more modern brake drum is essentially the opposite, being very dead and harshly metallic. The older brake drums would have been around at the time of many early percussion ensemble works. It is an interesting note that in the original recording of the Model A brake drum, the drum is struck with a wrench, and so I did the same for the modern recording.

Woodblocks do not have quite as many distinctive differences as the other instruments, but some are still noticeable. Woodblocks are used in many early percussion pieces including *Ostinato Pianissimo*. These instruments are an interesting case, because many composers in the 1930s used the term “Chinese woodblocks” to describe the instruments used today, which are often rectangular hollowed out blocks of wood. The term woodblock alone usually meant something like a 2x4 inch piece of wood in the 1930s. In the author’s recordings a woodblock instrument is used from both the 1930s and present day. The 1930s woodblocks that were used have a very “chirpy” sound to them when struck with both the mallet and the drum stick. The author describes the sound as being akin to a frog croaking, where the more modern woodblocks have a heavier attack, and a woodier sound.

### Professional Ensemble Recordings

While listening to the earliest and latest recordings of the four percussion ensemble pieces, my focus was on timbral examination, with a performance analysis being secondary. It was critical to listen for different instruments in both time periods, and to try to pinpoint what those instruments were. Many of the earliest recordings, especially for Cage’s pieces, are from the early 1950s, about 10 years after *Third*

*Construction* (1941). This was not too much of a concern, as Shultis stated, “many of the 1950s performers of Cage’s music had heard or seen the *Constructions* played in its original form and were therefore very accurate in their reproduction.”<sup>40</sup> What is a concern, however, is the relationship between composers and performers. The players who have worked closely with composers tend to have more of an authority on instrument selection. This is because they were often on the forefront of timbral considerations with the composer who knew what they wanted.

There are numerous recordings of John Cage’s pieces, and a few stand out as innovative or very true to the original works. Amadinda, Nexus, and Third Coast percussion ensembles have what many would consider the most important recordings, simply for how they are performed, the risks they take, and the dedication to the original intention. Amadinda’s multi-volume release of John Cage’s Works for Percussion is a fantastic source for listening to the *Constructions* with appropriate instruments. The Chinese tom-toms in Amadinda’s recording of *Third Construction* are era specific and sound very warm, with little overtones but still articulate enough when played with fingers as Cage specifies.<sup>41</sup> Also typical of the instruments Cage would have used, Amadinda seems to use rattles that have minimal beads inside, so it is possible they procured actual Northwest Indian rattles for the recording.

Third Coast percussion has newer recordings of Cage’s pieces with some notable differences from the other recordings. In their 2012 recording, Third Coast’s tom part

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<sup>40</sup> Chris Shultis, interview with the author, 2021.

<sup>41</sup> Amadinda Percussion Group, *John Cage Works for Percussion, Vol. 2 (1941-1950)*, recorded 2000, Hungaroton, Naxos Music Library.



rings more than in Amadinda's recording, and the tin can part is pitched much higher in the former.<sup>42</sup> The quijada part, otherwise known as a jawbone, is seemingly played on a vibraslap in Third Coast's recording, which is a common substitute that usually rings too long compared to the actual instrument Cage asks for. The vibraslap is still fairly staccato in the 2012 recording so the knowledge of the original instrument is demonstrated in this sense. In Amadinda's recording, the quijadas sounds exactly like what a jawbone is, leading me to believe they are using the instrument Cage specifies. Nexus's 1984 recording has some major timbral differences, especially in the tin cans. The "twang" of the tin cans is very evident and almost sounds like a bending of pitch depending on where the performers are hitting on the instrument.<sup>43</sup> The first page of the score (fig. 4.1) specifies the instrumentation and some specific techniques Cage asks for, such as playing with hands and putting tacks in tin cans to achieve a rattle sound.

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<sup>42</sup> Third Coast Percussion, *John Cage: The Works for Percussion, Vol. 2*, recorded April 17, 2012, Mode Records, Naxos Music Library.

<sup>43</sup> Bill Cahn, "Third Construction- NEXUS 1984," October 3, 2012, video, 12:52, [https://www.youtube.com/watch?v=C\\_ZHd-RelUg](https://www.youtube.com/watch?v=C_ZHd-RelUg).

♩ = 108

N.W. INDIAN RATTLE

The musical score is arranged in three systems, each with four staves. The top staff of each system contains a melodic line with various dynamics and articulations. The second staff is labeled 'DRUMS (PLAY WITH FINGERS)' and features a rhythmic pattern of eighth and sixteenth notes. The third staff is labeled 'DRUMS' and shows a simpler rhythmic pattern. The fourth staff is labeled 'TIN CAN WITH TACKS' and provides a low-frequency accompaniment. Dynamics include *mf* (mezzo-forte) and *pp* (pianissimo). The tempo is marked as quarter note = 108. The score is divided into measures by vertical bar lines, with some measures containing rests or specific rhythmic notations.

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Fig. 4.1 First Page of *Third Construction*

Both Third Coast and Amadinda also have excellent recordings of *First Construction (In Metal)*. However, one of the oldest recordings of this piece does not

appear until 1958 when Paul Price, famed percussion educator, led the Manhattan Percussion ensemble for the 25-year anniversary of Cage's music. This is a fantastic comparison recording because Price would have heard the Cage percussion pieces very close to the time they were written. Price's interpretation is a good barometer for authenticity because both the performance practice and instrumentation in the 1950's was still very similar to Cage's intentions from 10 years prior. In this 1958 recording, the cowbells are not as resonant as in more recent recordings of the piece, and the anvil part is especially deadened.<sup>44</sup> In contrast, the brake drums ring more than modern ones would, which makes sense when listening to the author's recording of these instruments from both time periods. As a whole, this early recording is more purely metallic, with less ringing overall and more sharp metal attacks from all the players.

*Ionisation* has many important recordings, from the 1933 Nicolas Slonimsky recording mentioned above, to the 1977 recording led by Pierre Boulez and performed by the New York Philharmonic Orchestra. The main instrument of focus in this piece from a performance and timbre standpoint is the tarole, for which a note can be found in Varèse's Nomenclature of Instruments page in the *Ionisation* score (Fig. 1.1).<sup>45</sup> The "flat military drum" sounds mostly different in every recording available of the piece, though later recordings tend to have more snare response along with an overall warmer tone than the 1933 premiere recording. One could say that the originally-intended sound comes from this 1933 recording, led by Slonimsky, since he helped Varèse find the exact

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<sup>44</sup> Manhattan Percussion Ensemble, *The 25-Year Retrospective Concert of the Music of John Cage*, recorded May 1958, Apple Music.

<sup>45</sup> Varèse, Edgard, *Ionisation*, (New York: Colfranc Music Publishing Corporation: 1934) p. 3.

instrument for the tarole part that he was searching for.<sup>46</sup> The sound in the premiere recording is much tighter, with less snare response, and slightly higher pitched than most other recordings available.

The last piece in this timbral study is Henry Cowell's *Ostianto Pianissimo*, written in 1934. Many of the differences in soundscape from various recordings come through in the rice bowl, or Jal Tarang part. There is a great recording of percussionist and pedagogue Thomas Siwe leading the University of Michigan percussion ensemble in Cowell's piece. Siwe's interpretation and instrument selection are well thought out and the timbres all blend very well. In this recording, the rice bowl part speaks very well and rings enough without washing out the other parts.<sup>47</sup> It is difficult to discern without video if the ensemble is using an actual Jal Tarang or just a series of bowls as Cowell gives for substitute. The woodblock and guiro parts both have nice snap to them in Siwe's recording which cuts through the texture enough to be heard amongst all the other instruments. Careful consideration being on the blending of timbres is evident in this 2002 recording.

## **Chapter 5**

### **Conclusion**

Studying performance practice and instrument selection of the 1930s and 1940s pieces by John Cage, Henry Cowell, and Edgard Varèse, has demonstrated their drastic change over time. The instruments used in the early percussion ensemble pieces have

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<sup>46</sup> Holder, "Varèse's Drum," p. 68.

<sup>47</sup> Thomas Siwe, and the University of Michigan Percussion Ensemble, *Historic Works for Percussion Ensemble (1931-1942)*, recorded 2002, Equilibrium Records, Apple Music.

gone through many developments in the past 90 years and the availability of many has also changed. Making informed decisions when selecting timbres and sounds for performance, in addition to making intentional musical choices regarding tempos, dynamics, and more, will elevate a historical performance of a piece. Substitutes for original instruments should be well thought out and backed by a knowledge of the period in which the work was written. From the conclusions of the author's research, performers and musicologists should factor in composer intention and instrument construction when playing the early percussion ensemble pieces in a historically accurate manner.

More studies using an even wider array of 1930s and 1940s percussion pieces by more composers could help expand the information available to modern composers, performers, and pedagogues when programming those works. Greater research into the specific instruments used by performers and composers in the early pieces would also benefit a wide array of people when it comes to historical accuracy in the context of modern performances.

This study is important because it can help an entire generation of percussionists make informed decision regarding performance practice and elevate the performances of these landmark percussion works. The knowledge obtained through this research will ultimately create better audience experiences through more informed performances, whether the performers or ensemble leaders are making an attempt at playing with exact historical accuracy or not. Listening to old and new recordings of the 1930s and 1940s percussion ensemble pieces should also be emphasized to partner with the careful research laid out in this document. By combining experiences of the performer, careful

analysis of the early percussion works, and the studies done in this paper, any performer will be able to play the historical pieces with an intriguing level of detail and accuracy.

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APPENDIX A  
SOUND FILES COMPARING MODERN AND EARLY PERCUSSION  
INSTRUMENTS

Note: recording numbers match file names

1. 10-inch Chinese tom tom, with a stick in the center of the head  
(1\_10Chinese\_Tom\_Center\_Stick.mp3)
2. 10-inch Chinese tom tom, with rubber mallet in the center of the head  
(2\_10Chinese\_Tom\_Center\_Mallet.mp3)
3. 10-inch Chinese tom tom, with hands in the center of the head  
(3\_10Chinese\_Tom\_Center\_Hand.mp3)
4. 10-inch Chinese tom tom, with a stick at the edge of the head  
(4\_10Chinese\_Tom\_Edge\_Stick.mp3)
5. 10-inch Chinese tom tom, with rubber mallet at the edge of the head  
(5\_10Chinese\_Tom\_Edge\_Mallet.mp3)
6. 10-inch Chinese tom tom, with hands at the edge of the head  
(6\_10Chinese\_Tom\_Edge\_Hand.mp3)
7. 12-inch Chinese tom tom, with a stick in the center of the head  
(7\_12Chinese\_Tom\_Center\_Stick.mp3)
8. 12-inch Chinese tom tom, with rubber mallet in the center of the head  
(8\_12Chinese\_Tom\_Center\_Mallet.mp3)
9. 12-inch Chinese tom tom, with hands in the center of the head  
(9\_12Chinese\_Tom\_Center\_Hand.mp3)
10. 12-inch Chinese tom tom, with a stick at the edge of the head  
(10\_12Chinese\_Tom\_Edge\_Stick.mp3)
11. 12-inch Chinese tom tom, with rubber mallet at the edge of the head  
(11\_12Chinese\_Tom\_Edge\_Mallet.mp3)
12. 12-inch Chinese tom tom, with hands at the edge of the head  
(12\_12Chinese\_Tom\_Edge\_Hand.mp3)
13. 10-inch tom tom, with a stick in the center of the head  
(13\_10Tom\_Center\_Stick.mp3)
14. 10-inch tom tom, with rubber mallet in the center of the head  
(14\_10Tom\_Center\_Mallet.mp3)
15. 10-inch tom tom, with hands in the center of the head  
(15\_10Tom\_Center\_Hand.mp30)

16. 10-inch tom tom, with a stick at the edge of the head  
(16\_10Tom\_Edge\_Stick.mp3)
17. 10-inch tom tom, with rubber mallet at the edge of the head  
(17\_10Tom\_Edge\_Mallet.mp3)
18. 10-inch tom tom, with hands at the edge of the head  
(18\_10Tom\_Edge\_Hand.mp3)
19. 12-inch tom tom, with a stick in the center of the head  
(19\_12Tom\_Center\_Stick.mp3)
20. 12-inch tom tom, with rubber mallet in the center of the head  
(20\_12Tom\_Center\_Mallet.mp3)
21. 12-inch tom tom, with hands in the center of the head  
(21\_12Tom\_Center\_Hand.mp3)
22. 12-inch tom tom, with a stick at the edge of the head  
(22\_12Tom\_Edge\_Stick.mp3)
23. 12-inch tom tom, with rubber mallet at the edge of the head  
(23\_12Tom\_Edge\_Mallet.mp3)
24. 12-inch tom tom, with hands at the edge of the head  
(24\_12Tom\_Edge\_Hand.mp3)
25. King George Marimba C Scale  
(25\_King\_George\_Marimba\_Scale.m4a)
26. Modern Adams Marimba C Scale  
(26\_Adams\_Marimba\_Scale.mp3)
27. Canterbury Vibraphone with No Pedal C Scale  
(27\_Canterbury\_Vibe\_Scale.m4a)
28. Canterbury Vibraphone with Pedal C Scale  
(28\_Canterbury\_Vibe\_Pedal\_Scale.m4a)
29. Modern Adams Vibraphone with No Pedal C Scale  
(29\_Adams\_Vibe\_Scale.mp3)
30. Modern Adams Vibraphone with Pedal C Scale  
(30\_Adams\_Vibe\_Pedal\_Scale.mp3)

31. Deagan Xylophone C Scale  
(31\_Deagan\_Xylo\_Scale.m4a)
32. Modern Xylophone Scale  
(32\_Xylo\_Scale.mp3)
33. Ford Model A Brake Drum C# and C struck with wrench  
(33\_Ford\_Brake\_Drum.mp3)
34. Modern Brake Drum struck with wrench  
(34\_Modern\_Brake\_Drum.mp3)
35. 1930's Brake Drum suspended and struck with mallet  
(35\_1930\_Suspended\_Brake\_Drum.wav)
36. Modern Woodblock struck with stick  
(36\_Modern\_Woodblock\_Stick.mp3)
37. Modern Woodblock struck with a rubber mallet  
(37\_Modern\_Woodblock\_Mallet.mp3\_
38. 1930's Woodblock struck with a stick  
(38\_1930\_Woodblock\_Stick.wav)
39. 1930's Woodblock struck with a rubber mallet  
(39\_1930\_Woodblock\_Mallet.wav)

APPENDIX B

ASU INTEGRITY REVIEW BOARD (IRB) SUBMISSION FILE



EXEMPTION GRANTED

[Michael Compitello](#)  
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480/965-3549  
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Dear [Michael Compitello](#):

On 3/19/2021 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Percussion Ensemble Performance Practice and Instrumentation Changes: Comparing New to Old
Investigator:	<a href="#">Michael Compitello</a>
IRB ID:	STUDY00013657
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"><li>• Tyler Wales Consent Form, Category: Consent Form;</li><li>• Tyler Wales IRB Social Behavioral, Category: IRB Protocol;</li><li>• Wales Interview Questions, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);</li></ul>

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 3/19/2021.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

If any changes are made to the study, the IRB must be notified at [research.integrity@asu.edu](mailto:research.integrity@asu.edu) to determine if additional reviews/approvals are required. Changes may include but not limited to revisions to data collection, survey and/or interview questions, and vulnerable populations, etc.