Charles Ives on the Nature of Experience: The Compositional Designs and Aesthetic Programs of Three Orchestral Works

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CHARLES IVES ON THE NATURE OF EXPERIENCE: THE
COMPOSITIONAL DESIGN AND AESTHETIC PROGRAMS OF THREE
ORCHESTRAL WORKS

by

ASHLEÉ MICHELE MILLER

A dissertation submitted to the Graduate Faculty in Music in partial fulfillment of the
requirements for the degree of Doctoral of Musical Arts, The City University of New York.

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ASHLEÉ MICHELE MILLER

This manuscript has been read and accepted for the Graduate Faculty in Music to satisfy the dissertation requirement for the degree of Doctor of Musical Arts.

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ABSTRACT

Charles Ives on the Nature of Experience: The Compositional Designs and Aesthetic Programs of Three Orchestral Works

by

Ashléé Michele Miller

Advisor: Stephen Blum

Charles Ives on the Nature of Experience: The Compositional Designs and Aesthetic Programs of Three Orchestral Works explores the hypothesis that Ives set in motion in many of his compositions a juxtaposition of temporal process (such as polyrhythm and polymeter) with the aim of exploiting a person’s innate abilities to entrain. Ives believed participants engaged in a juxtaposition of temporal processes are able to form personalized experiences by choosing which elements to attend to.

I present three analyses to explore the potential for multiple entrainment experiences in three works by Ives: The Unanswered Question, Central Park in the Dark, and the Fourth Symphony. Each composition contains a juxtaposition of temporal processes and a written program addressing the nature of human experience. I examine each work’s compositional design and written program to find an underlying process (“aesthetic program”) that is realized in both musical and extra-musical forms.

Chapter 2, “Ives’s Views and Approaches to Musical Time,” outlines Ives’s performance approach to polyrhythms and connects his performance practice with current studies on polyrhythmic performance. Ives considered musical time as being built on a fluid foundation that
is continually affected by experience. I connect this approach with current musical theories that consider experience a critical component in the unfolding of musical time: Christopher Hasty’s theory of projection and Mari Reiss Jones’s concept of subjective generators.

Ives referred to many of his compositions as “Pictures in Sounds.” Chapter 3 “Pictures in Sounds” lists these compositions and explores the underlying aesthetic objective in this sub-category in Ives’s oeuvre. I claim that these musical illustrations are perceptual images comprised of the participant’s perceptual anticipations while entraining in the musical experience. As participants engage in a juxtaposition of temporal processes, their choices while listening and/or performing shape and define their individual experiences, resulting in individual “views.”

As many researchers have noted, Ives was interested in cycles as a medium of unification. The term “cycles” in music however has typically referred to imbedded or repetitive structures. In Chapter 4 (“Cycles Revised”), I treat the use of “cycles” as a process and connect Ives’s use of the term to Ulric Neisser’s concept of “perceptual cycles.” Both authors considered cycles and perception as being continually evolving processes rooted in the inseparable variable of experience.

I introduce the concept of cyclic reference units (CRU), which are continual musical processes that guarantee a juxtaposition of temporal processes, heard or unheard. The CRU creates a rhythmic density in Ives’s music that allows listeners and performers to actively choose between different temporal processes inherent in the work or attune to an internal process in the creation of a composite view. I assert that this rhythmic density in Ives’s music reverberates into the composition’s musical form and continuity by enabling participants to ultimately choose what is in the foreground, middle ground, and background. Ives’s compositions subsequently
take many forms and facilitate a variety of meanings, creating musical experiences that ultimately embrace diversity and individuals’ rights to choose—paradigms at the heart of Transcendental principles and American values.
For Papa
Preface

I first became acquainted with Charles Ives’s music during my high school years at the North Carolina School of the Arts. As is typical in music appreciation classes, Ives was part of a large group of American composers to be introduced during a quick two-hour lecture. After giving a brief biographical description, our professor, Dr. Irna Priore, had chosen one piece from Ives’s oeuvre to play for the class: an orchestration of *General William Booth Enters Into Heaven* recently recorded by Michael Tilson Thomas with the San Francisco Symphony. This recording became my first encounter with Ives’s music and an experience that would lead to my doctoral thesis less than a decade later.

Sitting in class, I listened to the recording, noting the soft approach of the orchestra’s march as if the ensemble were approaching from a distance. A choir suddenly interjected with the phrase, “Are you washed in the blood of the lamb?” As someone who grew up in a devout Southern Baptist family, I instantly recognized the phrase, which comes from Elisha Hoffman’s hymn of the same name. But there was something strikingly different about encountering the hymn in Ives’s composition than in my previous experiences. In Ives’s work, the phrase is set among clashing harmonies and echoed in a brash tone by the solo baritone. This experience was in stark juxtaposition with my childhood memories, which recalled the hymn in sentimental settings with feelings of reverence and seriousness—experiences engrained in Sunday school. This juxtaposition aroused feelings of humor. And as the singers shouted a sarcastic “Hallelujah!” I started laughing.

I began identifying more musical fragments intermixed in Ives’s composition and became increasingly astounded by the ways Ives layered and used these hymns. At one point, a distant
trombone intoned the “There is a Fountain” while the singers sang (and went) “‘round and ‘round.” I found it hard to listen to both events because the tunes seemed to be moving simultaneously at different speeds. The juxtaposition of both materials created a dizzying experience that would eventually fade and break with cleverly punctuated silences and the phrase “yet, in an instant.”

In the work’s final moments, the singers and instrumentalists unexpectedly engaged in a sentimental rendition of the tune “Are you washed in the blood of the lamb?” This final presence of the tune was more in line with my childhood memories and experiences. The phrase’s sudden transformation, from a cynical chant to a tender intoning, created a contrast that could be easily recognized by all. More interestingly, this musical realization seemed to acknowledge the juxtaposition I had experienced earlier in the work as I acquainted my previous experiences with current ones.

Seven years later, I had similar a experience while listening to the last movement of Ives’s Fourth Symphony in Professor Stephen Blum’s doctoral seminar at The Graduate Center, CUNY. My colleagues and I huddled around the new critical edition while another Michael Tilson Thomas recording filled the room. This time, I could clearly see the layering of various materials in the large blue-bound score. As I listened, my ears began to pick up familiar tunes and begin to switch between them, feeling each melody moving at its own speed. Then an unexpected presence and tune appeared in the final moments of the piece; a choir suddenly entered with a familiar hymn that seemed to coalesce the movement’s large juxtaposition into a communal chant.

As I described my experience to the class, Professor Blum asked me to name the hymn. I quickly sang the melody but mislabeled the hymn as “Are you washed in the blood of the lamb?”
My mistake was possibly the result of connecting my listening experiences of *General William Booth Enters Into Heaven* with the Fourth Symphony’s last movement. Both orchestral and choral works begin and end as if the ensembles are emerging and receding from a distance and build towards a hymn tune that takes place in the works’ final moments. In both experiences, my attention seemed to be shadowing musical materials that were simultaneously moving at different speeds. Nevertheless, Professor Blum politely corrected me, noting that it was the phrase “Nearer My God to Thee” from Lowell Mason’s *Bethany*. My mistake nevertheless highlighted common themes that I was continually tracing through my encounters with Ives’s music.

In early April, our class attended a New York Philharmonic dress rehearsal of the Fourth Symphony conducted by Alan Gilbert. The coincidence of the New York Philharmonic’s performances with the class seminar was a fortunate event. As many know, Ives’s Fourth Symphony is rarely performed due to its large orchestration and Ives’s special requests for a quarter-tone piano and theremin. During that week, I had the opportunity to hear multiple performances of the work and Alan’s comments as he guided the dress rehearsal and subsequent performances.

The class, instead of sitting together, spread out in Alice Tully Hall. A few colleagues ventured up to the balcony and in front, but I had chosen to stay in the center of the hall with Professor Blum and share a copy of the critical edition. During the rehearsal of the “Comedy” movement, I noticed that it was incredibly difficult to follow along. There were multiple ensembles playing and things happening simultaneously, which was easy to look at on paper and imagine but difficult to follow in experience. I looked up to see Alan and his assistant conducting two separate patterns. These patterns occasionally coincided but this alignment seemed to be
coincidental. The main orchestra was musically split into two groups, each attending to their separate leader. The two separate conductors, in addition to being a visual reference for the performers, showed the simultaneous playing of two independent orchestras for the audience—an experience lost in recordings.

Following the dress rehearsal, my colleagues described their impressions after experiencing the piece live. A colleague, who had ventured up to the balcony, regretted his decision because the Distant Choir Ensemble, which was not so distant, drowned out most of the other ensembles. A group of colleagues seated close to the stage remarked that they couldn’t hear the Distant Choir Ensemble or percussion ensemble because of their close proximity to the main orchestra. I realized that Professor Blum and I had picked excellent seats because our equal proximities to the stage and balcony did not create an audible preference for an ensemble. After experiencing the Fourth Symphony in a live performance, I finally had a clearer idea and deeper understanding of Ives’s discussions on the role and effects of spatial relationships in the listening experience.

The juxtapositions, which I occasionally experienced on the musical surface while listening, resonated much deeper in my performance experiences of Ives’s music. During my first year with the New York Youth Symphony, I had the opportunity to play clarinet in Ives’s Central Park in the Dark. The first clarinet lines consist of a melody under consecutive measure-long quintuplet markings in common time. The temporal process of this melody, a solo, is in juxtaposition with the string orchestra. As the string orchestra played, I tried my best not to align my quarter notes with the strings, making sure that my quarter note pulse was continually faster and aligning with the strings at the barline. This task was even more difficult since my melody
was often tied over the barline and strings occasionally had multiplets over their bars as well. I found myself relying on the conductor’s strong downbeats to remain oriented with the strings.

There is a moment in the score where the clarinetist makes an accelerando separately from the orchestra and sets a new tempo for the winds and brass. At this moment, the assistant conductor stepped in to keep our group together and our tempo independent from the string orchestra. During this juxtaposition, it felt as if two ensembles were rehearsing in the same room. To remain with my group, I focused on the assistant conductor’s tactus and to our groups’ events, which were recognizable by the distinct wind ensemble timbre.

My listening and performance experiences with Ives’s music pointed to a common aspect: a “juxtaposition of temporal processes” or the simultaneous playing of musical lines that move at different speeds as in polyrhythm or polymeter. To accentuate these juxtapositions, musical lines are often highlighted with different timbres and/or the spatial separation of performers—compositional strategies that Ives describes in his “Conductor’s Note” to the Fourth Symphony. These compositional designs seemed to enable different experiences according to what participants choose to listen to and where they sat in the hall. In addition, these juxtapositions enable different experiences for performers and listeners. Performers often selectively attend to their temporal process to remain oriented with their group while playing in musical juxtapositions—a process which gradually “tunes out” other groups that could be held primary for listeners and other performers.

After reading numerous writings by Ives, I realized that my inferences aligned with Ives’s intentions. Ives was interested in juxtapositions of temporal processes as a way of creating an aesthetic experience in his music. As participants engage in these juxtapositions, he believed that participants choose what to listen to and that these choices shape their unique musical
experiences or “views.” The aesthetic experience desired in his music was not only described in Ives’s descriptions of musical experiences but also in extra-musical ones. It subsequently occurred to me: Ives seemed interested in the perceptual process as a way of uniting arrays of musical and extra-musical experiences.
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For over a decade, I have had the honor of studying with esteemed clarinetists Charles Neidich and Ayako Oshima. I will never forget the countless lessons and home-cooked meals thoughtfully prepared by both Professor Neidich and Professor Oshima. Here’s a heart-felt thanks to both and the many years we have shared together.

Much gratitude goes to Alan Gilbert, current Music Director of the New York Philharmonic, and his family for their continual friendship and moving performances. Our discussions concerning performance practices in Ives’s Fourth Symphony were reassuring.

I would like to thank Barbara Haws and the New York Philharmonic Digital Archives for providing the general public with a wonderful collection of manuscripts and scores. One of the scores, Charles Ives’s *Central Park in the Dark* with markings by Leonard Bernstein, is referenced in this text. A special thanks to the following publishers for the use of their copyrights: Peer International Corporation, Associated Music Publishers, and Mobart Music Publications (Boelke-Bomart).

Thanks to my wonderful students and invaluable friends. In particular, my comrades in the Parhelion Trio: Sarah Carrier and Andrea Christie.

Most importantly, an overwhelming thanks goes to my family who have been there since the beginning. Thanks, Mom and Dad for all that you do.

This thesis is dedicated to my grandfather (“Papa”), who is one of the most generous and kindest souls that I have ever met. As a child, I continuously followed and observed him—a habit that lead to my nickname “Papa’s Shadow.” Through his encouragement, I have always found the courage to pursue my dreams, fulfill my potential, and encourage others in turn.
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Introduction

*Charles Ives and the Nature of Experience: The Compositional Design and Aesthetic Programs of Three Orchestral Works* begins by briefly addressing a rift between Ives’s aesthetics and canonical traditions. As is well-documented in his writings, Ives disagreed with many of the practices and rules that emerged from European traditions and were taught in music schools. He believed that many of the practices (e.g., counterpoint and four-part writing) were rooted in repetition and inflexible rules, which restricts music’s natural growth and evolution. In his belief that musical and extra-musical experiences are connected, Ives expected music instead to grow in tandem with our naturally evolving abilities to perceive and create new sounds.

Juxtaposition is a common theme in the life and music of Charles Ives. While balancing his preferred roles as a husband and father, Ives lived a dual life, working as a businessman by day and musician by night. His compositions often contain multiple ensembles that play simultaneously, creating musical environments that are rich in juxtapositions of pitch and temporal processes. In his writings, Ives often alludes to these juxtapositions while describing musical and extra-musical experiences. Chapter 1, “Charles Ives on the Nature of Experience,” traces this common theme through several writings by Ives. He found the presence of simultaneous tempos a common occurrence in extra-musical experiences and sought to capture this effect in his music.

Chapter 2, “Ives’s Views and Approaches to Musical Time,” outlines Ives’s performance approach to polyrhythms and connects his performance practice with current studies on polyrhythmic performance. Ives considered musical time as being built on a fluid foundation that is continually affected by experience. I connect this approach with current musical theories that
consider experience a critical component in the unfolding of musical time: Christopher Hasty’s theory of projection and Mari Reiss Jones’s concept of subjective generators.

Ives believed that juxtapositions of temporal processes enable participants to *choose* between various events. He explains that ears and eyes function similarly in the perceptual process, noting that ears are able to choose material in listening experiences in the same way that the eye is able to focus on material in visual ones. Ives even refers to many of his compositions as “Pictures in Sounds” to connect the visual and listening experiences. Chapter 3, “Pictures in Sounds,” lists these compositions and explores the underlying aesthetic objective in this sub-category in Ives’s oeuvre. I claim that these musical illustrations are perceptual images created by the participant’s perceptual anticipations while entraining in the musical experience. As participants engage in a juxtaposition of temporal processes, their choices while listening and/or performing shape and define their individual experiences, resulting in individual “views.” I present the hypothesis that Ives set in motion in many of his compositions a juxtaposition of temporal process with the aim of exploiting a person’s innate abilities to entrain.

As many researchers have noted, Ives was interested in cycles as a medium of unification. The term “cycles” in music has typically referred to imbedded or repetitive structures. In Chapter 4 (“Cycles Revisited”), I treat the use of “cycles” as a process and connect Ives’s use of the term to Ulric Neisser’s concept of “perceptual cycles.” Both authors considered cycles and perception as being continually evolving processes rooted in the inseparable variable of experience.

I present three analyses to explore the potential for multiple entrainment experiences in three works by Ives: *The Unanswered Question, Central Park in the Dark*, and the Fourth Symphony. Each composition contains a juxtaposition of temporal processes and a written
program addressing the nature of human experience. I examine each work’s compositional
design and written program to find an underlying process ("aesthetic program") that is realized in
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I introduce the concept of cyclic reference units (CRU), which are continual musical
processes that guarantee a juxtaposition of temporal processes, heard or unheard. The CRU
creates a rhythmic density in Ives’s music that allows listeners and performers to actively choose
between different temporal processes inherent in the work or attune to an internal process in the
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what is in the foreground, middle ground, and background. Ives’s compositions subsequently
take many forms and facilitate a variety of meanings, creating musical experiences that
ultimately embrace diversity and individuals’ rights to choose—paradigms at the heart of
Transcendental principles and American values.

Ives’s writings and performance notes constitute a significant portion of the sources cited
in this thesis. I include references that range from his Memos and Essays Before a Sonata to
handwritten notes on manuscripts that were designated for performers. The musical examples
presented are taken from critical editions where available. Some quotations include brackets with
designations “MS.” These designations and quotations refer to additional quotations from Ives’s
manuscripts and are published in Boatwright’s editions of Ives’s Essays Before a Sonata.

In discussing Ives’s Universe Symphony, I approach sections of the manuscripts from
Photostats of the score, Ives’s handwritten instructions, and the comprehensive research
conducted by Zachary Lyman. Lyman’s dissertation on the Universe Symphony addresses the
various states of the Universe Symphony manuscripts and the differing views of the three
realizers (Austin, Porter and Reinhard). Photostats of manuscripts, which are provided or described in the text, are referred to by the “f” numbers, which correspond with the numbering system in John Kirkpatrick’s Catalogue and appear at the bottom of each manuscript page.

In the musical analyses, I refer to two types of performer responses, entrainment and reaction, to describe differences in performance experiences. Entrainment is considered here the process of synchronizing a physiological rhythm to periodic stimuli.¹ This process commonly referred to as “listening” (ear) in audible experiences and “observing” (eye) in visual ones—the entrainment process is described in more detail in Chapter 3, “Pictures in Sounds.” Entrainment often leads to other forms of synchronizations, such as aligning finger or hand movements. Reaction does not require synchronization. Performers notice an event that has passed and possibly react to it. To demonstrate the difference between both terms, imagine an isolated short crash of a cymbal. Performers are not listening to the event, but have already heard it; they have noticed the event and have the potential to react. Whereas if the percussionist plays a sequence of short cymbal crashes, performers can entrain or listen to the cymbal by anticipating each articulation or event and could subsequently synchronize physical movements to play or sing along.

Chapter 1

Charles Ives on the Nature of Experience

“He [Hunt Moon] quite agreed with me that music could ‘proclaim’ any part of the human experience.”

--Charles E. Ives

American composer Charles E. Ives (1874-1954), a progressive businessman from Danbury, Connecticut, disagreed with many traditional practices and beliefs taught in prominent music schools and conservatories—a rebel attitude creating tensions with many prominent musicians throughout his life. Ives, in his writings, condemned numerous musical views, particularly musical rules limiting musical possibilities, and exerted his concern for their stifling affect on musical experiences:

They (the Professors) take these rules for granted, because some Prof[essors] taught them to them. . . . And when you begin to really consider it, you ask, “Why? Why do you say this should never be used—this is [the] right way—this [is] wrong?” . . . I am fully convinced [that], if music be not allowed to grow, if it’s denied the privilege of evolution that all other arts and life have, . . . if it just sticks (as it does today) to one key, one single and easy rhythm, . . .—then music, before many years, cannot be composed . . . for to compose will be but to manufacture

---

conventionalized MUSH—and that’s about what student composers are being taught to do.³

Ives, perhaps inspired by his father, disregarded many traditional practices in his compositions. During his studies at Yale, he inserted unresolved dissonances in one of his student compositions, *At Parting*. According to Ives, Horatio Parker, his music professor, criticized the unresolved dissonances: “There’s no excuse for that—an Eb way up there and stopping [in the key of G major], and the nearest D natural way down two octaves.”⁴ Ives recalled his father, George Ives, disagreeing with Parker’s remarks and giving him the following advice:

Tell Parker that every dissonance doesn’t have to resolve, if it doesn’t happen to feel like it, any more than every horse should have to have its tail bobbed just because it’s the prevailing fashion.⁵

Charles Ives, despite his passion for music, never committed to a career as a composer or performer. He nevertheless continued to compose, allowing his compositional techniques to naturally develop away from common traditions.

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⁴ Ives, *Memos*, 116. Editorial insertions by John Kirkpatrick. The quote is Ives’s recollection of a conversation with Parker. Kirkpatrick points out in fn 3 that this Eb occurs in m. 17 of *At Parting*.
⁵ George Ives quoted by Charles Ives in *Memos*, 116.
The rift between Ives and canonical traditions is partially rooted in the composer’s belief that human and musical experiences are synonymous: “A natural procedure in a piece of music . . . may have something in common [with]—I won’t say analogous to—a walk up a mountain.” Ives intentionally sought to capture these connections through his music—a feat that he felt could not be articulated through canonical methods. As Ives explains: “. . . in picturing the excitement, sounds and songs across the field and grandstand [at a football game], you could not do it with a nice fugue in C.”

Many of Ives’s compositional techniques were subsequently designed as a reflection of natural processes to parallel the musical experience to the universe. The composer further believed the musical process was capable of being a method, or language, with a natural ability to express and subsequently pass any human experience from one man to another. He describes this effect in a memo regarding a musical experience on a New York subway platform: he noticed that passengers, after hearing a popular tune being played by a hand-organist on the platform, continued to whistle the tune as the train proceeded uptown.

Now what was the tune? It wasn’t a Broadway hit, it wasn’t a musical comedy air, it wasn’t a waltz tune or a dance tune or an opera tune or a classical tune, or a tune that all of them probably knew. It was (only) a refrain of an old Gospel Hymn [“In the Sweet Bye and Bye”] that had stirred many people of past

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6 Ives, Memos, 196. Editorial insertion by John Kirkpatrick.
7 Ives, Memos, 40.
9 Ibid., 5.
generations. . . It wasn’t a tune written to be sold, or written by a professor of music—but by a man who was but giving out an experience.\textsuperscript{10}

The tune described, as Ives comments, was an old gospel hymn designed for congregations to sing, creating a shared communal event—an aesthetic Ives seems to admire. He notes that these memorable tunes do not need to be composed for commercial purposes or by well-versed professors to thrive. He considered every competent man capable of developing and expressing artistic insights, regardless of his acquired knowledge: “Every normal man . . . has, in some degree, creative insight (an unpopular statement) and an interest, desire and ability to express it (another unpopular statement).”\textsuperscript{11} Ives viewed artistic processes as translating these artistic intuitions—the musician’s task being to translate artistic intuitions arising from his/her human experiences through a musical process.\textsuperscript{12}

Ives suggests that these innate artistic intuitions have not yet passed the line between subconsciousness and consciousness, and he asks whether inspirational images or states “have for a dominant part, if not for a source, some actual experience in life or of the social relation.”\textsuperscript{13} He quotes Henry Sturt, who states “. . . we cannot in the strict sense explain the origin of the artistic intuition any more than the origin of any other primary function of our nature.”\textsuperscript{14} Ives

\textsuperscript{10} Ives, \textit{Memos}, 93.
\textsuperscript{12} Ives, \textit{Essays Before a Sonata}, 7.
\textsuperscript{13} Ibid., 6-7.
\textsuperscript{14} Ibid., 7.
even advises his readers to avoid the futile attempt (“Why try to trace any stream that flows through the garden of consciousness . . .?”).\textsuperscript{15}

The initiating or stifling of a person’s innate artistic abilities, according to Ives, depends on encouragement, which he describes as “a sense of something akin to unprejudiced and intelligent examination.”\textsuperscript{16} He considered the encouragement and sharing of a person’s artistic insight a universal value that helps “round out the substance of the soul.”\textsuperscript{17} This encouragement, Ives warns, is not found as a “direct encouragement,” which he describes as an elaborate system of contests and prizes created by others as a method to stimulate interest: “Possibly, the more our composer accepts from his patrons . . . the less he will accept \textit{from himself}.”\textsuperscript{18} Ives instead views encouragement as a natural internal process influencing both artistic processes and human experiences. He explains that encouragement can be found in things promoting a balance, or sturdiness, between spiritual life and the ordinary business of life. He humorously advises that an artist may therefore benefit more from a month in a “Kansas wheat field” than three years of study in Rome.\textsuperscript{19}

The connection between art and human experience is a primary topic in many of Ives’s writings. In his \textit{Essays Before a Sonata}, he disagrees with Henry Sturt, author of \textit{The Separateness of Art}, who believed that “art lies outside the vital needs of our existence, and therefore must always be an episode”—a view that considers the artistic process to be merely an occurrence and an unessential part of the human experience.\textsuperscript{20} Nor does Ives agree with Henry

\footnotesize
\begin{itemize}
\item \textsuperscript{15} Ibid., 7.
\item \textsuperscript{16} Ives, “Postface to 114 Songs,” 126.
\item \textsuperscript{17} Ibid., 126.
\item \textsuperscript{18} Ibid., 127. Emphasis in original.
\item \textsuperscript{19} Ibid., 127.
\item \textsuperscript{20} Ives, \textit{Essays Before a Sonata}, 4-5, referring to “The Separateness of Art,” the third section of Henry Sturt, “Art and Personality,” in \textit{Personal Idealism; Philosophical Essays by Eight}\end{itemize}
David Thoreau, who asserts that “life is an art,” which considers human experience to be a variation of the artistic process.\textsuperscript{21} Henry Bellamann, an American novelist and friend of Ives, believed that Ives considered musical expression equivalent to human experience: “Whether one accepts this or not as possible musical and workable aesthetics, there it is: the aesthetics of Charles Ives.”\textsuperscript{22}

Although we may only presume that Ives viewed art and human experience as equal lines in counterpoint, we can conclude from the following passage that Ives viewed human experience as an essential part of the artistic process:

\begin{quote}
The fabric of existence weaves itself whole. You can not set an art off in the corner and hope for it to have vitality, reality and substance. There can be nothing “exclusive” about a substantial art. It comes directly out of the heart of experience of life and thinking about life and living life.\textsuperscript{23}
\end{quote}

\textit{Common Criticisms and Extra-Musical Content}

Musical experiences, like any other experience, naturally produce perceptions or values that many subsequently attach to the composer or music itself. Ives was disgruntled by the public’s discussions on determining a composer’s success or the values of musical scores based on how well they conformed to mainstream aesthetics and practices. Accepting that artistic intuitions are unique to each human being, he would have considered the compositional process

\textit{Members of the University of Oxford}, ed. Sturt (London and New York, 1902), 314. Sturt’s sentence is quoted in Howard Boatwright’s note on p. 5.
\textsuperscript{21} Ives, \textit{Essays Before a Sonata}, 5.
\textsuperscript{23} Ibid., 48.
a personal one with the freedom and perhaps necessity to steer clear of popular trends to embrace an individual’s unique voice. Ives explains: “Expression, to a great extent, is a matter of terms, and terms are anyone’s. The meaning of ‘God’ may have a billion interpretations if there be that many souls in the world.”  

Ives believed that any determination of the value or success of a given musical experience is merely a reflection of the person’s own sensibility: “How can there be any bad music? . . . If there is anything bad in it, I put it there—by my implications and limitations.”

Composers frequently express their artistic intuitions through additional means outside the musical process (e.g., program notes and verbal interviews). Ives often affixed programmatic material, whether suggestive titles or notes, to his compositions so that artistic intuitions, translated through the composition’s musical processes, are additionally mirrored in description of an extra-musical experience. Many researchers have stressed the importance of comparing Ives’s musical and extra-musical expressions to gain a better understanding of the composer’s musical language, specifically in recognizing Ives’s “substance” over “manner.”

Ives, however, disagreed with the common understanding of “program music,” a term usually applied to works referencing extra-musical content. His view of the musical process naturally integrates aspects of human experiences in all musical experiences. Ives asks:

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24 Ives, Essays Before a Sonata, 8.
...is not all music program music? Is not pure music, so called, representative in its essence? Is it not program music raised to the nth power, or, rather, reduced to the minus nth power?\textsuperscript{27}

Ives perhaps adopted the term \textit{program} with a simple modification: the addition of the word aesthetic. The term “aesthetic program” was included in the description of his Fourth Symphony assumed to have been dictated by Ives to Bellamann: “The aesthetic program of this work is that of the searching questions of ‘What’ and ‘Why?’ which the spirit of man asks of life.”\textsuperscript{28} Although the composer does not give us a clear definition of “aesthetic program” or provide the term in additional writings, it is clear that the aesthetic program refers to a process, an expression of the artistic intuition, which he realizes in both musical and extra-musical forms.

A possible reason for Ives’s translation of aesthetic programs into both musical compositions and written programs is suggested by the revision of two of his orchestral pieces. He composed a set of “Two Contemplations” for chamber orchestra in 1906. He explains in a performance note that the original titles of the compositions were: I. “A Contemplation of a Serious Matter” or “The Unanswered Perennial Question” and II. “A Contemplation of Nothing Serious” or “Central Park in the Dark ‘in the Good Old Summertime.’”\textsuperscript{29} Most audiences today simply refer to them as \textit{The Unanswered Question} and \textit{Central Park in the Dark}.

\textsuperscript{27} Ives, \textit{Essays Before a Sonata}, 4.
Ives’s wife perhaps explains the inclusion of a second title. Harmony Ives remembers her husband showing her the two compositions—a rare occasion since he seldom discussed his compositions with her. She noted, “he fixed it [the paired compositions] so I could understand it somehow.” It is reasonable to suggest, therefore, that Ives may have changed the titles and included a written program to place the aesthetic program into another accessible form for listeners.

Connections between extra-musical and musical materials often point to common experiences expressed in both mediums—an expected correlation assuming that the same artistic intuition is being translated in both forms. As we address the nature of experience in Ives’s compositions, it is essential to look at both mediums in order to extract a composite experience leading us individually closer to Ives’s aesthetic program. Furthermore, to single out each Ives composition containing extra-musical content according to the composer’s writings would be unnecessary (if not a disservice to the composer himself). Ives, recognizing the necessity of human experience in the musical process, viewed all music as “program” music.

Ives’s Observations

In his Memos, Ives documents several observations that influenced his musical ideas. Many of these written observations point to a common theme of juxtaposition. For example, Ives discusses his inspiration for Over the Pavements, a scherzo for chamber orchestra written and edited between 1910 and 1927. In this description, Ives describes a human experience, hearing the bustle of morning traffic, in musical terms:

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30 Ives, Memos, 277.
In the early morning, the sounds of people going to and fro, all different steps, and sometimes all the same—the horses, fast trot, canter, sometimes slowing up into a walk (few if any autos in those days)—an occasional trolley throwing all rhythm out (footsteps, horse and man)—then back again. I was struck with how many different and changing kinds of beats, time, rhythms, etc. went on together—but quite naturally, or at least not unnaturally when you got used to it—and it struck me often [how] limited, static, and unnatural, almost weak-headed (at least in the one-syllable mental state), the time and rhythm (so called) in music had been: . . .

Ives’s description identifies an array of sound-producing entities—people, trolleys, and horses. He sometimes characterizes each entity with distinctive temporal processes such as rhythms and tempi. The horse, for example, begins with a fast trot before slowing to a canter, then continuing even slower to a walk—a temporal process equivalent to rhythmic augmentation or a long ritardando. The temporal streams exhibited by each entity overlap, creating a juxtaposition of “different and changing kinds of beats, time, rhythms, etc.”

The layering of temporal processes is additionally echoed in other observations. Ives describes an experience inspiring the middle section for “Washington’s Birthday” as a local dance gathering, or a “barn dance,” where multiple dances in different tempos play simultaneously:

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32 Ives, Memos, 62.
As I remember some of these dances as a boy, and also from father’s description of some of the old dancing and fiddle playing, there was more variety of tempo than in the present-day dances. In some parts of the hall a group would be dancing a polka, while in another a waltz, with perhaps a quadrille or lancers going on in the middle. Some of the players in the band would, in an impromptu way, pick up the polka, and some with the waltz or march. . . Sometimes the change in tempo and mixed rhythms would be caused by a fiddler who, after playing three or four hours steadily, was getting a little sleepy—or by another player who had been seated too near the hard cider barrel. Whatever the reason for these changing and sometimes simultaneous playings of different things, I remember distinctly catching a kind of music that was natural and interesting, and which was decidedly missed when everybody came down “blimp” on the same beat again.33

Ives’s interest in juxtaposition, especially in regards to musical time, is additionally traced to a childhood memory. He recalls his friend, Fred Sanford, playing a drum outside the parlor windows while Fred’s sisters practiced piano indoors. Ives remembers the sisters calling out, “‘You [Fred] put us all out, you’re out of time’—Freddy said, ‘You put me all out, you’re all out of time.’” 34 Ives remembers his father retelling the story and feeling that the incident showed “Freddy’s independence.” Ives’s subsequent remark, “They are all out of step but Jim”, is

33 Ibid., 97.
34 Ibid., 43.
possibly a reference to the popular World War I song by Irving Berlin, “They Were All Out of Step but Jim.” Berlin’s song depicts a soldier’s parents gloating to their friends about their son marching in a parade.

Ives’s account, while revisiting juxtaposition, additionally highlights the effects of aesthetic choices and their ability to alter perceptions, particularly when dealing with musical time. Choosing between independent temporal processes potentially places the one not chosen “out of time,” even though it too could be held as the primary process—a topic to be discussed later.

Ives, in many of his compositions including “Washington’s Birthday,” juxtaposes musical materials in a compositional technique commonly described as musical collage. J. Peter Burkholder, an oft-cited Ives scholar, generally defines musical collage as being “a juxtaposition of multiple quotations, styles or textures so that each element maintains its individuality and the elements are perceived as excerpted from many sources and arranged together, rather than sharing common origins.”

Catherine Losada further identifies disjunction as the underlying aesthetic of musical collage, whether the disjunction lies within the pitch or temporal dimensions. She recognizes numerous musical collages by Ives, including “Washington’s Birthday” and “Putnam’s Camp.” Many of Ives’s compositions containing disjunction or juxtaposed materials, however, are not labeled musical collages since these juxtapositions are episodic occurrences (i.e. *Central Park in the Dark* and *The Unanswered Question*).

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36 Cristina Catherine Losada, “A Theoretical Model for the Analysis of Collage in Music derived from selected works by Berio, Zimmermann, and Rochberg” (Ph.D. diss., City University of New York, 2004), 9, 38.
Both authors nevertheless highlight Ives’s tendency to present musical materials as seemingly independent through juxtaposition. Many authors unfortunately have limited this technique in Ives’s music to the musical surface, noting juxtapositions in pitch and rhythm. The following chapters will outline the possibility for another level of juxtaposition, one involving a person’s sensing and unfolding of musical time, to unveil deeper questions concerning musical experiences and many philosophical ideas held by the Transcendental movement in literature.
Chapter 2

Ives’s Views and Approaches to Musical Time

“Rhythm is a thing perhaps more to be felt than tones are. To feel several rhythms together and hear them as such is not as difficult as it is for one man to play them.”¹

—Charles E. Ives

The previous chapter highlights juxtaposition as a prominent theme in Ives’s descriptions of human experiences and events that shaped his compositions. This chapter presents musical excerpts from multiple Ives’s compositions to explore these layerings and their potential for juxtapositions in listening and performance experiences.

Over the Pavements

Over the Pavements, as introduced in the previous chapter, was inspired by Ives’s observations of early morning traffic. His written program describes multiple entities—such as people, horses, and trolleys—and gives the impression that each entity exhibits a unique temporal process. He refrains from assigning specific extra-musical entities to musical personnel in Over the Pavements, although his later compositions occasionally include direct references (such as linking “night sounds” with the string orchestra in Central Park in the Dark). Without Ives’s extra-musical designations, we will limit our discussion of entities to the instrumentalists: piccolo, B-flat clarinet, bassoon (or saxophone), B-flat trumpet, three trombones, percussion.

¹ Ives, Memos, 123.
(cymbal and drum), and piano. Measures 61 and 62, shown in Example 2.1, contain one of the few tutti passages in the piece and will be used for a brief analysis.

![Example 2.1. Over the Pavements, mm. 61-62. © 1954 by Peer International Corporation. International Copyright Secured. Reprinted by permission.]

The excerpt contains three time signatures, $\frac{9}{8}$, $\frac{6}{8}$, and $\frac{4}{4}$. Conductors often conduct the dotted-quarter note level in both bars, as is common in compound meter, to facilitate all three metrical organizations. Conducting at the dotted-quarter note level organizes the first measure into three beats and the second measure into two beats. The instrumentalists, however, mentally project subdivided accents between each conducted pulse to execute their rhythms. The piano left hand and piccolo, for example, project two subdivisions between each pulse to execute their rhythms comprised of dotted-eighth notes—an experience similar to subdividing quarter-notes into eighth-notes. The clarinetist projects four subdivisions between pulses to execute rhythms
comprised of dotted-sixteenth notes—an experience similar to subdividing quarter-notes into sixteenths. The remaining instrumentalists project three subdivisions, as is common in a compound meter. These patterns, which coincide at every dotted-quarter note, reveal three temporal experiences or processes occurring between each conducted pulse.

Ives furthermore groups these subdivisions with accents that rarely align with the conducted pulse. The clarinetist accentuates every fifth note, suggesting an instrumentalist playing “in five.” Beginning on the second eighth note in the first measure, the piano right hand, trumpet, and trombones accentuate every quarter note value, giving the impression of a simple meter or instrumentalists playing “in two.” The bassoon provides a similar impression with accents on every half note value. The bassoon’s accents however are offset with the previous group by an eighth note and occur at larger durations, giving impression that the bassoonist is moving at a slower speed. In the first measure, the piano left hand accentuates every third note—a pattern of three dotted-eighth notes that is twice as fast as the conductor’s pattern of three dotted-quarter notes.

The time signatures in many of Ives’s scores are sometimes impractical for performers. In Example 2.2, the time signature for m. 59 and 60 is $\frac{8}{8}$, which only assists the trumpet player who is not engaged in a multiplet (triplet, quintuplet, etc.). The conductor therefore would most likely conduct every fifth eighth-note to accommodate the other players.
We can easily divide the players in this example into three groups according to their assigned rhythm or multiplet. The first group—consisting of piccolo, clarinet (first measure), bassoon and piano left hand—encounters one triplet, or three subdivisions per bar. The second group—consisting of the trombones, percussion, and piano right hand—must project three triplets over two bars for a total of nine subdivisions. The third group—the trumpet player and perhaps the conductor—feels five subdivisions, as is common in $\frac{3}{8}$. All three groups in this excerpt create contrasting temporal processes to perform their rhythms. Ives additionally notes in the score that the piano’s right hand, a member of the second group, must be prominent in order to prepare the metrical modulation into measure 61. Similar instances involving the juxtaposition of temporal processes are found throughout Ives’s late chamber and orchestral works including the following examples from *In Re Con Moto Et Al* and *The Fourth of July*: 

Example 2.3. *In Re Con Moto Et Al*, m. 57. © 1968 by Peer International Corporation. International Copyright Secured. Reprinted by permission.

These examples are commonly labeled as cross-rhythms or “polyrhythmic,” which is generally defined as the presence of two or more separate rhythmic streams in the musical texture perceived as evenly spaced and whose interorganizational periodicities, the arrangement between both rhythmic streams, are non-integer multiples. In polyrhythmic performance, the performers’ projected subdivisions, if retaining the same durational unit (such as an eighth note), differ in quantity and speed. A performer playing in three, for example, would be processing phenomenal or felt articulations faster than the performer playing in two. The nonisochronous interactions or juxtapositions perceived at the musical surface in polyrhythmic events are therefore symptomatic of an underlying juxtaposition of temporal processes.

Holding Your Own

Ives, in his Memos, describes a systematic exercise called Holding Your Own. The exercise outlines two musical materials, a chromatic and diatonic scale, played simultaneously by two performers “in different time, etc.” Ives’s Holding Your Own exercise highlights his use of juxtapositions of temporal processes as a compositional technique to create a desired effect. Ives reveals that this technique is used in the Trio section (m. 22-28) of his Scherzo for String Quartet.

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3 Ives, *Memos*, 34.
4 Ibid., 34.
Example 2.5. Trio from Scherzo (“Holding Your Own”) for string quartet, mm. 22-26. Tempo marking “Slowly 66 = \( \frac{\text{mf}}{4} \)” © 1958 by Peer International Corporation. International Copyright Secured. Reprinted by permission.

Philip Lambert, in his book *The Music of Charles Ives*, describes the passage as a double canon consisting of descending and ascending chromatic and C-major scales. The rhythm, he explains, changes in each individual line: the upper voices accelerando separately while the lower voices ritardando in a similar manner.\(^5\) Although the composite view may contain canonic-like effects due to the similar pitch class content, Ives’s writings reveal that the desired effect, in his *Holding your Own* technique, is to sense each player “in different time” or each player exerting his or her own temporal process.

The *Holding Your Own* technique is echoed in many other Ives compositions. Ives, in his description of the *Fourth of July* in his *Memos*, instructs performers to play their runs individually, not necessarily adhering to notes or rhythms, and hold until the rest of the ensemble reaches them—Example 2.6 provides an excerpt where these instructions are applicable. Ives explains that the resulting sound, a composite of individual strains, was the aesthetic idea behind these festive explosions:

Each part in these periods made (or at least I tried to have them make) a strain of musical sense by themselves—that is, when played by themselves—each part of the general explosion of noise having its own natural beginning and natural end. It is not absolutely essential that these notes or rhythms be kept to literally. It would be very difficult to have it done this way . . . It is the underlying gist that is really the important thing. If one player should get to the end of an explosion-period first, he steadily holds until everybody reaches him, and the conductor wipes them out all together.⁶

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⁶ Ives, *Memos*, 105-6.
Ives describes another similar instance beginning in m. 50 in his orchestration of *Majority* or *The Masses*. He explains that the underlying design of the section was to have each orchestral part “in different rythm [sic] group complete the 12 notes (each on a different system & end & hold last (of 12) . . . as finding its star.”

Ives often expands the *Holding Your Own* technique from two temporal streams to two or more separate ensembles. For example, the solo violin, beginning in m. 14 in the *Fourth of July*, continues its meter and tempo while the rest of the orchestra fluctuates between different meters and tempi—some conductors prefer the solo violinist to mimic the orchestra’s tempo fluctuations.


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The solo violinist remains independent from the rest of the orchestra until the conductor signals rehearsal K (m. 64), when the solo violinist stops playing. The solo violinist is able to take a “hiatus” during his/her fifty-six bars of rest. The solo violinist listens for the orchestra’s fermata in measure 120 (shown in Example 2.6), which is easily recognized by the fortississimo (ffff), to re-enter and play and the final two bars of the piece. Orchestrations of the Holding Your Own technique with tempo variations resulting in undeterminable ratios between temporal streams, such as the solo violinist in the Fourth of July, require all players to finish with a hiatus or hold at the end of their individual runs in order to be cut off or be signaled to continue on. We will explore many orchestrations of the Holding Your Own technique in the later analyses. For now, we will move to the performance practice of polyrhythms to highlight Ives’s preferred approaches and methods to performing juxtapositions of temporal processes.

Juxtapositions of Temporal Processes

The performer’s approach to polyrhythms has been a common topic for scientific studies. When asked to perform multiple rhythmic streams, do performers give preference to one rhythmic stream over another? Or formulate a composite mono-rhythmic stream from both? Considering the multiple ways performers produce polyrhythms, which technique produces the most accurate rhythms?

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Ives provides his opinion on the matter by describing a set of performance exercises designed to aid a performer’s learning of polyrhythms. Ives instructs the performer to think of measures in multiple subdivisions in order to naturally feel for the different rhythms:

I have with much practice been able to keep five, and even six, rhythms going in my mind at once, so that I can hear each one naturally by leaning toward it, changing the ear in each measure—

and I think this is the more natural way of hearing and learning the use of and feeling for rhythms, than by writing them and playing from them on paper, which shows the exact position of each note in relation to each other, in the eye. The way I did it was to take, for instance, in the left hand a 5— with the left foot, beat a 2— with the right foot, beat a 3— with the right hand, play an 11— and sing a 7. Start with two, gradually add the others — perhaps to begin with, have a slow metronome with a bell play the one-beat, and think of the [measure] as a 2, then a 3, then a 5, then a 7, then an 11— ([or] using several metronomes with bells, clicks, to get them going in the mind). . . . Various other rhythms can be held in the mind in this way, and after a while they become as natural as it is for Toscanini to beat down-left-right-up as evenly as a metronome for two hours steadily. . .

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9 The musically notated version of this set of exercises has never been found. Ives, Memos, 125 (fn2).
10 Ives, Memos, 125.
Example 2.8 is a notated version of Ives’s performance practice exercise. Although the manuscript has not been found, those familiar with Ives’s orchestral scores may recognize the similarities between the exercise’s design and temporal layering found in many of his works (such as those in Examples 2.9 and 2.10).

Example 2.8. Ives’s Performance Exercise written out by author.

Example 2.9. *In Re Con Moto Et Al*, m. 1. © 1968 by Peer International Corporation. International Copyright Secured. Reprinted by permission.
Ives describes the measures in his performance exercise as increasingly shorter durations marked by different metronome bells. The performer is able to feel and produce rhythms at shorter durations while remaining oriented. Ives further instructs the performer to hear each rhythm as it is added to the texture and learn its relationship to other rhythms by attuning the ear to each rhythmic stream.

Psychologists Beauvillain and Fraisse refer to this type of rhythmic organization as *intraorganization*. Performers, when entraining to the distance of successive intervals along one pulse stream, are subsequently superimposing two monorhythmic lines. In contrast, performers practicing *interorganization* entrain to the intervals between successive taps as they would in a single monorhythmic line. Beauvillain and Fraisse’s study, “On the Temporal Control of Polyrhythmic Performance,” concludes that subjects practicing intraorganization produce equal interval durations on the 2, 3, and 4 rhythmic lines in 2:3 and 3:4 polyrhythms. Subjects

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practicing *interorganization* however were unable to produce equal durations in 2:3 or 3:4 polyrhythms because of the slower tempo required for *interorganization*.12

Jagacinski, Peper and Beek broadly summarize research on polyrhythmic performance into two classes of models—timekeeper models and nonlinear dynamical models—that have similar characteristics as the two organizational methods found by Beauvillain and Fraisse. Timekeeper models focus upon “covariance among time intervals”—interorganization—whereas nonlinear dynamical models place concentration on “pattern (in)stability and the spatiotemporal properties of oscillating limbs”—intraorganization.13

Ives’s preference for an intraorganizational approach to polyrhythms is interesting since this method retains the individuality of each rhythmic stream without reorganizing them into one rhythmic line. Ives considered each limb or instrument capable of performing each rhythm in its own meter—suggesting that Ives considered polymeter a natural condition of polyrhythm. A similar description is echoed in the Peper, Beck and Wieringen study that defines polyrhythm as a multifrequency task requiring limbs to move at different frequency ratios “that cannot be simplified into ratios with one as a numerator or denominator (e.g. 2:3, 3:5, 3:5, and 4:11).”14 Ives applies this concept of polyrhythms, the presence of multiple speeds or frequencies, in piano performance but states that it is less effective to hear each hand in a different meter since the tonal sounds are so much the same.15 Ives therefore proposes that different-sounding groups

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12 Ibid., 498.
15 Ives, *Memos*, 125.
should play each meter to create a composite image that is clearer and more defined to the
listener—a musical formula that Ives believed will produce an appreciated experience.\textsuperscript{16}

To have polyrhythm rise to its full strength, there must be one or a
group of players to each rhythm—(by rhythm here I mean
something which is only a part of rhythm in its bigger sense—
various times of beats to one unit). And each group, if possible,
should be of different tonal sounds . . ., each to each meter.\textsuperscript{17}

The listener, if he tries hard enough, will get the composite effect
that’s wanted, while each player concentrates on his particular
meter, hearing the others as secondary sounds, at least while
practising them.\textsuperscript{18}

Ives explains that his performance exercise, which emphasizes an intraorganizational
approach, enables performers to learn rhythms naturally through experience, rather than
analyzing relationships visually on paper. Ives, being a performer, was aware of the relentlessly
changing musical experience that unfolds through musical time. He acknowledges perpetual
fluctuations, even and uneven, granted to performers even when performers adhere to notated

\textsuperscript{16} Ibid., 125.
\textsuperscript{17} Ibid., 124.
\textsuperscript{18} Ibid., 125.
rhythms. He furthermore recognizes instances where performers are unlikely to perform designated rhythms, such as Example 2.6.

To demonstrate common experiences where intraorganization is essential, let’s look at the Universe Symphony’s “pulse” found in Example 2.10. The “pulse,” comprised of multiple percussion parts and possibly high winds, has been referred to with a series of names both by the composer and researchers: “pulse of the universe’s life beat,” “B.U.,” “basic unit,” “Prelude #1,” “Pulse of the Cosmos,” “life pulse,” “life pulse prelude.” We simply refer to this material here and in later analyses as the “pulse.”

As evident in the Photostat in Example 2.10, the instrumentalists are given a number that determines their meter and tempo: 1:2:3:4:5:6:7:8:9:10:11:12:13 (this ratio is extended to 31 on f1820, f1825, and f1827). The low bell intones 1, or the “basic unit,” and serves as a reference to the other instrumentalists who must fit in their assigned articulations between bell tones.

The top player (BU 13) in this sketch of the “pulse” must play a series of thirteen articulations, bell tone to bell tone. Thirteen is a prime number, so the rhythms of the other instrumentalists are of no help and there is not an underlying temporal stream that can help the player without dividing the rhythm into sections. The player must therefore anticipate the upcoming bell tone and allow the articulations to naturally create a 13:1 ratio. The players know when the speed of the articulations is correct when they eclipse their first note of each series with

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19 In the margins of a page for his Universe Symphony, he wrote: “The Rhythms are to be kept . . . but the phrasing even or uneven (may constantly change . . .” Kirkpatrick, Catalogue, 26.
20 Ives, Memos, 105-6.
every bell tone. If the two articulations do not eclipse, players can easily adjust the speed of their articulations mid-sequence. The players know how to adjust the speed, whether faster or slower, if they perceive that their first articulation of each new series occurs before or after the bell tone.

Ives’s insights concerning temporal processes reveal that the composer considered the temporal process to be naturally subject to experience. The players in the previous example demonstrate that their temporal processes depend upon their anticipations of bell tones and that these anticipations continually adjust according to perceived eclipses.

Edward T. Cone, in his study *Musical Form and Musical Performance*, presents a metaphor for musical motion that is very similar in experience. Cone’s metaphor is a thrown ball, which consists of three parts: “the throw, the transit, and the catch.” He explains that a typical musical phrase consists of an initial downbeat (\(/\)), a period of motion (\(\rightarrow\)), and a point of arrival marked by a cadential down beat (\(\backslash\)). BU 13’s performance experience is similar if we abstract and input these three points into the performance experience. The player hears the initiation of the gesture or measure (\(/\)) marked by the first bell tone. The player anticipates the duration or period of motion (\(\rightarrow\)) to the next bell tone. The player knows if the anticipation was correct if the first note of each series eclipses or “catches” the cadential down beat (\(\backslash\)) signaled by the second bell tone. I must also note that the cadential downbeat in this experience additionally serves as the initial downbeat for the subsequent phrase—some analyses use the symbol (\(/\)) as well as (\(\backslash\)), to mark both. If the cadential point or “ball” arrives too early or short, they know to anticipate a shorter duration or throw. If the cadential point arrives too late, they will anticipate a longer duration or throw.

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23 Hasty, *Meter as Rhythm*, 104.
Assimilating games of catch with the passing of musical time is appropriate given Ives’s passionate interests in sports. Playing catch was a pastime Ives regularly engaged in and promoted. Bigelow Ives, one of Ives’s nephews, recalled his uncle insisting on a game of catch at least once a day.24 “Uncle Charlie would always take time out from his composing in the music room to come out and play ball with us.”25 Ives, an avid athlete and captain of many baseball and football teams, often paralleled sporting experiences in music (e.g. *All the Way Around and Back*)—Timothy A. Johnson’s book *Baseball and the Music of Charles Ives* discusses the game of baseball and its affects on Ives’s music and artistic development.26

Ives expressed another way anticipations in the temporal process could be altered. He describes syncopated rhythms and their ability to “suggest” other combinations of rhythmic patterns by alternating beat stresses (anacrusis, crasis, and metacrusis):

> If one gets the feeling, or shall I say the bad habit, of these shifts and lilting accents, it seems to offer other basic things not used now . . . For instance, if, in a few measures in a 2/4 time, the second beat is not struck and the 16th-note before the second beat is accented, other combinations of after-beats and beats and minus-beats etc. suggest themselves.27

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25 Ibid., 81.
27 Ives, *Memos*, 57.
Christopher Hasty explores a similar view in his book *Meter as Rhythm*, which presents a theory of projection that unifies the traditionally opposed concepts of meter and rhythm. Hasty, adopting Cone’s “thrown ball” metaphor, explains that we continually project future non-durational points, such as pulses or beats, based on our experiences and perceptions of previous points. This process, commonly referred to as meter, unfolds time based on the performer or listener’s experience.

Hasty confronts the common problem of conceiving rhythm as a separate process from meter. He describes rhythms as durations that must be articulated: “All the things we call rhythmic are articulated; what is, in fact, utterly homogenous or lacking internal distinctions cannot be rhythmic.” Rhythms therefore have two points, a beginning and an ending, which prevents rhythms from wholly existing in the present since they require a previous or potential point *in time*. Hasty, in agreement with Jean Piaget, explains that structures, as something fully determined, are removed from the temporal process. Rhythm, he concludes, is something experienced or observed as a result of projection and not an independent or opposing process.

Ives addresses the relationship between rhythm and the perception of motion in a similar manner. He describes rhythms as durations emerging from accents or articulations. When comparing two rhythmic streams, Ives often refers to one rhythm as having “off-accents,” meaning that the articulations marking successive durations along one rhythmic stream are generally non-isochronous to another. The length of these durations directly determines the perceived tempo. For example, Ives, in his explanation of rhythmic techniques in *Putnam’s*

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29 Ibid., 67.
30 Ibid., 68.
31 Ives, *Memos*, 38 and 139.
32 Ibid., 38.
Camp, Overture and March “1776,” and Country Band March, describes two bands marching at different speeds or tempos as a result of these non-isochronous rhythms:

The two rhythms going together (in the piano-drum part) are nothing but a beat or pulse on the first of [each] four 16\textsuperscript{th}-notes, and one on the first of [each] three 16\textsuperscript{th}-notes. Say, if a band is marching at 120= [quarter note]= [four sixteenth notes with accent on first], the next fastest marching (keeping the sixteenth-note unit the same) will be stepping to three 16ths. . ., and if two bands feel like marching on these accents, . . . \footnote{Ibid., 139.}

Ives further notes that it is unnecessary to articulate all of the notated sixteenth notes. He instead prefers the occasional addition and omission of sixteenths in various phrases in order to provide variants on the same rhythm.\footnote{Ibid., 139.} For example, if the top rhythm were to be omitted all together, Ives notates the bottom band as exhibiting the following rhythm in the third measure:

\begin{align*}
| & \cdot \cdot \cdot & \cdot \cdot \cdot & \cdot \cdot \cdot & \cdot \cdot \cdot \\
1 & 2 & 3 & 4
\end{align*}
Each articulation is anticipated at every third sixteenth-note, meaning that the projected durations, delineated by each articulation, are expected to be similar. The articulated durations themselves, however, vary between sixteenth-notes and eighth-notes. To summarize, the projected durations or felt anticipations, notated with arrows below the staff, are similar while the articulated or heard durations, represented with straight lines above the staff, are varied:

The projected durations created by the bottom band—a total of three eighth notes—is shorter and perceived as faster than the top band whose projected durations are four eighth notes. Together, the two rhythms create two temporal processes or bands moving at different speeds.

Projections, as a central concept in Hasty’s theory, are continually modified during musical performances based on the performers’ experiences and perceptions. These projections allow temporal processes to be flexible and adjust as necessary. Performers, through extensive training, develop these anticipations and the necessary skills to fine-tune temporal processes to provide seamless and nuanced performances. Temporal processes become intransigent or locked in when performers are unable or unwilling to adjust —giving the impression that the temporal process is inflexible or fixed.

Ives did not care for musical designs or performances that were perceived as fixed or comprised of “even beats and accents.” He expresses in his writings distaste for performers

[35] Ibid., 57, 100 and 140.

39
and “permanent wave conductors” who forced music into evenly spaced “compartments.”

Ives asks: “Why should music be so even, so grooved in?—so smooth [that] our ears must become like unto feather beds . . .”

Ives continually criticized composers and performers—with emphasis on the well-known ones—for their restricted use and sense of time. The following passage recounts Ives’s impressions after attending a Carnegie Hall concert:

I remember . . . coming home with a vague but strong feeling that even the best music we know, Beethoven, Bach, and Brahms . . . was too cooped up—more so than nature intended it should be, or at least needed to be—. . . in its time, or rather its rhythms and spaces . . . all up and down even little compartments, over and over—2 or 3 (prime numbers and their multiples), all so even and nice all the time—producing some sense of weakness, even in the great.

Ives notes that this concert was lead by a “nice permanent wave” conductor conducting a beat pattern of four. Conductors are tasked, generally speaking, with a visual representation of the tactus, a pulse stream that is usually conducted and with which one most naturally coordinates physical movements. Ives seems disgruntled when performers develop temporal streams by conforming pulses or beats into uniform durations and patterns—a process he

36 Ibid., 100.
37 Ibid., 101.
38 Ibid., 100. Kirkpatrick dates the concert in fn8 to the Boston Symphony at Carnegie Hall on February 22, 1913.
considers unnatural. In recalling his first encounter with Charles Ives, Arthur Hall, the husband of Ives’s niece, affirms Ives’s aversion to homogeneous temporal streams:

He [Charles Ives] said nothing, but he came and grabbed me by the elbow and led me into the living room over to the mantelpiece and pointed at a little French clock on the sill above the fireplace. Then he made many gestures imitating the stiff movements of the hands of this little clock. . . He went back through the same mechanical gestures again, and then said to me “That’s like Toscanini conducting the *Eroica Symphony.*”

Ives directly addresses his preference for flexible temporal processes in his *Memos.* Performers, according to Ives, are given a greater range of expression, perhaps one that is truer to the individual, by not playing “literally:”

And some ask, “What do you mean by not to play literally?”—etc. Several reasons . . . . One [reason is] that [it’s] better not to—or [you] don’t have to (which is the best [reason]) play everything and piece and measure the same every time. . . In fact, these notes, marks, and near pictures of sounds etc. are in a kind of way a platform for the player to make his own speeches on.

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40 Perlis, *Charles Ives Remembered*, 91.
41 Ives, *Memos*, 191.
Ives even abandons barlines and time signatures either briefly or for the entire duration of a piece—such instances are found in the *Concord Sonata* and selections from the *114 Songs*. Henry and Sidney Cowell suggest that these works exhibit “a prose concept of rhythm,” meaning that metrical structures or different stresses “may be given by different performers, all of them right.” 42 Eric Chernov also explains that if Ives inserted barlines the performer might feel obligated “to adhere to a more traditional conception of metric underpinning.” 43 Elliott Carter acknowledges Ives’s reservations about musical notation. In his article “The Case of Mr. Ives,” Carter shares an inscription Ives personally included in his copy of the *Concord Sonata*. The inscription confirms that Ives was wary of the ways musical notations affect performance practices:

> Then we asked why the notation of the *Concord Sonata* was so vague, why everytime he played it, he did something different, sometimes changing the harmonies, the dynamic scheme, the degree of dissonance, the pace... He [Ives] said that he intended to give only a general indication to the pianist who should, in his turn, recreate the work for himself. In a footnote to *Hawthorne* he writes: “If the score itself, the preface, or an interest in Hawthorne suggest nothing, marks (of tempo, expression, etc.) will only make things worse.” 44

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Ives does not discard metrical structure but rather hands it over to the performers who can continually develop their own interpretations and change the metrical process accordingly. As Christopher Bruhn summarizes: “. . . [The] determination of metric organization is almost entirely left up to the performer, and the results could vary depending upon one’s point of view at any given moment.”

A letter from Ives to Kirkpatrick concerning the *Concord Sonata* describes this handing over of the metrical structure to the performer:

> Do whatever seems natural or best to you, though not necessarily the same way each time. The music, in its playing as well as in its substance, should have some of Emerson’s freedom in action and thought—of the explorer “taking the ultimate of today as the first of tomorrow’s new series.”

Christopher Bruhn explains that Ives’s advice leaves many elements of the composition “up to Kirkpatrick to establish some sense of the truth of the work, to understand what the work means to him, and to establish a belief in how the work should go.” Kirkpatrick, heeding Ives’s advice, inserted barlines in the *Concord Sonata* to help facilitate his performance of the work:

> In order to learn *Concord*, I copied out the whole thing and made a kind of metrical interpretation of it, just as an aid to memory. I

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45 Christopher Edwin Bruhn, “Ives’s Multiverse: The Concord Sonata as American Cosmology” (Ph.D. diss., City University of New York, 2006), 137.
46 Ives, *Memos*, 200-201.
47 Bruhn, “Ives’s Multiverse,” 176.
don’t have the kind of musical intelligence that could swim around in this kind of prose rhythm with no bar lines at all. I had to explain to myself very clearly just where all the main first beats were—not that I was going to emphasize them like a ton of bricks—but so that I could act freely in respect to them. Ives was very nonplussed one time when I told him about my working copy of *Concord*, and having to make a metrical analysis of the whole thing in order to memorize it. I told him that, in regard to that aspect of the work, I was really Rollo. He didn’t say anything—he looked puzzled.48

Kirkpatrick however continually changed and/or removed barlines as a result of his evolving conceptions of the work’s metrical structure.49 It is interesting to note that these barlines continued to shift from smaller to larger, meaning Kirkpatrick’s superimposed measures slowly accommodated more pulses or articulations over time.50 These shifting and continually evolving metrical structures are symptomatic of the pragmatic process experienced between performer and composition; the performer, when presented with musical choices, continuously makes decisions based on the “constant flux and flow of experience.”51

Ives’s deferring of the temporal process to musical participants therefore guarantees a continuously changing and unique experience at every performance. This reality of musical experience is an aesthetic that Ives admired. Christine Loring, a secretary for Ives, recalls: “… he

49 Bruhn, “Ives’s Multiverse,” 137.
50 John Kirkpatrick Papers, Box 75, Folder 718. See also Bruhn, “Ives’s Multiverse,” 199.
51 Bruhn, “Ives’s Multiverse,” 176.
said something about the fact that no two performers see the same thing alike or feel the same thing alike.” Ives even acknowledges this desired aesthetic in his own practice of the “Emerson” movement in the *Concord Sonata*:

> Some of the four transcriptions as I play them today . . . are changed considerably . . . and again I find that I don’t play or feel like playing this music even now in the same way each time. . . . I don’t know as I ever shall write them out, as it may take away the daily pleasure of playing this music and seeing it grow and feeling that it is not finished.  

So far we have identified three common views held between Charles Ives and Christopher Hasty. Both agree that: (1) rhythms are defined by articulations such as accents or points, (2) these articulations are projected or “suggested” according to prior experience, and (3) experience is a fundamental component in the unfolding of temporal processes. Together, these views assert that the temporal process in music is built upon a fundamentally fluid foundation, which continually changes based on experience.

These views directly challenge many common theories on the analysis of musical time that conform music into grid-like structures after the temporal process has already taken place. Hasty acknowledges this common tendency and the problem of overcoming the issue: “In thinking about music it is difficult to avoid representing any concrete instance as if it were a

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stable and essentially pre-formed entity composed of fully determinate and ultimately static objects or relations.”

Fully determined or “fixed” concepts, nevertheless, are included in many commonly accepted definitions and models used in analyzing temporal processes. For example, Fred Lerdahl and Ray Jackendoff define *beat or pulse levels* as a sequence of beats with a fixed interonset interval. Justin London develops temporal diagrams, called N-cycles, idealizing the temporal process into circles and points adhering to well-formedness rules. Hasty however explains that in the temporal process nothing can ever be “fixed.” He instead proposes the term “rhythmic continuity” to acknowledge the perception of parts holding together:

Rhythmic continuity is a “holding together” of parts in transition or in a gradually, temporally unfolding process of becoming parts. In this transitory, fluid process, while it is going on (and unless it is presently going on it is not a process), nothing is ever fixed. In much the same way that we cannot arrest motion, which as a primary symbol of temporal continuity is often conflated with rhythm, we cannot arrest rhythm in an attempt to isolate distinct parts without annihilating rhythm.

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54 Hasty, *Meter as Rhythm*, vii.
57 Hasty, *Meter as Rhythm*, 67.
In response, Hasty’s theory of projection has been criticized for providing a time discrete model. London argues that the metrical representation proposed by Hasty, while attempting to show a time-continuous process, continually moves and changes on a “state by state” basis—ironically dividing the temporal process according to individual positions and interactions.\(^{58}\) However, this common criticism of Hasty’s “state by state” approach is precisely what Ives wanted to implement in his music for aesthetic purposes and is the primary subject for the remaining chapters.

My approach to the analyses in later chapters will therefore align with the methodology outlined in Hasty’s *Meter as Rhythm*. I feel that it is necessary however to point out a slight divergence limiting the effectiveness of Hasty’s methods in analyzing Ives’s compositions. Hasty cautions against the common perception of meter as an extensive hierarchy of continuous pulse streams, since pulses, or “virtual beats,” have the ability to be different amongst all musical participants. He states: “The problem of virtual beats obviously leads to more general issues of interpretation and the question of whose experience is being described in analysis.”\(^{59}\) Hasty consequently limits his analyses to projected beats or points that have the potential to be *heard* in musical experiences.

Pulses or pulse streams, felt accents instead of heard, are important aesthetic elements Ives expected musical participants to encounter in his music. Ives notes on a sketch for his *Universe Symphony* that a musical part could be audibly removed from the experience with the expectation that listeners could infer or continue the musical part mentally: “. . . personally I

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\(^{59}\) Hasty, *Meter as Rhythm*, 130.
wouldn’t have drum part played except at rehearsal listeners ought to be able to keep time fundamentals in mind.”

To reconcile the limitations and expectations set forth by Hasty and Ives, the analyses presented in later chapters are given from a performance perspective to highlight temporal points and streams that have the potential to be heard and/or unheard. Performers, through their individual experiences with Ives’s works, can provide continuous mappings of temporal processes by filtering the infinite array of potential pulses and beats to those that they choose to attend to in performance.

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60 Kirkpatrick, Catalogue, 68.
Chapter 3

“Pictures in Sounds”

“This [‘The Housatonic at Stockbridge’] is to picture the colors one sees, sounds one hears, feelings one has, of a summer day near a wide river [,] the leaves waters mists etc all interweaving in the picture & a hymn singing in church away across the river. . .”

--Charles Ives

Ives refers to many of his compositions as “images” or “pictures,” such as “pictures in music” or “pictures in sounds,” in each work’s written program or in its description in his Memos. These “pictures in sound” include but are not limited to: Calcium Light Night, Central Park in the Dark, Universe Symphony, Second Pianoforte Sonata—“Concord, Mass., 1840-1860,” A Symphony: New England Holidays (“Washington’s Birthday,” “Decoration Day,” “The Fourth of July,” and “Thanksgiving and Forefathers’ Day”), Three Places in New England (“St. Gaudens,” “Putnam's Camp,” and “The Housatonic at Stockbridge”), and Yale-Princeton Football Game.

Ives, furthermore, refers to numerous works as “cartoons” or “take-offs” – titles suggesting animated pictures. Kirkpatrick, in his edition of Ives’s Memos, suggests placing the following compositions under this category: Calcium Light Night, Central Park in the Dark, A Lecture (Tolerance), The See’r or Rube trying to walk 2 to 3, Over the Pavements, Yale-

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Princeton Game, All the Way Around and Back, The General Slocum, Mike Donlin—Johnny Evers, Willy Keeler, and possibly The Unanswered Question and The Pond. Since many of these compositions, such as Central Park in the Dark, can be labeled as both still and moving images, it is unnecessary to divide and label them accordingly. I will therefore refer to all compositions falling under these categories as “pictures in sounds.”

Denise Von Glahn, in her book Sounds of Place, explores the general idea of “pictures in sounds,” which she calls “soundscapes.” She notes similar events and perceptions that connect the works’ historical contexts with their musical processes. Her article “Charles Ives at ‘Christo's Gates’” explores this idea in Ives’s Central Park in the Dark. She remarks that the scene is time- and place-specific with musical materials characteristic of that era: “... the musical sounds that Ives associated with this particular park—rags, marches, the tunes of the day: vernacular musics all of them—expose the location unambiguously as turn-of-the-century America.” The forthcoming chapters in this thesis shift away from Von Glahn’s descriptions of time discrete scenes to the very processes of perceiving and developing cognitive images—activities that take place over time.

Ives regularly implements juxtapositions of temporal processes in his “pictures in sounds.” The previous chapter outlined juxtapositions of temporal processes in four “pictures in sounds”: Over the Pavements, Washington’s Birthday, Fourth of July, and the Universe Symphony. Ives’s Universe Symphony was to be his grandest picture, a work orchestrated for

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2 Ives, Memos, 160.
3 Denise Von Glahn, “Charles Ives at ‘Christo’s Gates,’” Twentieth Century Music 5/2 (September 2008), 157-178.
4 Ibid., 168-169.
several different orchestras “placed about in valleys, on hillsides, and on mountain tops.”\textsuperscript{6} Ives described the work as: “The ‘Universe in Tones’ . . . A striving to present—to contemplate in tones rather than in music as such . . . to paint the creation the mysterious beginnings of all things, known through God to man . . . from the great unknown to the great unknown . . .”\textsuperscript{7}

Although Ives did not complete the work, he left behind a few musical sketches and descriptions in the hope that others would continue the quest. The \textit{Universe Symphony} contains multiple juxtapositions of temporal streams supported by the spatial separation of performers and ensembles—performance features attributing to the work’s infinite array of experiences or “views.”

The layering of temporal processes, commonly found in Ives’s “pictures in sounds,” gained the attention and admiration of a fellow American composer, Elliott Carter. Carter admired Ives’s layering of temporal processes, specifically addressing Ives’s \textit{Holding Your Own} technique, which he refers to as a “take-off technique.” Carter explains that Ives’s “daring ‘take-off’ technique” made his compositions often “resemble ‘realistic’ sound pictures of festive scenes.”\textsuperscript{8}

\textit{Musical Entrainment: A Choice}

Ives was interested in how juxtapositions of temporal processes could affect the listener’s experience. He states: “Right or wrong, things like these [“Pictures in Sounds”] . . . show how one’s mind works. The only value probably of some of these things was that, in

\footnotesize{\textsuperscript{6} As described in Cowell and Cowell, \textit{Charles Ives and His Music}, 201.}
\footnotesize{\textsuperscript{7} Kirkpatrick, \textit{Catalogue}, 27.}
\footnotesize{\textsuperscript{8} Perlis, \textit{Charles Ives Remembered}, 145.}
working these sound-pictures out (or trying to), it gave the ears plenty of new sound experiences . . .

Ives specifically addresses the listening experience in his “Conductors Note” to the Fourth Symphony in describing a listener’s ability to *choose* between musical materials that are spatially separated and juxtaposed. Ives explains that listeners, when given the choice, are free to entrain to musical elements of their choosing. He compares the listener to an observing spectator, noting the similarities in the perceivers’ choices. He explains that both experiences enable perceivers to focus on certain aspects or extract a composite view at will:

[I]n a piece of music which is based, on its rhythmic side, principally on a primary and wider rhythmic phrase and a secondary one of shorter span, played mostly simultaneously—the first by a grand piano in a larger room which opens into a smaller one in which there is an upright piano playing the secondary part—if the listener stands in the larger room about equidistant from both pianos but not in a direct line between them . . . the contrasting rhythms will be more readily felt by the listener than if the pianos are in the same room. . . .

In the illustration described above, the listener may choose which of these two rhythms he wishes to hold in his mind as primal. . . .

As the eye, in looking at a view, may focus on the sky, clouds, or distant outlines, yet sense the color and form of the foreground,

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9 Ives, *Memos*, 64.
and then, by observing the foreground, may sense the distant
outlines and color, so, in some similar way, the listener can choose
to arrange in his mind the relation of the rhythmic, harmonic, and
other material.11

The listener, in Ives’s experiment, is listening to two musical materials that are different
in duration and played by different instruments in separate acoustical spaces. He indicates that
the two materials are played “mostly simultaneously,” suggesting juxtapositions between the
materials’ temporal processes. Ives explains that listeners, when presented with juxtapositions of
temporal processes that are spatially separated, are free to listen to musical elements of their
choosing. The perceiver’s choices in both listening and visual experiences, according to Ives,
allow the perceiver to independently navigate the setting to create his/her own perceptions or
“view” of the event.

American philosopher and psychologist William James (1842-1910) describes attention
in a similar way. James notes that a process such as listening depends on two physiological
processes: “(1) the accommodation or adjustment of the sensory organs, and (2) the anticipatory
preparation from within of the ideational centers concerned with the object to which the attention
is paid.”12 James believed that the attentive process results in an “inward reproduction”—an
individualized conception—of the thing we attend to: “The effort to attend to the marginal region

11 Ibid., 193.
411.
of the picture consists in nothing more or less than the effort to form as clear an idea as is possible of what is there portrayed.”

Recent studies in cognitive psychology, which greatly expand William James’s work on the attentive process, further assist in corroborating Ives’s thoughts on the listener’s experience and the possibility that Ives may have intentionally implemented juxtapositions of temporal processes in his compositions to exploit a person’s innate ability to entrain.

Ives’s notion that the ear and eye perform similar functions had been recognized and accepted early in the nineteenth century. Ulric Neisser (1928-2012), a founding father of cognitive psychology, explains that the ear and eye fundamentally perform the same behavior in the sensorimotor system. Both sensory organs are capable of attuning to objects in order to “focus” or concentrate—although the ear does not require the additional exploratory movements that are customary for the eye. Sensorimotor behavior, which is capable of being exhibited by either sensory organ, enables a person’s sensorimotor system to be readily synchronized to environmental rhythms.

Mari Reiss Jones explains that the interactions between perceiver and perceived events are described through the process of synchronization. A person synchronizes a perceptual rhythm that corresponds to time periods created by successive articulations or onsets: “Successive event onsets in world patterns simultaneously define a series of nested time periods, and corresponding

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13 James, *Principles of Psychology*, 415.
14 Johannes Müller (1801-1858), in his *Law of Specific Nerve Energies*, discovered that sensory organs were transducers, capable of observing light and sound from physical objects and transforming them into neural activity.
15 Neisser, *Cognition and Reality*, 27.
16 Ibid., 27.
to each world time period there is a synchronized perceptual rhythm with a similar period."¹¹⁸ A listener, upon hearing a series of periodic inputs, may synchronize a physiological rhythm to the periodic stimuli.¹⁹ This synchronization, the alignment of systems, is commonly referred to as entrainment or attunement.

Ives describes the synchronization process in the “Thoreau” chapter of his Essays Before a Sonata. Thoreau, in Ives’s description, feels that his pace is too quick compared to Nature’s tempo (“pulse beat of nature”). He attempts to synchronize his pace by entraining to Nature’s broader rhythm in the belief that the perceived pulse is more in synchrony with her tempo.²⁰

Real situations, both inside and outside musical experiences, are indefinitely rich opportunities to entrain and acquire new information. In a way, the real world presents to us an endless unfolding of temporal processes to which we voluntarily choose to entrain and acquire new knowledge at will. Consequently, there is always more information to be gathered than is obtained at any given moment. As Neisser states: “There is always more to see than anyone sees, and more to know than anyone knows.”²¹ So why do we choose to perceive some events and not others?

The choice to selectively attend, to choose between events, is a critical concept and plays a significant role in modern-day psychology.²² The attentive process requires anticipatory preparations that the perceiver must make in order to maintain the attending process—the second

²⁰ Ives, Essays Before a Sonata, 67-68. Ives’s second handwritten copy of the passage contains additional words, including “pulse beat of nature,” that are published in the Boatwright edition with the designation “MS.”
²¹ Neisser, Cognition and Reality, 79.
²² Ibid., 80.
step outlined in William James’s description of the attentive process. Neisser explains that these anticipatory preparations, which he refers to as anticipatory schemata, prepare and enable the perceiver to accept certain information rather than others.\textsuperscript{23} Neisser explains that a listener continuously develops and modifies these anticipations based on information acquired during experience:

\begin{quote}
The listener continuously develops more or less specific readinesses (anticipations) for what will come next, based on information he has already picked up. These anticipations—which themselves must be formulated in terms of temporal patterns, not of isolated moments—govern what he will pick up next, and in turn are modified by it. Without them, he would hear only a blooming, buzzing confusion.\textsuperscript{24}
\end{quote}

Neisser first presents and explores anticipatory schemata in his text \textit{Cognition and Reality} (1976). Anticipatory schemata, as presented by Neisser, function in the attending process as the portion that is internal to the perceiver, modifiable by experience, and in some way specific to what is being perceived.\textsuperscript{25} Anticipatory schemata, in combination with the person’s entrainment (explorations) and observed object, became the foundation for Neisser’s new cognitive theory of perceptual cycles (see Example 3.1).

\begin{flushright}
\textsuperscript{23} Ibid., 20.
\textsuperscript{24} Ibid., 27.
\textsuperscript{25} Ibid., 54.
\end{flushright}
Example 3.1. Neisser’s “The Perceptual Cycle,” Fig. 2 in *Cognition and Reality*, p. 21.

Neisser’s attention to anticipatory schemata provided a unique approach to the attention process by directly incorporating the factor of human experience. Neisser, in his first chapter, expresses his disappointment with the wide range of traditional psychology theories and practices that do not incorporate human experience: “A psychology that cannot interpret ordinary experience is ignoring almost the whole range of its natural subject matter.”

Neisser, in a similar way to Ives’s thoughts on musical processes, believed that human experience was an essential component in any theory on cognitive processes.

Neisser’s anticipatory schemata are perhaps mirrored in Mari Reiss Jones’s subjective generators, an organism’s internal mechanism that reflects world patterns and is modifiable by experience.

Jones explains that subjective generators in combination with the object being perceived creates mental trajectories that guide our attention and ultimately our perceptions:

26 Ibid., 4.

A subjective space-time path can be unwrapped by applying appropriate generators to various parts of a pattern. In this way, the responsive person dynamically generates trajectories that cast out attentional thrusts into space and forward in time.

It is such psychological trajectories that rhythmically guide our attentional energies along ideal paths. Attention is cast from some reference event at one point in time toward a target event scheduled for a later time. This approach demonstrates that attention itself is a dynamic, many-leveled affair based upon nested internal rhythms.28

Both Neisser and Jones’s theories assert that the perceivers’ anticipatory preparations or attentional trajectories are guided and modified by the perceiver’s experiences. Therefore, perceivers’ past experiences partially determines and modifies what and how they entrain to their environment. As Jones summarizes:

We continually cast ourselves forward by rhythmically anticipating future events that may occur within small and larger time intervals. These paths form the patterns of mental space and time and so can establish for us that sense of continuity and connection that accompanies comprehension.29

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28 Ibid., 571.
29 Ibid., 571.
Jones’s description of attentional trajectories is quite similar to the metrical theories proposed by Cone and Hasty (discussed in the previous chapter). To highlight, Jones states: “Attention is cast from some reference event at one point in time toward a target event scheduled for a later time.” The trajectory motion described by Jones is similar to the projectile motion (e.g., a thrown ball) proposed by Cone and further expanded by Hasty (see page 33).

Further studies linking these and more cognitive theories on attending may enlighten our view of the musical experience and concepts of musical time. Perhaps the listener’s attentional trajectories and the temporal process in music are equated as Christopher Hasty suggests: “. . . to experience rhythm is to participate or to become involved in an event as it is going on, and it might be said that the intensity of our experience of rhythm is determined by the intensity of our involvement.”30

In the meantime, we may conclude that Charles Ives’s description of listening is scientifically valid in that both the eye and ear perform similar functions, both sensory organs enable perceivers to focus voluntarily, and the perceiver’s choices determine which and affect how outward objects will be perceived. Ives believed these conditions are engaged when listeners are confronted with juxtapositions of temporal processes.

This discussion brings us to the primary question and hypothesis of this thesis: Did Ives set in motion, in many of his compositions, juxtapositions of temporal processes, with the aim of exploiting a person’s ability to entrain? The answer is addressed by a passage found in Ives’s Memos regarding his Universe Symphony:

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30 Hasty, *Meter as Rhythm*, 69.
...I started something that I’d had in mind for some time...—
trying out a parallel way of listening to music, suggested by
looking at a view (1) with the eyes toward the sky or tops of the
trees, taking in the earth or foreground subjectively—that is, not
focusing the eye on it—(2) then looking at the earth and land, and
seeing the sky and the top of the foreground subjectively. In other
words, giving a musical piece in two parts, but played at the same
time... and that this piece be played twice, first when the listener
focusses his ears on the lower or earth music, and the next time on
the upper or Heaven music.

This was suggested by a few pages of a sketch or general plan for a
*Universe Symphony* or “The Universe, Past, Present, and Future”
in tones...  

The two parts Ives describes—Earth music and Heaven music—are played
simultaneously by separate ensembles. The ensembles differ in instrumental range, timbre, pulse
and tempi—creating juxtapositions of temporal processes. Ives parallels the listening and visual
experiences by purposefully implementing juxtapositions of temporal processes in his *Universe
Symphony* to exploit the listener’s ability to choose. He even suggests that the work be played
twice in order for listeners to choose an alternative experience.

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31 Ives, *Memos*, 106.
32 Lyman, “A Comparative Study of Realizations and Completions,” 109. See also Larry Austin,
“The Realization and First Complete Performances of Ives’s *Universe Symphony,***” in Ives
Studies, 214.
Ives exploits listeners’ ability to entrain by allowing them to choose between numerous temporal processes inherent in the music. Listeners aesthetically choose their own experience by attending to temporal processes at will, subsequently arriving at their own unique perception or “view” of the picture. As echoed by William James:

Suffice it meanwhile that each of us literally chooses, by his ways of attending to things, what sort of a universe he shall appear to himself to inhabit.\textsuperscript{33}

My experience is what I agree to attend to.\textsuperscript{34}

\textsuperscript{33} James, \textit{Principles of Psychology}, 401.
\textsuperscript{34} Ibid., 380.
Chapter 4

Cycles Revisited

“The cycles grow, expand, ebb, but never literally repeat.”

--Charles E. Ives

Many of Ives’s late chamber and orchestral works may seem chaotic on the musical surface. Ives presents his listeners with simultaneous musical events that may seem disorienting to inexperienced listeners as they learn to independently navigate and digest layers of temporal streams and complex pitch structures. These myriads of musical experience have naturally led critics to raise questions concerning the composer’s methods and researchers to develop answers. A primary question commonly addressed: Did Ives, a composer who believed in a universal unity, unify his diverse oeuvre and the infinite array of musical experience?

Ives was interested in cycles as a way of connecting musical and extra-musical experiences. He believed the universe was encompassed and united in endless cycles and that these processes could be reflected through music. This idea is found on a sketch for his Universe Symphony, a work attempting to paint the universe in tones. He writes on the manuscript: “of various formations but in endless cycles—the relentless processes of nature of all time of the universe . . .”

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1 Ives, Memos, 101.
2 Philip Lambert, “Ives’s Universe,” in Ives Studies, 243.
3 Kirkpatrick, Catalogue, 27. Note found on f1844.
Ives’s concept of cycle however is different from traditional definitions. Musical cycles, whether involving temporal or pitch processes, often refer to repetitive structures, such as repeating durations or intervals. And, as we explored in Chapter 2, Ives loathed music that was performed or perceived as fixed and repetitive. Michael Tenzer, for example, suggests: “for a cycle to be present there must be a repeating group of a given periodicity or a duration measured in pulsations, and fixed rhythmic identity.”\(^4\) Ives however did not consider a cycle as a literal and unchanging process or one that continually returns to an originating point. He states in his *Memos*: “The cycles grow, expand, ebb, but never literally repeat.”\(^5\)

Philip Lambert, in his article “Interval Cycles as Compositional Resources in the Music of Charles Ives,” outlines Ives’s use of interval cycles—recurring intervallic arrangements—in creating pitch structures to provide cohesive frameworks in his compositions.\(^6\) Lambert explains, “A cyclically conceived structure provides an underlying cohesive framework within which nonrepetitive elements may grow and evolve, just as a time period such as a day can encompass vast changes within its cyclic boundaries.”\(^7\) Lambert limits the concept of cycles to musical structures rather than extending it to musical processes.

Ives’s habit of patterning various intervallic combinations in his compositions has been well documented in fruitful research by Lambert and many others. This habit is symptomatic of Ives’s underlying fascination with natural cycles, such as sound frequencies and vibrations, and

\(^7\) Lambert, “Interval Cycles as Compositional Resources,” 81. Lambert notes in fn78 that Audrey Davidson additionally makes this point in “Transcendental Unity in the Works of Charles Ives,” *American Quarterly* 22 (Spring 1970): 35-44.
our evolving abilities to sense and perceive them. Ives explores, in numerous writings from his *Memos* to *Some “Quarter-Tone” Impressions*, the physiological relationship between the human ear and natural cycles. He believed that the ear, through sufficient training, could continually learn to find and attend to natural oscillations—a practice that he believed contributed to man’s natural evolution:

The more one studies and listens and tries to find out all he can in various ways, technically, mathematically, acoustically, and aurally, [the more] he begins to feel (and more than that, actually know and sense) that the world of tonal vibrations, in its relation to the physiological structure of the human ear, has unthought of (because untried) possibilities for man to know and grow by. . .  

Ives’s sentiments were echoed in many physiology studies in the nineteenth century; he quotes many of these studies, particularly works by Helmholtz and Pole, in his writings. Johannes Müller (1801-1858), a German physiologist, studied physiological connections between the human brain and world phenomena. Müller, in his *Law of Specific Nerve Energies* and *Handbook of Physiology*, argues that perceptions are created by actions of nerves terminating at specific points in the brain. He believed that these actions were extremely quick and could not be measured. One of Müller’s students, Hermann Helmholtz (1821-1894), found however that these actions were relatively slow, the average speed being close to 60mph, and

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8 Ives, *Memos*, 197.
10 Ibid., 246.
could be studied. Helmholtz subsequently developed many gadgets, including the ophthalmoscope still used today by optometrists, to study the physiology of sensory organs in an attempt to trace nerve signals from sensory organs to the brain—Helmholtz’s student, Heinrich Hertz (1857-1894), would later expand Helmholtz’s developments in psychoacoustics to the study of radio waves. Helmholtz, as a result of his research, moved away from Müller’s vitalist views, which were rooted in the faith that all knowledge is present at birth. Helmholtz combined physics and physiology in his belief that humans continually learned about the nature of space through experience.

Both Müller and Helmholtz, nevertheless, held parallel views with German philosopher Immanuel Kant, who stated that we can only know outward objects through our own sensibility—a Kantian principle that became the foundation for Transcendental aesthetics and logic. Kant states in his *Critique of Pure Reason*:

> Objects are quite unknown to us in themselves, and what we call outward objects, are nothing else but mere representations of our sensibility, whose form is space, but whose real correlate, the thing in itself, is not known by means of these representations, nor ever can be.

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11 Ibid., 246.
12 Ibid., 247.
13 Ibid., 247.
14 Ibid., 247.
15 Ibid., 245.
Ives parallels this Transcendental principle in a description of his *Universe Symphony*:

As the eternities are unmeasured, as the source of universal substances are unknown, the earth, the waters, the stars, the ether, yet these elements as man can touch them with hand & microscope . . . the only known is the unknown, the only hope of humanity is the unseen Spirit.\(^{17}\)

Ives, in agreement with Helmholtz, believed that experience enables humanity to continually grow though the continual process of sensing and learning about the world around them. Ives was therefore vexed by the development of rules, or “fundamental laws,” commonly implemented in music school curriculums. He felt that these “fundamental laws” often affixed to tonality limited musical experiences and were falsely defended with deference to “natural laws”: \(^{18}\)

What are the true, fundamental, natural laws of tone? The people who talk and tell you exactly what they are, who teach them explicitly, who write treatises about them—*ipso facto,*—know less about them than the deaf man who wonders! They measure a vibrating string and want to tie your ears to it. When it’s easy to

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\(^{17}\) Kirkpatrick, *Catalogue*, 28.  
\(^{18}\) Ives, *Memos*, 48-50 and 197.
catch the vibration, then it’s “natural,” and they smile. When it’s hard, then they scold or get mad, or go to sleep.\textsuperscript{19}

Ives, in his \textit{Some “Quarter Tone” Impressions}, paraphrases a passage by William Pole (1814-1900), an English musician and engineer who expressed similar sentiments:

The notion most generally prevalent among musicians, \ldots is, that the modern forms of musical structure, from the simple diatonic scale up to the more detailed rules of harmony and counterpoint, rest on some imperative natural laws, which will not admit of violation, or scarcely of alteration. The cause of this consists chiefly in a loose and indistinct idea of what natural laws mean, and in a fallacious appeal to the judgment of the ear, mistaking the force of education and habit for the promptings of nature.\textsuperscript{20}

Ives confronts the traditional concepts of “fundamental laws” in music through a commonly used physiological approach, the division of the string. He believed “natural laws” could not be broken if sounds were physically possible:

They talk about some fundamental laws [of] sound—for instance, an obvious physical phenomenon, or rather a material arrangement

\textsuperscript{19} Ibid., 50.
of things, is 2:1 (that is, an octave). . . . 1:99 is just as fundamental and natural as 2:1. The physical movement of a string vibrating or dividing into segments is but a thing the eye and ear can know and see easily. Does that make it, or not make it a fundamental law?

The obvious movements in the mechanic-physico world of nature are too often by men taken for the whole, to a great extent, because it is easy to take them as such. 21

Ives provides studies and extensive writings on the overtone series, a natural tonal sequence. In Some “Quarter-Tone” Impressions, he divides the octave into twenty-four tones and outlines new chord constructions to include quarter-tones—he incorporates many of these ideas into his compositions including his Three Quarter-Tone Pieces for Two Pianos (1923-1924). He explains that these chord combinations are different from traditional diatonic chords in that they function differently in the perceptual experience:

A thing that has impressed me in trying out the chords used in this plan is that they may be played quite continuously without holding you up, as a repetition of diatonic chords seems to do. This is due, quite probably, to the ear’s doing a certain amount of adjusting rather than “accepting on habit.” 22

21 Ives, Memos, 50.
In a movement of music, a structure built primarily on a progression of chords not necessarily the same but of the same relative intervals seems more and more to hold up that organic flow which we feel the need of—it halts us so severely that a resort to other material is almost forced on us. As an instance, we may go perhaps to a series of chords, each different, occurring in cyclic repetition [MS: a series of chords each different which do not repeat except as the cycle repeats and then not literally]. The process of finding whatever one feels is wanted in each case is mostly instinctive, but that there are underlying laws is evidenced by the fact that they may be traced in a general way after the notes are written down.23

Ives reverses the traditional approach to musical “laws.” Laws, according to Ives, are extracted after the compositional process has taken place—a direct opposition to the commonly taught practices of incorporating rules into the compositional process (e.g., counterpoint and four-part writing). Ives consequently believed that these laws are always subject to change. He quotes Helmholtz who explains that musical practices are not based exclusively on inalterable rules but aesthetic principles that continually grow and evolve:

23 Ives, “Some ‘Quarter-Tone’ Impressions,” 115. The passage marked “MS” designates a revised line from a second handwritten copy by Ives. This line is included in Boatwright’s publication of Ives’s writings.
Hence it follows . . . that the system of scales, modes, and harmonic tissues does not rest solely upon unalterable natural laws, but is at least partly also the result of aesthetical principles, which have already changed, and will still further change, with the progressive development of humanity.24

Ives believed that the future of music lies in its connection to the evolving nature of humanity.25 He encouraged others to become aware and find out how to use the myriads of sound waves intrinsically present in nature—a process that would contribute to both the evolution of man and music.26 He even assures that this long tedious process would be abundant for many years to come: “. . . it may be longer than we think before the ear will freely translate what it hears and instinctively arouse and amplify the spiritual consciousness.”27

Ives’s enthusiasm to capture his own experiences in music was inspired by his father. For example, he recalled his father hearing a sound and spending countless hours trying to reproduce it:

24 Italic in original. Quoted in Ives, “Some ‘Quarter-Tone’ Impressions,” 109. Source is found Hermann Helmholtz, On the Sensation of Tones as a Physiological Basis for the Theory of Music, trans. Alexander J. Ellis, 2nd Edition (London: Longmans, Green and co., 1885), 235: Hence it follows, . . . that the system of Scales, Modes, and Harmonic Tissues does not rest solely upon inalterable natural laws, but is also, at least partly, the result of esthetical principles, which have already changed, and will still further change, with the progressive development of humanity.

25 Ives, “Music and Its Future,” 197-98: “The future of music may not lie entirely with music itself, but rather in the way it makes itself a part with—in the way it encourages and extends, rather than limits, the aspirations and ideals of the people—the finer things that humanity does and dreams of.”


27 Ibid., 109.
One afternoon, in a pouring thunderstorm, we saw him [George Ives] standing without hat or coat in the back garden; the church bell next door was ringing. He would rush into the house to the piano, and then back again. “I’ve heard a chord I’ve never heard before—it comes over and over but I can’t seem to catch it.” He stayed up most of the night trying to find it in the piano. It was soon after this that he started his quarter-tone machine.28

Ives’s recollection highlights the subject of perceptions in musical processes and experiences. George Ives, according to his son, continually altered his attempts in reproducing a perceived sound, even to the point of developing a new instrument, based on his listening experiences. The behavior described by Ives fits the “perceptual cycle” diagram by Neisser. Ives’s father continually adjusted and evolved his attempts based on his experience. In the following section, I will approach Ives’s concept of cycle from the perspective of Neisser’s “perceptual cycles” to incorporate the factor of experience, which both Ives and Neisser felt was vital to all natural evolutions.

Perceptual Cycles as Compositional Resources

To demonstrate an expanded concept of cycle, let’s return to the “BU 13” line in the Universe Symphony’s “pulse.” The player anticipates the arrival of each bell tone and, depending on their perception of the eclipse, adjusts his/her thirteen articulations to span the projected duration. The articulations, the pitches and intervals, cannot generate the cycle because these

28 Ibid., 111.
articulations are subject to change. Ives writes that the players in the *Universe Symphony*’s pulse may create variations of their material or improvise in later cycles: “All these can vary in later cycles will be at players’ discretion (keeping to his own beats).”29 The musical material within the cycle changes while the performer maintains their temporal process—“Holding their own.”

A cycle’s anticipated event—such as the instrumentalist’s eclipse with each “basic unit”—is accented and stands as the cycle’s literal beginning and ending.30 These events, however, cannot be experienced as the literal beginnings and endings; events must pass before it can be perceived, creating a time lapse between the event and perceiver.31 Ives addresses this phenomenon in a passage from his *Memos*:

> Often the roots or beginning and end of a passage or cycle are not literally the beginnings or ends—but combinations of tone that can and do stand for them, if not to the eye, to the ear and mind after sufficient familiarity.32

The players travel *in a cycle*, meaning that each player anticipates an event at a projected point in time and that these anticipations are guided by projections that are based in and continually modified by experience—as we discovered in Hasty’s theory of projection (Chapter 2). The players continually modify the speed of their material based on their anticipations and

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29 Found on f1820, as quoted in Austin, “Realization and First Complete Performances,” 189. See also Lyman’s discussions on improvisation in the *Universe Symphony* found in Lyman, “A Comparative Study of Realizations and Completions,” 218-219.


perceptions of surrounding musical events. The players know if their projections are correct when their event eclipses with the anticipated event. If they perceive that their event falls short or is late to the eclipse, they can easily gauge their miscalculation and re-orient themselves with the group by adjusting their temporal process.

Musical processes, particularly temporal processes, consist of and are continually modified by perceptual cycles. Neisser states that a performer’s actions and movements—such as those required in musical performance—require the same spatial and temporal continuities required for perception. Skilled performers, although engaged in physical activity, use perceptual cycles to continuously perceive and modify their actions:

. . . [E]ach of them acts, perceives the consequences of his actions, develops a more precise notion of what is to be done, acts again, perceives again, and so on until the final product is achieved. At each moment the skilled activity depends on the existing state of affairs, on what has gone before, and on the plans and expectations of the performer. This cyclic process fits the paradigm of Figure 2 [see Ex. 3.1 “Perceptual Cycle” diagram].

Musical experiences, from this perspective, are imbedded with continuous perceptual cycles that ebb and flow according to the choices and adjustments made by musical participants based on their perceptions and experiences. Performers individually and continuously engage in perceptual cycles to adjust multiple musical processes simultaneously to remain oriented in time.

33 Neisser, Cognition and Reality, 51.
and on pitch. Listeners, particularly those presented with juxtapositions of temporal processes, are granted similar experiences by choosing which temporal processes or cycles to engage in—as Neisser states, “perceiving is a kind of doing.”

The previous chapters highlighted several instances where Ives describes the listener’s ability to choose between temporal processes that are juxtaposed and his belief that these choices inevitably alter the listener’s experiences and perceptions. Ives notes how choices enable listeners to create personalized views by allowing them to establish preferences and arrange in their mind “the relation of the rhythmic, harmonic, and other material.”

Ives further believed that listeners, by using perceptual cycles, could perceive events that were purely coincidental—in other words, listeners could experience musical events or relationships that were not composed-out or intended by the performers. To demonstrate this concept, let’s revisit two main groups in the Universe Symphony, the lower (Earth) and upper (Heaven) parts. These two parts, as previously discussed, are notated as separate ensembles and form a juxtaposition of temporal processes. On one of the manuscripts, Ives encourages the performers, who engage in the Holding your own technique to create the juxtaposition of temporal processes, with the following performance note: “keep going through whole movement, keep going in rhythmic cycles.”

The performers, through the use of selective attention, mentally commit to the temporal process of their group in order to disregard or “tune-out” the other ensembles. The groups travel simultaneously in their own orbits or cycles and remain independent by not entraining to the temporal processes of other groups—the analyses presented

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34 Ibid., 52.
36 Found on f1830. See also Lyman, “A Comparative Study of Realizations and Completions,” 106.
in the final chapters discuss scenarios that enable selective attention or the use of Ives’s *Holding your own* technique.

Listeners, unlike the performers, can focus on either group and perceive interactions within and between both groups. Listeners, by entraining to the movements of both groups, can hear events, or eclipses between cycles, that are not composed-out or intended by the performers. For example, if each group plays a series of chords and they align, or become harmonized, in a performance, it is a mere coincidence since the players are not entraining to each other. (Perhaps these experiences are similar to blinking lights emitted by turning vehicles; the occasional alignment of the lights is purely coincidental.) Any relationships or perceptions drawn between the two groups are results from the listeners’ perceptual cycles based on coincidental events or perceived eclipses. As Ives states in his *Memos*:

> These two main groups [Earth and Heaven] come into relation harmonically only in cycles—that is, they go around their own orbit, and come to meet each other only where their circles eclipse.\(^{37}\)

According to Ives’s instructions, both orchestras listen to the *Universe Symphony*’s pulse for their initial entrances. Ives presents two performance options. On one page of a manuscript, he instructs the orchestras to wait through several sequences of the “pulse” before entering: “II only I.F.s [indivisible factors] The earth, heavens orchestra do not start until after 3\(^{\text{rd}}\) or 4\(^{\text{th}}\)

percussion cycle.”  Ives, in his Memos, contradicts this plan, stating that one sequence is heard: “The pulse of the universe’s life beat was by the percussion orchestra, who play their movement first, all through, before any of the other orchestras play.” In either case, Ives instructs the orchestras to entrain—listen and wait—to the Universe Symphony’s “pulse” before they enter. He reveals that the “pulse,” which is built upon the low bell’s basic unit, serves as the primary foundation for cycles throughout the Universe Symphony:

The B.U. = lowest vibrations of & basis of each cycle - & stands as
the representation of the eternal pulse & planetary motion & of the
earth & universe . . .

The “pulse” is one example of Ives’s use of musical material that is defined by: (1) instrumentation, (2) adherence to a prescribed tempo (such as Adagio), and (3) presence throughout the duration of the movement or work. I will refer to musical material meeting these requirements in future discussions and analyses as a Cyclic Reference Unit (CRU).

The Universe Symphony’s “pulse” (CRU), although present throughout the work’s duration, is not maintained as a primary temporal process. Instead, the CRU functions as a reference for additional ensembles’ entrances and tempi. As additional performers are added from various locations, the continual presence of the CRU guarantees numerous temporal processes, heard or unheard.

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38 Found on f1820, as quoted in Austin, “Realization and First Complete Performances,” 188.
39 Ives, Memos, 107.
40 Kirkpatrick, Catalogue, 26 (f1820).
Before extending this research to multiple analyses of Ives scores, I will briefly address the subject of continuity in Ives. Continuity in his music, perhaps in music in general, is often associated with repetitive and imbedded musical structures. For example, much thought and debate has been spent on hymn tunes and their recurrences in Ives’s scores. Musical structures enable music theorists to intentionally bypass the unpredictable nature of experience to provide universally applicable theories of continuity.

Experience, however, is a critical component in discussions of continuity in Ives’s music. Ives states in reference to his entire oeuvre: “The continuity of this music is more a process of natural tonal diversification and distribution than of natural tonal repetition and resolution.” For a person to process acts of diversification and distribution, multiple objects must be perceived, enabling perceptions between objects. Processes of repetition and resolution, however, can be accomplished through the perception of a single object. Stephen Blum, in his article “Ives’s Position in Social and Musical History,” similarly notes that Ives avoids “motivic work,” which is based in natural tonal repetition and resolution, in favor of juxtapositions, which enable continually changing perceptions through natural tonal diversification and distribution.

Ives achieves continuity by allowing the attending process to create a personalized map for each participant. Perceptual anticipations exhibited by each participant are continually modified in the attending process and assure the continuity of perception over time—uniting the work as whole. As Ives states in his Essays: “Coherence, to a certain extent, must bear some

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41 Ives, Memos, 195.
42 “In calling attention to this twofold process—aimed at avoiding the static perceptions that might result from habit and custom—Ives meant to answer those critics who had found his work ‘incoherent.’” Stephen Blum, “Ives’s Position in Social and Musical History” The Musical Quarterly 63 (1977), 466.
43 Neisser, Cognition and Reality, 22.
relation to the listener’s subconscious perspective.”

Henry and Sydney Cowell similarly acknowledge the roles of perception and experience in developing a sense of unity or form in Ives’s compositions: “. . . Ives’s aim is not to make the form simple and clear, but rather to create an underlying unity out of a large number of diverse elements, used asymmetrically; he thus relates his music by analogy to the individual’s experience of life. The sense of unity is not brought about through exact repetition. . . but is established through relationships.”

Lyman, although he approaches “cycles” differently (as structure), notes the role of perception in creating unity and form in Ives’s Universe Symphony: “Each cycle moves at its own rate and, as Ives says, ‘eclipses’ the others at certain points in the progression of the piece. These eclipses and cycles [in the Universe Symphony] represent Ives’s most advanced conception of unity and form, a system he derived from the perceived process of the universe.”

Ives’s “Pictures in Sounds” are mental images, comprised of perceptual anticipations that are unique to each individual. Ives, by implementing juxtapositions of temporal processes in his “Pictures in Sounds,” ensures the potential for multiple entrainment experiences and personalized views for every musical participant. In the end, perceptual cycles not only enable musical participants to attend and comprehend musical events in personalized ways, but also

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44 Ives, Essays, 98.
45 Cowell and Cowell, Charles Ives and His Music, 173. See also Wolfgang Rathert, “Idea of Potentiality in the Music of Charles Ives,” in Ives Studies, ed. Philip Lambert (Cambridge: Cambridge University Press, 1997), 128. “Here we find the difference between Ives’s concept of form and “collage”: a collage tries to break down perception, whereas form in Ives remains integral in the sense of Emerson’s aesthetic theory of organicism, and therefore values the unity of perception and experience.”
47 “It [Chapter 7] suggests that images are essentially perceptual anticipations, preparations for picking up certain kinds of information. The hypothesis is supported by a review of modern experiments on imagery.” Neisser, Cognition and Reality, 11.
develop meaning.\textsuperscript{48} Ives’s use and reliance on cycles, in this way, magnifies the diversity inherent and granted to each individual while managing to unite musical and extra-musical experiences in a single process.

\textsuperscript{48} “. . . the concept of a perceptual cycle explains how one can perceive meaning as well as spatial position and form.” Neisser, \textit{Cognition and Reality}, 22.
Chapter 5

The Compositional Design and Aesthetic Programs

of Three Orchestral Works

The following pages present three musical analyses to reveal deeper levels of musical form that are true to Ives’s aesthetics and the performance practices of his music: Central Park in the Dark, The Unanswered Question, and the Fourth Symphony. The scores used in the analyses are critical editions that include Ives’s performance notes and both versions of The Unanswered Question as well as a revised score manuscript of the Fourth Symphony’s Finale, following the critical edition’s full score. In regards to the Fourth Symphony, the published critical edition by Sinclair, Singleton, Shirley and Brooks is the primary resource and not the online performance edition by Thomas Broadhead. Many temporal aspects in the critical edition were lost in the performance edition—perhaps in an effort to facilitate performances. When the performance edition is addressed, I include a footnote and/or a reference in the text.

The goal of these analyses, which highlight the primary juxtaposition of temporal processes in each work, is to demonstrate Ives’s intentions and abilities to orchestrate works that exploit musical participants’ natural abilities to entrain. Ives’s written descriptions and programs provided with his works reveal his intentions of guiding the performer’s decisions by paralleling extra-musical and musical experiences.

Each analysis identifies and explores the expressive functions of the *cyclic reference unit* (CRU) found in each work. The CRU in both contemplations (*Central Park in the Dark* and *The Unanswered Question*) is played by the string orchestra. The Fourth Symphony contains one CRU, which is found in the “Finale” movement and played by the percussion ensemble.

The CRUs provide a continual process that becomes juxtaposed with other groups (Group 1, Question, Answerers, and OU). These groups are usually characterized with an (1) accelerando that is achieved through tempo markings or rhythmic diminution, and/or (2) increasing dynamics or instrumentation. Ives often associates human concepts with groups that accelerando with tempo markings and increase in dynamics. These groups include: Group 1 (“sounds of happenings that men would hear”) in *Central Park in the Dark*, the Answerers (“The Fighting Answerers”) in *The Unanswered Question*, and the upper orchestra (a luxurious train ride) in the Fourth Symphony’s “Comedy” movement.

Ives, as noted in the following passage, believed that competing groups do not cancel out a constant sound (CRU):

(In that connection) is a sound which is constant (and heard by an ear remaining in the same position to the sounding body)

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1 Group 1 in *Central Park in the Dark*, Answerers in *The Unanswered Question*. The entrances of questions 2-6 in *The Unanswered Question* occur slightly earlier.
cancelled, when another louder sound (heard by the same [ear in
the] same position) comes, so that the hearer does not seem to hear
the first sound? I have never yet seen any theory describing (both
aurally and scientifically) the nature and processes etc. of sound-
waves, together with their relation to the physiology of the ear, that
seemed to me absolute proof that sounds (as above) are cancelled.
The Professors and musicians say – “If you don’t hear this sound
(and a graph does not show the waves of this sound), isn’t that
proof that they are cancelled?” – NO—How does the listener know
that he doesn’t hear? (And graphs don’t prove everything—some
of them may mean that nature is doing little more than being easy
and obvious to some know-it-all scientist after a nice dinner!) Can
he be any surer about that than an architect can be sure that a
certain grain of sand is not in his dam—because he doesn’t see it
there?²

As a central concept in this thesis, the juxtapositions created by the CRU and other
groups provides a rhythmic density in Ives’s music that enables participants to freely entrain to
events of their choosing. The depth and scope of the composition’s rhythmic density
subsequently reverberates into musical form by allowing participants to ultimately choose what
is in the foreground, middle ground, and background. These compositions subsequently take

² Ives, Memos, 67.
many forms that continuously change with the natural flux and flow of experience—bringing a variety of perspectives and meanings that are unique to each individual.

American composer John Adams, in his book *Hallelujah Junction: Composing an American Life*, acknowledges this experience and idea of musical form in Ives’s compositions. Adams, like many other American composers, admires the juxtapositions in Ives’s large-orchestral works and its abilities to create multiple perspectives or views. He explains that this aesthetic had a profound affect in developing his unique musical language:

I had already remarked that in both the Fourth Symphony and *Three Places in New England* Ives had hit upon something very special, his own kind of impressionism that was in part achieved by constantly emerging and receding levels of musical activity. I found in these works a highly refined sense of foreground, middle ground, and background, an ordering of musical ideas according to their imagined placement in a perspective. . .In my mind Ives was the first composer to approach the orchestra setting as if it were a giant mixing board. Objects, be they fragments or tunes, atmospheric effects, or enormous blocks of sound, appear on the listener’s radar as if the composer were moving faders in a grand mix. This is a radically different way of treating musical material from the traditional rhetorical procedures of European art music, where the discourse is far more linear and logically spun out.
I drew much from my firsthand experience with Ives. *On the Transmigration of Souls*, written in 2002 for the New York Philharmonic, shows how much of an impression Ives’s “mixing board” technique of handling the orchestra affected me.³

Charles Ives confronted the traditional concepts of musical form by avoiding the European traditions of upholding one fundamental line to embrace the infinite potential for many. Ives’s compositions are designed to promote musical experiences that are rooted in the spirit of democracy; they enable participants to choose their experiences by allowing lines or groups to equally coexist. As Ives remarks: “A choice is freedom.”⁴

**The Contemplations: Central Park in the Dark and The Unanswered Question**

From 1906 to 1916, Ives’s musical explorations blossomed into many new compositions. Several of these compositions, such as *Over the Pavements*, are listed as “Pictures in Sounds” in Chapter 3 and many feature Ives’s *Holding Your Own* technique.⁵ Many of these experimental works, as noted by Lyman, were an opportunity for Ives to systematically “practice perception” in preparation for his mature symphonic works.”⁶

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Ives’s sudden growth during this time period is often accredited to his romantic courtship and eventual marriage to Harmony Twitchell—a long courtship that lasted from 1905 until their marriage in 1908. Charles Ives, perhaps anew with confidence, allowed his work to naturally unfold and drift further away from canonical methods—a musical shift that parallels his transition into matrimony and the creation of his new family.

During this time, Ives composed two pieces for chamber orchestra that formed a pair of contemplations. He titled them: “I. ‘A Contemplation of a Serious Matter’ or ‘The Unanswered Perennial Question’” and “II. ‘A Contemplation of Nothing Serious’ or ‘Central Park in the Dark in the Good Old Summer Time.’” The inclusion of the second title, as suggested in Chapter 1, may have been prompted by Harmony Ives: “he fixed it [the paired compositions] so I could understand it somehow.” It is unclear when Ives showed the compositions to Mrs. Ives. Assuming that Kirkpatrick’s biography of Mrs. Ives that is provided in his edition of the Memos is in chronological order, the viewing would have taken place around 1906-07, before the original versions were completed in 1908 and 1909. If the viewing took place before completion, musical analogies to extra-musical experiences would have been conscious during the compositional process.

Ives later revised the two contemplations and included them with various other works. “A Contemplation of Nothing Serious” (1909) eventually became known simply as Central Park in the Dark and was listed under the label Cartoons or Take-offs. Its companion, “A Contemplation of a Serious Matter” (1908), bore multiple titles: The Unanswered Perennial

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7 Ives, Memos, 277.
8 Ives, Memos, 277.
9 Ibid., 157.
Question, “Largo to Presto,” The Unanswered Question, and A Cosmic Landscape.¹⁰ “A Contemplation of a Serious Matter” was later revised, around 1930-35, and included as the third movement in A Set of Three Pieces under the title “Largo to Presto ‘The Unanswered Question.’”¹¹ Today, the compositions are simply referred to as Central Park in the Dark and The Unanswered Question. The works, although designed together, are often performed separately with the original titles tucked away into written programs and performance notes.

¹⁰ Ibid., 159.
Central Park in the Dark

This piece purports to be a picture-in-sounds of the sounds of nature and of happenings that men would hear some thirty or so years ago (before the combustion engine and radio monopolized the earth and air), when sitting on a bench in Central Park on a hot summer night. The strings represent the night sounds and silent darkness—interrupted by sounds [the rest of the orchestra] from the Casino over the pond—of street singers coming up from the Circle singing, in spots, the tunes of those days—of some “night owls” from Healy’s whistling the latest or the Freshman March—the “occasional elevated,” a street parade, or a “break-down” in the distance—of newsboys crying “uxtries”—of pianolas having a ragtime war in the apartment house “over the garden wall,” a street car and a street band join in the chorus—a fire engine, a cab horse runs away, lands “over the fence and out,” the wayfarers shout—again the darkness is heard—an echo over the pond—and we walk home.¹

—Charles Ives’s written program for

Central Park in the Dark (1906)

¹ Ives, “Note,” in Central Park in the Dark, 31.
Ives describes *Central Park in the Dark* as a “picture in sounds,” a musical work designed as a still or moving image through which humanity subjectively takes part by voluntarily focusing on events. Ives, in the written program for *Central Park in the Dark*, presents two events happening simultaneously: (1) “the sounds of nature” or “night sounds and silent darkness,” and (2) “[sounds] of happenings that men would hear.” On a manuscript, Ives provides specific examples of these extra-musical night sounds. He writes, “Strings = night sounds of nature, bugs, leaves on trees, sounds of silent darkness, sounds natural and unnatural.”² Several of these examples, such as “silent darkness” and “sounds natural and unnatural,” suggest that the strings represent sounds physiologically perceptible and imperceptible to the human ear. To consolidate the list of potential extra-musical experiences, we can differentiate the two categories of extra-musical events in *Central Park in the Dark* as those containing sounds (1) both perceivable and imperceptible, or (2) only perceivable.

Ives characterizes these specified extra-musical events in *Central Park in the Dark* with musical material defined by its own instrumentation, meter, and tempo. Ives defines “the sounds of nature” or “night sounds and silent darkness” as a seemingly endless sequence of thirty-two chords played by the strings (See Example 5.1). Ives instructs the strings to maintain a tempo of *Molto Adagio* throughout the work: “The string orchestra throughout does not change tempo; it plays louder when the rest of the orchestra does, but the same *Adagio* is kept all through.”³

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³ Ibid., 11.
Example 5.1 Central Park in the Dark, mm.1-10 © 1973 by Mobart Music Publications. Copyright © Renewed. All Rights Reserved. Used by permission of Mobart Music Publications.
Each string sequence spans a total of forty quarter-note pulses or ten measures in $\frac{3}{4}$ time. The work consists of ten sequences, the first being played alone. Each sequence contains multiple layers of rhythm created by note durations, phrase durations, and changes in the intervallic structure of each chord. Together, these layers create a juxtaposition of temporal and harmonic processes. Example 5.2 outlines each rhythm within one sequence. The point where every rhythm “resets” is the beginning of a new sequence.

The musical material played by the string orchestra, which serves as the cyclic reference unit (CRU), is defined by: (1) instrumentation, (2) adherence to a prescribed tempo [Molto Adagio], (3) and presence throughout the duration of the movement or work.
<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durations (Vlns. Vla. Cello)</td>
<td>♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
<td>♬ ♬ ♬ ♬ ♬</td>
</tr>
<tr>
<td>Phrase/Slur</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phrase Duration</td>
<td>5.333...</td>
<td>4.666...</td>
<td>6</td>
<td>5.333...</td>
<td>4.666...</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interval Structure*</td>
<td>4-4-6</td>
<td>5</td>
<td></td>
<td>6-7</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>Final chord breaks the structure with a D♭*</td>
<td></td>
</tr>
<tr>
<td>Bass Durations</td>
<td>♩ ♩ ☯</td>
<td>♩ ♩ ♩ ♩ ♩</td>
<td>♩ ♩ ♩ ♩ ♩</td>
<td>♩ ♩ ♩ ♩ ♩</td>
<td>♩ ♩ ♩ ♩</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example 5.2** Durations in *Central Park in the Dark*’s CRU, mm.1-10 (repeated 10 times).

*Lambert, *Music of Charles Ives*, 174-175.* Lambert points out that the D♭ is the only pitch class that has not occurred in the preceding measures. The D♭ completes the twelve tone collection.
Ives writes on a sketch for *Central Park in the Dark* that the string orchestra is to “repeat 9 times (as 10 measures in strings) [while] off tunes & sounds are added.” These “off tunes & sounds,” or sounds of happenings that men would hear, are represented by musical materials played by the rest of the ensemble, which I will refer to as Group 1 [G1]: piccolo, flute, Bb/Eb clarinet, oboe, bassoon, trumpet, trombone, percussion, piano I and II, and solo violin (mm.44-48 and 132-136).

Group 1 enters in m. 12 and shares the same tempo [*Molto Adagio*] as the CRU until m. 64, when it begins to play in . Although both ensembles move at a shared tempo, the temporal processes between both ensembles are frequently juxtaposed. For example, the clarinetist in m. 13-16 projects five quarter notes per measure while the CRU projects four quarter notes ( or three half notes ( ) per measure (See Example 5.3).

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*Example 5.3 Central Park in the Dark*, mm. 13-17 © 1973 by Mobart Music Publications. Copyright © Renewed. All Rights Reserved. Used by permission of Mobart Music Publications.

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4 Kirkpatrick, *Catalogue*, 44.
From measure 64 to 118, Ives maintains the juxtaposition between G1 and the CRU’s temporal processes. In the performance note that accompanies the score, Ives states:

From measure 64, page 11, through measure 118, page 8, the \( \frac{\text{1}}{\text{4}} \) for winds, brass, pianos and drums grows gradually faster, but the \( \frac{\text{1}}{\text{4}} \) for the string orchestra keeps the same tempo throughout.\(^5\)

Group 1’s quarter-note unit, between m. 64 and 118, becomes gradually faster, meaning that the projected durations between pulses become increasingly shorter. These shortened durations create a gradual increase in tempo, which results in a long fifty-four bar phased accelerando. Ives notates G1’s accelerando with a progressing sequence of tempo markings (see Example 5.4): Più mosso (m. 64), Allegretto con spirito (m. 67), Allegro Moderato (m. 79), Allegro con spirito (m. 91), Allegro vivace (m. 103), Allegro molto (m. 109), to Con fuoco (m. 114). Group 1 concludes the accelerando with a fermata in measure 118.

\(^5\) Ives, *Central Park in the Dark*, 31.
Example 5.4 Tempo Relationships between Group 1 and CRU in *Central Park in the Dark*

“The strings finish their ten-measure phrase, wherever they may be in it, when the rest of the orchestra finishes playing measure 118, and then the strings go to measure 119 and the piece finishes as indicated.” (Ives, *Central Park in the Dark*, 31)
Ives notes that the relationship of the strings’ tempo to the rest of the orchestra “need not and cannot be written down exactly.” In order for both ensembles to realign, members of the CRU must listen for G1’s fermata in m. 118, which is easily recognized by G1’s fff trill. Members of the CRU, upon hearing the trill, suddenly decrescendo to ppp and jump to m. 119 to begin their ninth sequence. Consequently, the CRU often cuts the eighth sequence short to reorient with Group 1. For example, if members of the CRU perceive that G1 is at m. 118, they must jump to m. 119 even if they are only through the first seven bars of their eighth sequence. The duration of the CRU’s eighth sequence subsequently varies and is dependent on the speed of G1’s accelerando. The success of this transition, and the piece in general, relies on the CRU members’ abilities to react to Group 1’s fff trill.

Ives provides seven measures of rest after the fff trill. These rests allow G1 members to reorient with the CRU. The conductor, after cutting off the trill, entrains to the CRU for their tempo and the clarinet’s entrance, which he/she would cue in m.126—the clarinetist, of course, will also be entraining to the CRU for the same reason. Members of G1 are therefore abandoning their previous sequences of perceptual anticipations in one tempo to begin a new one that aligns with the CRU’s tempo.

Group 1, according to Ives’s notation, must complete the accelerando before the end of the CRU’s eighth sequence. This notation requires a minimum pulse average [m.p.a] between the CRU and G1. The minimum pulse average can be found by creating a pulse ratio, a

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6 Ibid., 31.
comparison between the number of notated pulses, between the CRU and G1 in mm. 64-118, when the tempos are juxtaposed.\(^7\)

<table>
<thead>
<tr>
<th>Measures</th>
<th>64</th>
<th>67</th>
<th>79</th>
<th>91</th>
<th>103</th>
<th>109</th>
<th>114</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tempo Marking</td>
<td>Piu Mosso</td>
<td>Allegretto con spirito</td>
<td>Allegro Moderato</td>
<td>Allegro con spirito</td>
<td>Allegro vivace</td>
<td>Allegro molto</td>
<td>Con fuoco</td>
</tr>
<tr>
<td>Number of G1's (\frac{1}{4}) Pulses</td>
<td>6</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>12</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Number of CRU's (\frac{1}{4}) Pulses</td>
<td>(Continuation of Cycle 7) 28 (\frac{1}{4}) Pulses + (Cycle 8) 40 (\frac{1}{4}) Pulses = Maximum Total of 68 (\frac{1}{4}) Pulses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example 5.5** Number of Pulses for G1 and CRU during juxtaposition (m. 64-118) in *Central Park in the Dark*.

The CRU, in mm.64-118, plays up to a total duration of 68 pulses and G1 plays a maximum total of 110 pulses. The pulse ratio formed between the groups is 68:110 (CRU:G1). The minimum pulse average for G1 must be greater than 1.6 times the tempo of the CRU. For example, a CRU travelling at 60bpm requires G1 to accelerate at an average tempo equal to or greater than 96bpm in order to complete their assigned material before the CRU’s ninth sequence.

Group 1’s accelerando can be gauged in performance by attuning to a musical sequence, twelve measures long in \(\frac{3}{8}\) time, introduced by the principal pianist in mm.67-78. There are four

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\(^7\) The minimum pulse average represents the mean of G1’s tempi during the CRU’s seventh and eighth sequences. For example, the m.p.a for tempo markings 64, 72, 84, 96, 104, 112, and 126 would be 94bpm.
complete sequences throughout the accelerando.\footnote{Burkholder acknowledges these four occurrences and that each become “faster and louder.” See Burkholder, \textit{All Made of Tunes}, 67.} Ives’s orchestration enables the sequence to be easily heard. Piano I, who plays all four sequences, is generally marked at higher dynamic levels than other G1 parts. The sequence gradually rises in tessitura and becomes doubled in other parts with each occurrence.

![Piano I Sequence](image)

\textbf{Example 5.6} Piano I’s sequence during juxtaposition, mm. 67-113.
This sequence is based on the chorus of Howard E. Johnson’s popular Tin Pan Alley song, “Hello! Ma Baby” (1899). Example 5.6 shows the pianist’s right hand in the first eight bars of the chorus and sequence. Ives transposes the original pitches up a whole step and “rags” the original melody by incorporating ties across barlines. He changes the time signature from $\frac{3}{4}$ to $\frac{2}{4}$ — a change that does not alter the temporal process since the pianist will continue to anticipate two pulses per bar.

Example 5.7 “Hello! Ma Baby” chorus from Johnson’s original version and Piano I in Ives’s *Central Park in the Dark*, m. 67-74.

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Ives, although he alters many aspects of the song, keeps the song’s rhythmic motif, “Hello! Ma Baby” (♩♩♩♩ ♩♩♩♩ or ♩♩♩♩♩♩♩♩) unchanged for the first measure. This distinctive figure enables listeners acquainted with the song to recognize the melody. For those who are not familiar with Howard’s song, the distinctive figure stands as the initiation of each sequence and marks its twelve-measure duration.

The beginnings of all four sequences align with four tempo changes: Allegro con spirito (m.67), Allegro moderato (m.79), Allegro con Spirito (m. 91), and Allegro Vivace (m.103). The tempo changes are approached with an accelerando or a stringendo to provide seamless transitions. The conductor can accomplish G1’s large-scale accelerando by targeting four speeds, one for each sequence, that increase in tempo. By targeting speeds with each sequence, the conductor can assure that G1 will complete their musical material by the end of the CRU’s eighth cycle.

Leonard Bernstein, aware of the notational requirements, marks in his conducting score a series of tempo markings to mentally gauge and lead the accelerando. He marks an initial tempo, the tempo that will be maintained by the CRU, at \( \frac{\text{d}}{\text{u}} = 60 \).\(^{10}\) Beginning in measure 64, Bernstein provides the following metronome markings for Group 1: Più mosso (m. 64) \( \frac{\text{d}}{\text{u}} = 72 \), Allegro (m. 79) \( \frac{\text{d}}{\text{u}} = 84 \), Allegro con Spirito (m.91) \( \frac{\text{d}}{\text{u}} = 92 \), and Allegro Vivace (m. 103) \( \frac{\text{d}}{\text{u}} = 100 \).\(^{11}\) Bernstein crosses out the “Allegro molto” in m. 109 and writes “Avanti.”\(^{12}\) He does not provide metronome markings for the final two tempi changes. Assuming that Bernstein’s accelerando increased at least 26 bpm (e.g., \( \frac{\text{d}}{\text{u}} = 116 \) and \( \frac{\text{d}}{\text{u}} = 130 \)), he would have met the m.p.a. of \( \frac{\text{d}}{\text{u}} = 96 \) required for a CRU at \( \frac{\text{d}}{\text{u}} = 60 \).


\(^{11}\) Ibid.

\(^{12}\) Ibid.
<table>
<thead>
<tr>
<th>Measures</th>
<th>64</th>
<th>67</th>
<th>79</th>
<th>91</th>
<th>103</th>
<th>109</th>
<th>114</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bernstein's Tempo Markings</td>
<td>(\text{q} = 72)</td>
<td>(\text{q} = 84)</td>
<td>(\text{q} = 92)</td>
<td>(\text{q} = 103)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tempo Marking</td>
<td>Piu Mosso</td>
<td>Allegretto con spirito</td>
<td>Allegro Moderato</td>
<td>Allegro con spirito</td>
<td>Allegro vivace</td>
<td>Allegro molto</td>
<td>&quot;Avanti&quot;</td>
</tr>
<tr>
<td>Sequence</td>
<td>(Intro)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>Accel. to Fermata</td>
<td></td>
</tr>
</tbody>
</table>

**Example 5.8** The alignments of the four sequences, tempo markings and Leonard Bernstein’s metronome markings throughout the accelerando.

Rather than waiting until the pianist enters in m.67, Bernstein prepares the tempo for the first sequence three bars earlier at the Più mosso (m.64). His decision to provide a preparation is musically sound with the song’s style and Ives’s compositional design. Many ragtime and barbershop tunes, including Howard’s “Hello! Ma Baby,” begin with introductions that seamlessly unfold into the main theme. Ives’s introduction, however, only lasts three bars (mm.64-66), whereas “Hello! Ma Baby” begins with a four bar introduction, creating a structural diminution of twenty-five percent. This percentage is echoed in the ratio between the song’s chorus and the sequence. The song’s chorus is sixteen bars long whereas the sequence is twelve.

In addition to tempi, the instrumentation for Group 1 steadily builds throughout the accelerando. The clarinetist begins the accelerando alone and quickly hands it over to the upper wind players in m. 65 — a hand-off that accommodates the clarinetist’s instrument change from Bb to Eb clarinet. By measure 91, all four winds are playing and are accompanied by two pianos and trombone. The instrumentation continues to steadily build until m. 104, when all members of G1 are playing (see Example 5.9). This gradual increase in Group 1’s instrumentation is juxtaposed with the constant CRU.
<table>
<thead>
<tr>
<th>Measure</th>
<th>G1’s Instrumentation</th>
<th>CRU’s Instrumentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>Clarinet</td>
<td>VI. I/II, Va, C., B.</td>
</tr>
<tr>
<td>65</td>
<td>Flute, Oboe</td>
<td>VI. I/II, Va, C., B.</td>
</tr>
<tr>
<td>67</td>
<td>Flute, Oboe, Piano I</td>
<td>VI. I/II, Va, C., B.</td>
</tr>
<tr>
<td>80</td>
<td>Flute, Oboe, Piano I, Eb Clarinet,</td>
<td>VI. I/II, Va, C., B.</td>
</tr>
<tr>
<td>91</td>
<td>Flute, Oboe, Piano I, Eb Clarinet, Bassoon, Trombone, Piano II</td>
<td>VI. I/II, Va, C., B.</td>
</tr>
<tr>
<td>101</td>
<td>Flute, Oboe, Piano I, Eb Clarinet, Bassoon, Trombone, Piano II, Piccolo</td>
<td>VI. I/II, Va, C., B.</td>
</tr>
<tr>
<td>104</td>
<td>Flute, Oboe, Piano I, Eb Clarinet, Bassoon, Trombone, Piano II, Piccolo, Percussion</td>
<td>VI. I/II, Va, C., B.</td>
</tr>
</tbody>
</table>

**Example 5.9** Instrumentation of G1 and CRU in *Central Park in the Dark*, m. 64-118.

Musical dynamics throughout m. 64-118 reveal another layer of juxtaposition between both musical materials. Group 1 is instructed to crescendo, beginning with *mf* and increasing to as much as *fff*. Ives notes that the string orchestra, although only presented with an initial written dynamic of *ppp*, “plays louder when the rest of the orchestra does.”\(^{13}\) These fluctuations in the CRU’s dynamics, however, are not and cannot be notated. Aligning dynamic markings in both groups is impossible due to the continuously changing temporal relationship. Ives, therefore, expected the string orchestra to *react* to Group 1’s dynamics in order for both musical materials to remain balanced. Performers in both groups exhibit two different types of attention in performance to obtain or assess their appropriate dynamic level: Group 1 visually attends to Ives’s written dynamics whereas the CRU reacts, adjusting their dynamics according to perceptions in the listening experience.

Traditional orchestral setups are often modified in Ives’s *Central Park in the Dark* to visually present two events happening simultaneously. Some conductors may intentionally widen the rift between the strings and the upstage players (Group 1) or re-arrange the orchestra into two adjacent semi-circles to bring players in Group 1 at an equal level with the strings. Even if the

\(^{13}\) Ives, *Central Park in the Dark*, 11.
players are not physically rearranged, there are noticeable changes in orchestral leadership. Some ensembles perform the work with a separate conductor for each section. Or, some of the conducting responsibility may be assigned to members of the orchestra.

Separate leaders are designated and notated throughout Leonard Bernstein’s score and the performance parts available through the New York Philharmonic Digital Archives. The score and parts even instruct designated leaders to stand or sit during the work as they lead a juxtaposed group. Although we do not have public records showing that the players physically observed these markings by standing or sitting, the extensive notations of these instructions in both score and parts heavily suggest that they were observed—in the event that the instructions were discarded, the performers would have most likely crossed out the instructions. In either instance, the notations clearly suggest that ensemble members entrain to separate leaders during certain sections in the work.

Leonard Bernstein, for example, assigned a leadership role to the piccolo. In mm.114-116 shown in Example 5.10, he instructs the piccolo player to stand and lead the percussion section as they break away from Group 1’s $\frac{3}{4}$ to play in $\frac{2}{4}$.\(^{14}\)

\(^{14}\) Leonard Bernstein, marked score for Charles Ives’s *Central Park in the Dark*. 
Example 5.10 Central Park in the Dark, mm. 114-116 © 1973 by Mobart Music Publications. Copyright © Renewed. All Rights Reserved. Used by permission of Mobart Music Publications.

The piccolo and percussion lines have a temporal process that is briefly juxtaposed against the other members of Group 1. Group 1’s tactus remains at the quarter-note unit whereas the piccolo and percussion players change to the dotted-quarter note unit. The piccolo and percussion players briefly travel at a pulse speed one-third slower than Group 1. Bernstein’s leadership assignment to the piccolo provides a visual presentation of the separate temporal process to show audience members another unique temporal feature in the score that may otherwise be lost.

Leonard Bernstein assigned another leadership role to the concertmaster and principal viola during the juxtaposed section, mm. 64-118. As evident by markings in the score and performance parts, both the concertmaster and principal viola potentially stood up in front of the orchestra, on separate sides of the conductor, to co-lead the CRU while Bernstein conducted the

\[15\] Ibid.
larger ensemble (Group 1). The concertmaster and principal viola potentially sat at the end of m. 118 to provide a visual cue for the CRU and Group 1 to reconvene at m. 119.

Designating separate leaders for Group 1 and the CRU during mm. 64-118 is helpful since the relationship between the temporal processes of both groups continuously changes in performance. Performers watch and/or listen to their group members in order to anticipate upcoming pulses within the temporal process appropriate to their assigned material. This method of musical entrainment results in selective attention; the performer chooses to focus on the temporal process of one group rather than on the process of another. Neisser explains that selective attention, to attend to one event and not another, is the result of the perceiver’s commitment to the events he/she has chosen. \(^{16}\) He states: “The decision to attend to one message rather than the other is a significant one, because it is an almost total commitment.” \(^{17}\)

Many performance parts available in the New York Philharmonic Digital Archives contain performance markings outlining whom the performers are to entrain to during m. 64-118. Every string part is marked at m. 64 “CONCERTMASTER + VIOLA LEADER TO LEAD STRINGS” and at m. 118 “CONCERTMASTER AND VIOLA LEADER SIT MARKING DIM. MOLTO.” \(^{18}\) Every percussion part is marked at m. 114 “PICCOLO STANDS + LEADS PERCUSSION.” \(^{19}\) In addition, notated or handwritten cues in performance parts during m. 64-118 are appropriate to each part’s ensemble. For example, the clarinetist has handwritten piano and trumpet cues but does not have cues from CRU members. \(^{20}\)

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\(^{16}\) Neisser, *Cognition and Reality*, 79-82. Neisser addresses the common saying “filter it out,” which he deems theoretically misleading, in Chapter 5 “Attention and the Problem of Capacity.”

\(^{17}\) Ibid., 82.

\(^{18}\) Leonard Bernstein, marked score for Charles Ives’s *Central Park in the Dark*.

\(^{19}\) Ibid.

\(^{20}\) Ibid.
Central Park in the Dark incorporates three temporal processes and entrainment experiences: (1) CRU members entraining to their temporal process, (2) Group 1 members adhering to the conductor’s temporal process, and (3) audience members listening to the composite sounds of both ensembles. All three musical experiences in Central Park in the Dark are analogous to the extra-musical experiences of Ives’s written program, which describes a setting where listeners can choose to (1) listen to sounds both perceivable and imperceptible [represented by the CRU], (2) sounds perceptible to humans [represented by Group 1], (3) or combinations of both. Ives states that the imagined experience in Central Park in the Dark occurs before the invention of combustion engines and cars, sounds that he believed would monopolize the experience. A monopolizing sound, such as a dominant musical line, may prevent listeners from being able to choose freely between events.

Ives, in his written program, includes the word “interrupted,” which characterizes the work’s aesthetic program. Ives writes: “The strings represent the night sounds and silent darkness—interrupted by sounds [the rest of the orchestra]. . . .” In the musical composition, the CRU, after playing their initial sequence alone, is interrupted by intermittent musical material played by Group 1 —these interruptions form the juxtaposition illustrated in Example 5.4. These interruptions are reflected at a much deeper level. The attention or perceptual cycles exhibited by listeners entraining to the CRU are continually interrupted and modified by the growing presence of G1. The listeners’ perceptual cycles continually adjust as listeners choose to entrain to other competing material defined by its own temporal process.

Performers in Central Park in the Dark must occasionally alter their attention to align with another group. The CRU performers react to the audio or visual cues signaling m. 119 to remain oriented in the work’s compositional design. Group 1 participants, after playing their
intermittent materials and ff trill, adjust their attention by entraining to the CRU for tempo and their next entrance.

Ives, by having the CRU jump to m. 119 during their eighth sequence, guarantees that all musical participants will experience at least one interruption during the piece’s duration. Naturally, the extent of the interruptions present in the musical experience depends upon the perceivers’ role, engagement, and choices—unpredictable factors that ensure unique musical experiences.

The CRU’s musical process is crucial to the understanding of the work’s aesthetic program. The continuous line that is present throughout the composition is interrupted in order to realign with another. The CRU’s process, in this way, behaves in a similar way to the musical participants’ experiences; the listeners interrupt their perceptual cycles as they choose to discard thoughts or events that they feel do not warrant their undivided attention (i.e., a “contemplation of nothing serious”).
The Unanswered Question

The original 1906 version of The Unanswered Question did not include the extra-musical program, the dialogue of perennial questions and fighting answers, that many audiences today associate with the work. The extra-musical program commonly attached to The Unanswered Question did not appear until the revised 1930-35 version of the score.¹ And even then, the extra-musical program was not included as a “program note” for audiences, but as a note for performers. This “Note to Performers,” which is published with the revised score, contains essential information concerning the piece’s performance practice. The program, which is seamlessly woven in, provides extra-musical experiences that guide and modify the performers’ practices—the full-length “Note to Performers” is provided in Appendix A.

Ives’s “Note to Performers” features three concepts: (1) “The Silences of the Druids – who Know, See, and Hear Nothing,” (2) “The Perennial Question of Existence,” and (3) “The Answers.” To simplify these titles, I will refer to them as (1) Silences, (2) Question, and (3) Answers. Ives allocates different tonal sounds for each concept. The Silences are assigned to the strings, which can range from a string quartet to a large orchestra. The Answers are scored for four flutes with an option for the bottom two staves to be rearranged for oboe and clarinet. Ives provides a list of potential solo instrumentalists to intone the Question: trumpet, oboe, clarinet, or English horn. Ives notes that any of these instruments may be used for the Question as long as the same instrument is not used in the Answers. Ives’s clear preference, however, is the trumpet, an easily distinguished tone since it is the only brass instrument scored in the piece. Ives allows

the number of instrumentalists for the Silences and Answers to vary. He states: “If a large string orchestra is playing, the full treble woodwind choir may be used at the discretion of the conductor, but in any case, only one trumpet plays.”² Ives instructs the orchestra to spatially separate the strings from the Question and Answers. He suggests placing the strings off-stage while member(s) of the Question and Answers remain onstage.

In addition to being spatially separated and different in timbre, the three groups (Silences, Question, and Answers) form a juxtaposition of temporal processes. The temporal process of each group and the alignment between them, however, is notated differently in the work’s original 1906 and revised 1930-35 versions — Paul Echols and Noel Zahler, who present both versions in their critical edition of *The Unanswered Question*, briefly address this notational problem in the “Preface.”³ In the analysis ahead, both versions are acknowledged to show that both notations support an underlying juxtaposition of temporal processes in *The Unanswered Question*.

The original version, which is based on Ives’s handwritten copy, does not provide barlines for the Question and Answers or align separate groups with bar lines. Instead, the Silences are barred and the entrances for the Answers and Question are marked with dotted lines.⁴ The revised version, however, adds barlines for the Question and Answers and aligns the barlines between the Question and Silences.⁵ In addition, the revised version contains the time signature $\frac{4}{4}$ for all three groups whereas the original version does not contain a time signature at all.⁶

³ Echols and Zahler, “Commentary,” 5.  
⁴ Ibid., 5.  
⁵ Ibid., 5.  
⁶ Ibid., 5.
Considering our discussions in Chapter 2, it seems odd that Ives would place his music within time signatures and add additional barlines many years after the compositional process had taken place. Furthermore, Ives’s handwritten copy of The Unanswered Question shows his initial attempts to align all three parts with barlines, an idea that he quickly abandoned after the first stanza — many of the initial barlines are erased.\(^7\) Ives instead used arrows to correlate the entrances of the Question and Answers with the Silences — these arrows are notated as dotted lines in the original version. The surprising addition of time signatures and barlines in the revised version may have been the work of the two copyists, George Roberts and his assistant (designated Copyist 18 by Kirkpatrick), who recopied the manuscript ca.1930-1935. To this date, there is no extant manuscript by Ives that shows the temporal changes in the revised version.\(^8\) Regardless, the addition of time signatures and inter-staff barlines does not obscure the different temporal processes unfolding simultaneously.

Ives assigns the strings (Silences) a tempo marking of “Adagio about 40-50=\(\frac{\text{-}}{\text{}}\)” in the original version and “Largo molto sempre” with the metronome marking about 50=\(\frac{\text{-}}{\text{}}\) in the revised version. As stated in his “Note to Performers,” Ives expected the strings to retain this very slow tempo marking throughout the work (“The strings play ppp throughout [sic] with no change in tempo”).\(^9\) He even instructs the strings, at the beginning of the score, to “keep very even time.”\(^10\) The problem arises when players combine this very slow tempo marking with their long durations in the score — the fastest note value in the strings is the quarter note. Although many moments may seem temporally stagnant from the listener’s perspective, the players are actively projecting subdivisions in quarter or eighth note values to remain in time.

\(^7\) Ibid., 5.
\(^8\) Ibid., 1-2.
\(^9\) Ives, “Note to Performers,” 10.
Ives, in his handwritten copy of the score, bars the strings throughout the piece at the whole note value (••••) — both printed editions incorporate these barlines. The barlines, which connect all four staves, group the string sections into a single musical line and enable the performers to align their temporal process. For example, the first violin and violas change pitch in the sixth measure. The second violinists and cellists, who continue to hold their pitch, can easily perceive the distance between the pitch changes and use this perception to anticipate the beginning of measure seven (see Example 6.1). In this way, the barlines guide the players’ attention process or perceptual cycles in order to keep the strings oriented in time. The strings—who adhere to a prescribed tempo and present throughout the work—serve as the Cyclic Reference Unit (CRU) for Ives’s *The Unanswered Question*.

**Example 6.1** *The Unanswered Question* (Original Version), mm. 4-8 strings only © 1984 by Peer International. International Copyright Secured. Reprinted by permission.

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11 Ibid., 5.
12 Revised version adds a slur connecting the viola’s G in m. 5 to their F in m. 6.
The solo instrumentalist pronouncing the “Question” is also assigned the same tempo marking (“Largo molto sempre”). The Question, although it shares the same tempo as the CRU, exhibits a different temporal process. Example 6.2 shows the original and revised versions of the Question.

The original version of the Question is not barred and contains two sets of quarter-note triplets (\(\begin{array}{c}3 \ 3 \ 3 \\ \hline \end{array}\)). This notated rhythm requires the performer to project six quarter-notes or twelve eighth-note subdivisions. The Question’s temporal process, if we directly compare note values between the Question and CRU, is one-third faster than a CRU member who projects four quarter-note subdivisions (\(\begin{array}{c}3 \\ \hline \end{array}\)) or one-third faster than a CRU member who projects eight eighth-notes subdivisions (\(\begin{array}{c}E \\ \hline \end{array}\)). Example 6.3 compares potential pulse streams between the Question and Silences. Please note that the soloist intoning the question has the capabilities and freedom to create combinations of pulses from these streams (such as those presented in A and B).

**Example 6.3 Potential Pulse streams for Trumpet (Question) and CRU in *Central Park in the Dark.*
The revised version, which visually aligns the Question and CRU with bar lines, places an additional triplet over the two triplets from the original version—causing the ratio between pulse streams to become larger.\(^\text{13}\) This additional triplet confirms the suspicion that Ives intended the Question’s temporal process to be different from the CRU. The third question in the revised version is missing two triplets.\(^\text{14}\) The third question, however, still contains a multiplet and requires the performer to project different subdivisions over the barline to execute the rhythm.

The Answers, while playing, do not match the tempo of the CRU and Question. Ives states in the original version: “Flute quartet in separate time, independently from string quartet but together.”\(^\text{15}\) The Answers instead undergo a series of progressing tempo changes, which are outlined in Example 6.4. Please note that the measure numbers correspond with the CRU’s measures and are approximate entrances for the Answers. The original version contains the following tempo changes: Andante (m. 26), Allegretto (m. 34), Allegro Moderato (m. 40), Allegro (m. 45), Allegro faster and faster (m. 52). The revised version contains many tempo markings from the original version and adds additional markings that increase the accelerando:

\begin{itemize}
  \item Adagio (m. 20), Andante (m. 26), Allegretto (m. 34), Allegro (m. 41), Allegro molto (m. 47), Allegro accel. to Presto (m. 52)
  \item Molto Agitando (m. 54) and Con Fuoco (m. 55).
\end{itemize}

\(^\text{13}\) The third statement (m. 31), which does not include the additional triplets, in the revised version is possibly an oversight by both copyists. See Echols and Zahler, “Commentary,” 5.
\(^\text{14}\) Echols and Zahler, “Commentary,” 5.
Example 6.4 Tempo markings in *The Unanswered Question*. Measure numbers correspond with the CRU’s measures and are approximate entrances for the Answers.

The tempo relationships between the Answers and the CRU are undeterminable and require separate leaders—Ives notes that a separate conductor or one of the flute players may lead the Answers.\(^{16}\) The Answers, unlike Group 1 in *Central Park in the Dark*, do not need to calculate and gauge their accelerando with metronome markings. The designated leader can perceive and recall tempos to perform the accelerando. For the first answer, the leader chooses a tempo that is slightly faster than the Question and CRU. The tempo for each subsequent answer becomes faster than the last. Naturally, these tempos will change with every performance. The performers, by adhering to their perceptions in the performance experience, can therefore construct the Answer’s large-scale accelerando without the need for precise calculations.

In addition to increasing tempo changes, the Answers form a gradual crescendo throughout the piece. Example 6.5 outlines the dynamic markings and approximate measure numbers for the entrance of each Answer. Ives describes this large written out accelerando and

\(^{16}\) Ives, “Note to Performers,” 10.
crescendo in his program: “. . . the hunt for ‘The Invisible Answer’ undertaken by the flutes and other human beings, becomes gradually more active, faster and louder through an animando to a con fuoco.”¹⁷ The sixth entrance is the only entrance that does not contribute to the written out crescendo and is perhaps what Ives referred to as the “Secret Conference”—we will discuss the “Secret Conference” in more detail shortly.¹⁸

<table>
<thead>
<tr>
<th>Entrance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6 “Secret Conference”</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure # (approx.)</td>
<td>20</td>
<td>26</td>
<td>34</td>
<td>41</td>
<td>47</td>
<td>49</td>
<td>52</td>
</tr>
<tr>
<td>Dynamic Marking</td>
<td>p</td>
<td>mp</td>
<td>mf</td>
<td>f &lt; ff</td>
<td>f &lt; ff &lt; sf</td>
<td>pp</td>
<td>f &lt; fff &lt; ffff</td>
</tr>
</tbody>
</table>

**Example 6.5** Dynamic Markings for the Answers in *The Unanswered Question*

Ives indicates that the entrances of the Answers can be varied: “This part need not be played in the exact time position indicated. It is played in somewhat of an impromptu way. . .”¹⁹

He even suggests that the Answers be played sooner after each Question, earlier than indicated in the score.²⁰ Ives’s suggestion indicates that he preferred the Answers to *entrain and react to the Question rather than the CRU* for their entrances. The Answers listen for each Question and place their entrances according to perceived events (aurally) instead of abiding by the written notation (visually).

The Answerers’ “Secret Conference” (approximately m. 49) is an example when the players must rely on their perceptions of the Question for their entrance (Example 6.6). The Answers, after their fifth statement, hold a pianissimo fermata. During this fermata, the players must wait and listen for the Question in order to enter and connect their first note with the Question’s last note. Ives, in addition, instructs the soloist stating the Question to hold his/her

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¹⁷ Ives, “Note to Performers,” 10.
¹⁸ Ibid., 10.
¹⁹ Ibid., 10.
²⁰ Ibid., 10.
last note until the “Answers” have entered. The coordination between the Question and Answers exhibited in the “secret conference” demonstrates Ives’s ability to orchestrate the performers’ natural abilities to perceive and react to musical events.


Ives describes this interaction between the Question and Answers as mocking in his “Note to Performers.”\(^{21}\) The Answerers *listen* and *repeat* the Question with a slight alteration in pitch class content—an experience similar to a child listening and repeating a sentence with an altered inflection. The Answerers, aware of Ives’s description, may further the mocking reference by altering their tone or turning to face the question. The Question, however, keeps the

\(^{21}\) Ibid., 10.
same tone of voice as instructed in Ives’s “Note to Performers:” “The trumpet intones ‘The Perennial Question of Existence,’ and states it in the same tone of voice each time.” This “mocking” instance in The Unanswered Question is one example of how Ives provides extra-musical experiences in his performance notes for performers to translate into musical experiences.

Ives, in the handwritten copy, incorporates a tempo change during the “secret conference.” He marks in m. 50: “Andante (faster f).” It is unclear whether Ives intended this tempo marking for the Questions or the Answers. Consequently, some editions, including the critical edition by Echols and Zahler, do not incorporate this tempo change. A separate tempo marking, from a performance perspective, could be appropriately applied in both cases. During the fermata, the Answers entrain to the Question, who is posed in a slower tempo. Marking the measures at a slower tempo would be appropriate since the Answerers have to anticipate sounds at a slower speed — performance parts, in general, include tempo changes even if players are resting or holding. On the other hand, if Ives intended the tempo marking for the Question, it would further differentiate the Question’s temporal process from the CRU.

While the Answers may vary their entrances, the Question is not granted the same flexibility. Ives states:

“The Answers” may be played somewhat sooner after each “Question” than indicated in the score, but “The Question” should be played no sooner for that reason.24

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22 Ibid., 10.
23 Echols and Zahler, “Commentary,” 7.
24 Ives, “Note to Performers,” 10.
The soloist intoning the Question entrains to the CRU for their entrances, which are marked with dotted lines in the original version. By coordinating the Question’s entrances and the CRU, the dialogue between the Question and Answers retains a pace that carries throughout the work. Otherwise, there is a danger of the dialogue between the Question and Answers ending too soon or continuing for too long.

Ives left the entrance of the last “Question” to the discretion of the performer. He states: “. . . ‘The Last Question’ should not be played by the trumpet until ‘The Silences’ of the strings in the distance have been heard for a measure or two.”²⁵ After the Answers finish their episode, the soloist waits until the string’s final G major chord is heard for a few moments before intoning the final question.

The CRU in The Unanswered Question, unlike the CRU in Central Park in the Dark’s, does not react to the other groups.²⁶ The closest instance where an interaction between the CRU and another group might have occurred would be in the final measures. Members of the CRU, upon reaching their final chord, continue to hold until they notice that the other groups have subsided. Even after this realization occurs, the CRU continues to hold. This leaves the end of the piece to the conductor’s or CRU’s discretion and not as a reaction to the final question.

Ives expected the strings in The Unanswered Question to remain focused on their musical process through selective attention; the strings choose to entrain to their independent temporal process and not react to the perceived processes or events exhibited by the Questions and Answerers. They are, as Ives states, the Druids “Who Know, See, and Hear Nothing.”²⁷ Ives’s orchestra setup, which removes the Silences from the stage instead of the Question and Answers,

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²⁵ Ibid., 10.
²⁶ Ives notes for the strings to continue holding their final chord and continue after the final question has been heard.
²⁷ Ives, “Note to Performers,” 10.
separates and visually obscures the temporal process of the competing groups. The strings’ attention, in Ives’s setup, is less likely to be influenced by the dialogue between the Question and Answerers.

The CRU’s behavior presents a possible aesthetic program for *The Unanswered Question*. Both extra-musical and musical forms present a continuous process that is independent and resilient—a process similar to our concentration while contemplating serious matters that demand our full attention.

**The Contemplations: A Summary**

Both contemplations, *Central Park in the Dark* and *The Unanswered Question*, are comprised of groups that differ in instrumentation and tempo: two in *Central Park in the Dark* (CRU and G1) and three in *The Unanswered Question* (Silences [CRU], Questions, Answers). In addition, these groups are often spatially separated in performance—whether Ives or performers request spatial separation. The compositional designs of both pieces are therefore similar to the described juxtaposition in the Fourth Symphony’s “Conductor’s Note”—a juxtaposition created by two different pianos that are spatially separated and play in different tempos. As presented in chapter 3, Ives believed that these juxtapositions enable listeners to choose between temporal processes in the juxtaposition or create a composite, choices in the listening process that ensure multiple entrainment experiences and personalized “views” for each participant.

The previous analyses outline juxtapositions of temporal processes in each work to explore the potential for multiple entrainment experiences for listeners and performers. While listeners are able to make many choices, performers selectively attend to remain oriented in time. Groups in juxtaposition selectively attend by choosing to entrain to one temporal process over
another—as is evident from the markings in performance parts available through the New York Philharmonic Digital Archives.

Performers maintain independent temporal processes through selective attention by (1) choosing a process and (2) entraining. The performers sustain, or “hold on” to, the chosen temporal process through sequences of perceptual anticipations, which are continually modified in experience. Selective attention is therefore a performance practice technique in line with Ives’s “holding your own” technique. Both techniques create the affect of performers exerting independent temporal processes. The techniques however are not analogous since many performers today can execute Example 2.5 without selectively attending.

Selective attention does not mean that performers cannot pick-up information or become aware of competing events. Neisser explains that, in listening to two messages simultaneously, a person can still pick up information from a competing line.28 He explains that selective attention is enabled between any two messages with a simple difference. He lists these differences as spatial separation, different voices, or dynamic levels—the three qualities that are regularly implemented in separating and defining groups in Ives’s compositions.29 Participants in these juxtapositions are able to pick up significant events from the secondary message while still attending and applying meaning to the primary message.30

Ives utilizes this concept in his performance practice exercise (Example 2.8). He instructs the performer to attune to various rhythms until they are able to create a composite. Performers therefore attune to the various rhythms through selective attention until they have perceived and developed the perceptual anticipations to know and execute the rhythms without

28 Neisser, Cognition and Reality, 82.
29 Ibid., 82.
30 Ibid., 82.
selectively attending. Ives’s performance exercise, in this way, creates a perceptual learning experience for performers to learn and grow their perceptual capabilities.

Selective attention is a choice performers often make when faced with juxtapositions of temporal processes. This choice is unique to each individual and its necessity and use is consequently dependent upon the performer’s skills and the unfolding experience. A novice, for example, may employ selective attention in a simple juxtaposition, such as two with three, whereas a professional would not. The primary juxtapositions of temporal processes in both contemplations—juxtapositions that naturally change with every experience—demand that performers selectively attend. But one could envision, as Ives often did, that performers might one day naturally evolve capabilities and skills that enable them to synchronize to multiple events at once.

As noted in each analysis, Ives describes and orchestrates several occasions in the contemplations where performers react or entrain. The table below summarizes these instances in both works. The arrow (→) in each instance is interpreted as “X entrains/reacts to Y.”

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Central Park in the Dark</th>
<th>The Unanswered Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRU → G1’s dynamics during juxtaposition</td>
<td></td>
<td>Answerers → Question</td>
</tr>
<tr>
<td>CRU → G1’s trill (m.118)</td>
<td></td>
<td>Question → Answers in “secret conference”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Entrainment</th>
<th>Central Park in the Dark</th>
<th>The Unanswered Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1 → CRU sequences 1-6 and 9-10</td>
<td></td>
<td>Question → CRU</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Answers → Question during “secret conference”</td>
</tr>
</tbody>
</table>

**Example 6.7** A Summary of Reaction and Entrainment in the Two Contemplations.
The CRUs mirror a characteristic in each work’s written program. In *Central Park in the Dark*, the CRU interrupts their chord sequence to jump to m. 119—a reflection of the interruption described in the extra-musical program. *The Unanswered Question*’s CRU does not alter their perceptual anticipations or temporal process by reacting or entraining to other groups. Their processes instead remain continuous and resilient as a representation of the Druids “Who Know, See, and Hear Nothing.”

These characteristic behaviors were further connected to Ives’s original titles—“A Contemplation of Nothing Serious” and “A Contemplation of a Serious Matter.” Ives, in *Central Park in the Dark*, ensures that all participants encounter one or more interruptions while attending—a reflection of our perceptual processes while contemplating unimportant matters. *The Unanswered Question* provides the opportunity for undivided attention—a reflection of our undisturbed perceptual processes as we contemplate serious matters. Both contemplations, in their musical and extra-musical forms, are therefore united in the expression of a common process; both are expressions of our innate abilities to perceive, which can be interrupted or remain continuous.
Fourth Symphony

Charles Ives, in his Fourth Symphony, weaves together compositional designs and techniques that span various stages of his artistic development. The Fourth Symphony’s orchestration, which is scored for nearly two hundred performers, falls second only to his Universe Symphony and offers a kaleidoscope of new tones made possible by the inclusion of two new instruments, the quarter-tone piano and Léon Theremin’s Etherwave-Theremin— instruments inspired by his father’s experiments and the composer’s interests in natural frequencies.

The work incorporates musical structures that span Ives’s oeuvre, from a conventional fugue composed during his musical studies at Yale to his later developments with interval structures.¹ The Fourth Symphony, composed shortly after Central Park in the Dark and The Unanswered Question, incorporates and expands many compositional techniques and performance practices found in the two contemplations (e.g. spatial removal of performers and cyclic reference units)—similarities that we will soon explore. Furthermore, Ives includes a lengthy footnote in his “Conductor’s Note,” published separately as “Music and its Future,” that outlines the composer’s concerns regarding the development and sharing of musical experiences.

Overall, the Fourth Symphony is a culminating experience that attests to Ives’s natural evolution and maturity as an artist. The work, rich in juxtapositions of temporal processes and spatial separations of a massive and diverse instrumentation, provides an optimal musical experience to encourage perceptual exploration and growth. Ives’s Fourth Symphony underlines

the composer’s artistic endeavors and generally stands as one of the greatest musical achievements of the twentieth century.²

“A Mathematical Problem”

Ives began his Fourth Symphony around 1910 and provided initial drafts to his copyist, Greinert, by 1916. The work, however, was significantly delayed, which Ives attributed to the pressing concerns of World War I: “. . . he [Greinert] was all discouraged and cast down. . . that his father’s country and his [had] come to make war. . . . Greinert was so troubled and discouraged [that] he couldn’t seem to work at all, made mistakes by the mile, and finally gave up.”³

Ives subsequently solicited copies from George Price and copyist known only as Reis, from which only two movements from Reis’s copy survive. These two movements, the Prelude and Comedy, served as the conducting score for the work’s 1927 partial premiere conducted by Sir Eugene Goossens.⁴ Following the work’s partial premiere, Henry Cowell, a close friend and musical admirer of Ives’s work, proposed a new engraving of the Comedy movement, to be published in the January 1929 edition of New Music.⁵

Both Cowell and Ives, however, struggled to find a copyist. This time, the struggle was not a byproduct of the war but due to the array of musical challenges that the Comedy movement presented.⁶ They reached out to publishing companies across America, from Pacific Music Press

³ Ives, Memos, 65.
⁵ Sinclair, “The ‘Comedy’” in Symphony No. 4, xxii.
(San Francisco) to Schirmer (New York), in a rush to meet the January deadline.\(^7\) It wasn’t until May 1928 that Ives met and hired Herman Langinger, a copyist at Fischer’s and Ranc.\(^8\)

Langinger, in his 1975 interview with Vivian Perlis, recalled his enthusiasm about the project:

> I had never seen music that revolutionary . . . Charles Ives’s work

> [Comedy from the Fourth Symphony] was a mathematical

> problem, and this was a terrific challenge to me. . . . I loved it! . . .

> He was happy to find someone who spoke the language. I

> remember that he said, “It’s a godsend to me.”\(^9\)

Langinger describes the work as a “mathematical problem” with a need for collaborators who \textit{speak} the language—descriptions that reflect the challenging degrees of deciphering and decision making that Ives routinely left to those encountering his music. James B. Sinclair, the executive editor for the 2011 critical edition, similarly described challenges while preparing the Comedy movement for the critical edition, nearly sixty years later.\(^10\) Sinclair expressed the difficulties in notating the Fourth Symphony’s temporal dimensions. The computer programs used to digitally process in the 1990’s were unable to process the movement’s complex temporal dimensions.\(^11\) The edition was consequently delayed until Thomas Brodhead agreed to engrave

\(^7\) Ibid., 9.
\(^8\) Sinclair, “The ‘Comedy,’” xxii.
\(^9\) Langinger’s interview in \textit{Two Men for Modern Music}, 9.
the score and parts.\textsuperscript{12} Several examples presented here are copied by hand since many popular music notation software programs available today still have difficulty in notating Ives’s rhythms.

The temporal challenges encountered in the Fourth Symphony extend well into the work’s performance practices. Even after the score is laid, performers must interpret and prepare for the work’s temporal and spatial challenges, such as assigning pulse streams to multiple conductors. Ives regularly engaged performers and writers on the temporal dimensions in the Fourth Symphony—even to the point of helping performers practice. Elliott Carter recalled that Ives practiced the Comedy movement’s complex rhythms with the New York Philharmonic percussionists in preparation for the work’s 1927 partial premiere: “Ives had invited the New York Philharmonic percussionists to his house and beaten out the complicated rhythms on the dining room table until they learned them.”\textsuperscript{13}

The Fourth Symphony’s program note places an emphasis on the work’s temporal dimensions, specifically places rhythm over the subjects of pitch and formal analysis. The program note is generally assumed to have been dictated by Ives and written by Henry Bellamann. The program note highlights specific intricacies in and about the work that are in line with Ives’s understanding, but certain words that Ives does not regularly use in his musical discussions may be descriptive metaphors inserted by Bellamann. For example, the passage describes the presence of multiple rhythmic “planes.” These multiple “planes,” upon which rhythms are laid, is considered here a descriptive metaphor for what Ives called “rhythm in its bigger sense” and what I am calling multiple temporal processes.\textsuperscript{14}

\begin{footnotes}
\item[12] Ibid., xii.


\end{footnotes}
Melody, harmony, orchestral color and thematic development are used as contributing factors to the rhythmic structure[,] which is of unprecedented complexity. There is a simultaneous movement of quasi-independent rhythms on four or five planes. These are not meant to be heard separately. The blend of the cross rhythms, of long and short rhythmic curves, promotes the intricate and exciting [Comedy] movement.15

Performers have described the work’s challenging performance experiences as a result of the simultaneous unfolding of multiple temporal processes. Eugene Goossens, according to Elliott Carter, struggled with the temporal aspects in the Comedy movement: “Goossens . . . sat up all one night with a towel around his head trying to figure out how to keep the orchestra together in the places where the barlines do not coincide.”16 Goossens described the experience to Paul Moor: “I remember I wound up beating two with my stick, three with my left hand, something else with my head, and something else again with my coat tails.”17 Goossens even acknowledged the work’s complexities in a letter to Ives:

I hope sometime in the near future I shall have the pleasure of conducting the entire work and in the meantime hope very much

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15 “Bellamann’s Program Note,” in Symphony No. 4, xiii.
that your pen will not be idle and that you will soon be furnishing us with further problems for conductorial solution.\footnote{Ives Papers, letter of Eugene Goossens to Ives, 13 February 1927 and as quoted in Sinclair, “General Preface,” x.}

Conducting dilemmas emerging from the Fourth Symphony’s juxtapositions were a primary topic in Vivien Schweitzer’s \textit{New York Times} interview with Alan Gilbert, the current music director of the New York Philharmonic. Gilbert explains that the work’s simultaneous events require the conductor to deter from traditional conducting practices by choosing which musical materials to entrain to and allowing other materials to unfold without their supervision—choices that indicate selective attention:

Mr. Gilbert . . . said that “part of the challenge is getting rid of the usual modalities of conducting.” Instead of trying to hear and control everything, the conductor must tune out some of the disparate elements that unfold at the same time. “So many things are going on simultaneously with no regard for other things happening, which makes it exciting to listen to,” Mr. Gilbert added. “Even when it doesn’t sound like things are together, they have to work together.”\footnote{Vivien Schweitzer, “Chaos Assembled, Beauty Emerges,” \textit{New York Times}, April 14, 2013, New York Edition.}

\footnote{Ives Papers, letter of Eugene Goossens to Ives, 13 February 1927 and as quoted in Sinclair, “General Preface,” x.}
Ives considered the work’s juxtapositions, created by spatially separated groups and the unfolding of simultaneous events, an important technical and aesthetic aspect of the Fourth Symphony. Ives emphasizes this point in his *Memos*:

Technically, an important matter that has to do with the playing of this symphony, especially the second and fourth movements, is that of varying degrees of the intensities of various parts or groups.\(^{20}\)

In the work’s “Conductor Note,” Ives reveals numerous compositional and performance techniques that he utilizes to differentiate these various parts or groups. Several of these techniques include spatial separation and juxtapositions of temporal processes—techniques regularly implemented to create “pictures in sounds.”

For example, Ives assigns “Prominence” markings, labeled A-G in the Comedy movement. Ives preferred that these prominence markings be realized through spatial relationships rather than written dynamics—a preference explored by the writers of the Fourth Symphony critical edition.\(^{21}\) Ives explains that spatial relationships are more favorable than dynamics in augmenting the aesthetic experience:

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It is difficult to reproduce the sounds and feeling that distance
gives to sound wholly by reducing or increasing the number of
instruments or by varying their intensities.

Experiments. . . as when a conductor separates a chorus from the
orchestra or places a choir off the stage or in a remote part of the
hall, seem to indicate that there are possibilities in this matter that
may benefit the presentation of music, not only from the standpoint
of clarifying the harmonic, rhythmic, thematic material, etc., but of
bringing the inner content to a deeper realization (assuming for
argument sake, that there is an inner content).  

Ives includes “entrainment cues”—musical materials designed to help the performers’
attending process—to help groups perform their independent temporal processes. For example,
he instructs the snare drummer to entrain, to anticipate and synchronize, to the bass drummer’s
pulse:

[In Comedy movement, beginning in m. 99] If the Snare-drum
player takes the unit of the Bass-drum as his basic pulse, it will be
easier to play.  

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22 Ives, “Conductor’s Note,” in *Symphony No. 4*, xxviii.
23 Ibid., xxvi.
A small portion of this section, mm.99-101 of the Comedy movement, is included in Example 7.1. The bass drummer plays a continual series of dotted-quarter notes. These predictable durations provide a steady pulse for the snare drummer to anticipate and fit in their multiplets between each pulse. As described by Ives, the snare drummer, instead of taking the quarter-note unit commonly anticipated in \( \frac{4}{4} \), must entrain to the dotted-quarter note unit of the bass drummer. The snare drummer’s temporal process is therefore one-third or an eighth note slower than other groups entraining to the quarter-note unit.

Example 7.1 Snare and Bass Drum over quarter note pulse, Comedy mm. 99-102. © 1932 (Renewed) by Associated Music Publishers, Inc. (BMI) International Copyright Secured. All Rights Reserved. Used by Permission.

Ives’s Fourth Symphony and his “pictures in sounds” incorporate juxtapositions of temporal processes and the spatial separation of groups—compositional features that Ives believed exploited a person’s innate abilities to entrain. Although he did not label his Fourth Symphony a “picture” or “picture in sounds,” Ives reveals in the “Conductor’s Note” that the same techniques were implemented with similar intentions. He implements spatial separations and juxtapositions of temporal processes in the Fourth Symphony to enable different perspectives and aesthetic experiences. He states that these different perspectives were taken into consideration while designing the Fourth Symphony and are desired in the work’s musical experiences:
When one tries to use an analogy between the arts as an illustration, especially of some technical matter, he is liable to get in wrong. But the general aim of the plans under discussion is to bring various parts of the music to the ear in their relation to each other, as the perspective of a picture brings each object to the eye.²⁴

In the Fourth Symphony, Ives turns away from extra-musical illustrations to mature and expand the dialogue between life’s perennial questions and their potential for answers—a theme carried over from The Unanswered Question. The question and answer dialogues in the Fourth Symphony unfold quite differently. The Unanswered Question presents a solitary question with answers provided by “other human beings.” The Fourth Symphony provides multiple questions (What? and Why?) with answers provided by our existence. The questions are presented in the Prelude with each subsequent movement—Comedy, Fugue, and Finale—providing an answer:

The aesthetic program of the work is that of many of the greatest literary and musical masterpieces of the world—the searching questions of What? And Why? which the spirit of man asks of life. This is particularly the sense of the prelude. The three succeeding movements are the diverse answers in which existence replies.²⁵

The original order of the answers is different than the order commonly played today. The original order, Prelude-Fugue-Comedy-Finale, was included in the work’s original program note:

²⁵ “Bellamann’s Program Note,” xiii.
“It [the Fourth Symphony] consists of four movements,—a Prelude, a majestic fugue, a third movement in comedy vein, and a finale of transcendental spiritual content.”  

Ives, as evident in his writings, later switched the order of the inner movements (Fugue and Comedy). The revised order matches the Fourth Symphony’s layout to the drama that unfolds in the Concord Sonata and other works. Both the Fourth Symphony and Concord Sonata incorporate middle movements that present a “chaos” movement (Comedy and Hawthorne) followed by an “order” movement (Fugue and The Alcotts). The dramatic unfolding, from “chaos” to “order,” seems to be an aesthetic experience that Ives appreciated.

**Prelude**

Two spatially separated groups, the Main Orchestra and Distant Choir Ensemble, play the Fourth Symphony’s Prelude:

<table>
<thead>
<tr>
<th><strong>Main Orchestra</strong></th>
<th><strong>Distant Choir Ensemble (Vox Angelica)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flute</td>
<td>5 Violins</td>
</tr>
<tr>
<td>Clarinet in A</td>
<td>Harp (a second harp optional)</td>
</tr>
<tr>
<td>C Trumpet</td>
<td></td>
</tr>
<tr>
<td>Trombone</td>
<td></td>
</tr>
<tr>
<td>Celesta</td>
<td></td>
</tr>
<tr>
<td>Timpani</td>
<td></td>
</tr>
<tr>
<td>Bass Drum &amp; Cymbals</td>
<td></td>
</tr>
<tr>
<td>Voices</td>
<td></td>
</tr>
<tr>
<td>Solo Piano</td>
<td></td>
</tr>
<tr>
<td>Violin I</td>
<td></td>
</tr>
<tr>
<td>Violin II</td>
<td></td>
</tr>
<tr>
<td>Viola</td>
<td></td>
</tr>
<tr>
<td>Violoncello</td>
<td></td>
</tr>
<tr>
<td>Contrabass</td>
<td></td>
</tr>
</tbody>
</table>

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26 Ibid., xiii.


28 Stephen Blum similarly notes this motion, “temporary points of repose, followed by a focusing of earlier tensions against the altered energy level,” is a common approach in Ives’s compositions to direct energy toward its final moments. See Blum, “Ives’s Position in Social and Musical History,” 471.
The Main Orchestra and Distant Choir have a brief dialogue that spans the first three bars—this dialogue is outlined in Example 7.2. The Main Orchestra begins the movement in $\frac{3}{4}$ with the tempo marking “Maestoso ($q=\text{about 60}$).” Members of the Distant Choir, while waiting for their entrance, entrain to the Main Orchestra in order to enter in m. 2. Once the Distant Choir has entered, the Main Orchestra stops playing and rests in m. 3. During this rest, the Main Orchestra’s conductor entrains to the slower pace of the Distant Choir, who Ives marks “a little slower.” The conductor listens and waits for the Distant Choir to complete a phrase from the chorus of Lowell Mason’s *Bethany*, “Nearer My God to Thee”—a tune that many concertgoers during Ives’s lifetime were likely to recognize. After the line is completed, the Main Orchestra reenters and both groups continue *a tempo* (Maestoso) for six pulses.

The two groups, beginning in m. 4, create a large-scale juxtaposition of temporal processes that lasts until m. 26. The Main Orchestra, at the end of m. 4, is instructed to “poco ritardando (very slight)” while the Distant Choir is told not to slow down (“non ritardando”). Ives instructs the Distant Choir from mm. 5-26 to maintain the initial tempo marking of *Maestoso* and to play “in even time.” The Main Orchestra, in m. 5, plays “a very little faster” and changes to a $\frac{2}{4}$ ($\frac{6}{8}$) time signature. The Main Orchestra, beginning in m. 21, gradually ritardandos with several *poco tenuto* markings until measure 27. Ives explains that the tempo relationships between the two ensembles during this section, m. 5-26, are not aligned. Example 7.2 shown below outlines the temporal relationships between both groups for the first twenty-seven measures of the Prelude.

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29 Charles Ives, *Symphony No. 4*, 1.
30 Ibid., 1.
31 Ibid., 2.
32 Ibid., 2.
33 Ibid., 2.
In order for both ensembles to realign, the Distant Choir Ensemble repeats, if necessary, musical material that Ives designates with repeats until the Main Orchestra arrives at the fermata (m.27). The Distant Choir can easily perceive the arrival of m. 27 by reacting to the Main Orchestra’s question “Watchman, aught of joy or hope?” sung by the choir and/or played by the trumpet in mm. 25-26.

<table>
<thead>
<tr>
<th>Measures</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5-16</th>
<th>17-20</th>
<th>21-22</th>
<th>23-24</th>
<th>25-26</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distant Choir Ensemble</strong></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Main Orchestra</strong></td>
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</tbody>
</table>

Example 7.2 Tempo relationships between the Distant Choir Ensemble and Main Orchestra in the Prelude, Fourth Symphony, mm.1-27.

The interactions between both ensembles, in mm. 5-26, are similar to the two ensembles in Central Park in the Dark (Group 1 and CRU). The Fourth Symphony’s Distant Choir reacts to the Main Orchestra in a similar way that the CRU in Central Park in the Dark reacts to Group 1. The Distant Choir reacts to the question proposed by the Main Orchestra, “Watchman, aught of joy or hope?” just as the CRU needed to react to Group 1’s trill that prompts m.119. The Fourth Symphony’s Distant Choir, like Central Park in the Dark’s CRU, adjusts their musical material in order to facilitate the jump to the designated measure. Both ensembles end the juxtaposition of temporal processes with a fermata over a rest (the “Complete Pause” in m. 27) to facilitate the realignment of multiple temporal processes.

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34 Ibid., 2.
There are also differences between the two ensembles in the Fourth Symphony and *Central Park in the Dark*. The Fourth Symphony’s Main Orchestra decelerates whereas Group 1 in *Central Park in the Dark* accelerates. The Fourth Symphony’s Distant Choir, unlike the CRU in *Central Park in the Dark*, does not begin the movement and must entrain to the Main Orchestra for their initial entrance and tempo. Since neither ensemble is continuous or retains a prescribed tempo, there is no cyclic reference unit in the Fourth Symphony’s Prelude.

In addition to the large-scale juxtaposition of temporal processes created between the Main Orchestra and Distant Choir, the Main Orchestra contains several lines that are seemingly independent. For example, the solo pianist in mm.5-8 projects five quarter note subdivisions per measure although the time signature is $\frac{4}{8}$ ($\frac{1}{4}$). The flautist, in mm.11-16, plays an eighth-note triplet and two eighth rests ($\frac{1}{8} \frac{1}{8} \frac{1}{8}$) to create syncopation—similar to Ives’s description and notation of two bands marching.\(^{35}\)

In mm. 17-26, there are several temporal processes unfolding simultaneously in the Main Orchestra. The flautist and first violinists (upper staff) project four subdivisions per $\frac{4}{8}$ (§) bar. The majority of the strings and solo piano take the quarter-note unit, which is common in $\frac{4}{8}$. The trumpet, choir, and drums take a dotted-quarter note unit, which is common in $\frac{8}{8}$. The different temporal processes exhibited by each group coincide at each barline.

These contrasting temporal processes within the Main Orchestra and the juxtaposition created with the Distant Choir continue until the “Complete Pause,” a fermata over an eighth rest, in measure 27. Ives describes this silence in the work’s program note:

\(^{35}\) See Chapter 2, pg. 34.
The prelude is brief, and its brooding introspective measures have a searching wistful quality. It would seem to derive from the silence of a Sabbath hour when the soul, beset and weary of earthly vexations, turns toward the Infinite, toward life and in upon itself with questions of the ultimate meaning of existence.\textsuperscript{36}

Perhaps the “brooding introspective measures” reflect the performers’ individual experiences as they project and adjust their contrasting temporal processes—a desired effect of Ives’s \textit{Holding Your Own} technique. Ives uses the word “Complete” and not the traditional “Grand” (“Grand Pause”). Perhaps Ives’s choice of words reflects the need for the anticipations in the temporal processes to be “completed” by resolving into silence.

Both ensembles, after the juxtaposition of temporal processes and “complete pause,” continue together in time until the last measure. Here, Ives instructs the Distant Choir to wait until the Main Orchestra has reached their last chord and begin their decrescendo before playing their final notes: “[Distant Choir] plays only when vibrations of last piano chord are dying away—not necessarily on [the] beat [as notated].”\textsuperscript{37} Ives instructs the Main Orchestra to “die away and stop just after the Harp [in Distant Choir] is struck.”\textsuperscript{38} “This final dialogue between the Distant Choir and Main Orchestra is paralleled with the final measures of \textit{The Unanswered Question}. The Question, like the Distant Choir, waits for the strings’ last chord to be heard

\textsuperscript{36} “Bellamann’s Program Note,” xiii.
\textsuperscript{37} Ives, \textit{Symphony No. 4}, 8.
\textsuperscript{38} Ibid., 8.
before intoning the final question while the performers of the CRU, like the Fourth Symphony’s Main Orchestra, hold their final pitches.39

In the Prelude, the Main Orchestra features a popular Lowell Mason hymn, *Watchman* (“Watchman, Tell Us of the Night”), which is sung by the choir and/or played by the trumpet for the majority of the movement.40 Ives notes in mm. 1 and 17 that he preferred the work to be performed without voices—markings made before the work’s 1927 partial premiere.41 Removing the voices would leave the trumpet playing the melody alone and remove the text entirely from the listening experience for listeners who do not know the hymn. The text, however, would still be visible to performers and in the memory of listeners who know the lyrics. Many orchestras today choose to perform the Fourth Symphony with voices—giving all musical participants access to the hymn’s lyrics and Ives’s alterations.

Ives explains in his *Memos* that his father inspired his habit of removing texts from songs, particularly in his “songs with or without words.” He remembered his father teaching songs to singers and choirs by playing them on his horn. His father, according to Ives, insisted that the “words should be known and thought of while playing”—a practice that, according to Ives, enabled his father to “sing” works better than vocalists.42 Although the words are not sung, the performer allows the awareness of the text and the experience of singing it to modify their performance. Even though the Prelude is not a song, there is a striking resemblance between the performance practice of this movement and this memory of Ives’s father. In the event that the

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39 See pg. 114.
40 William Brooks, “The ‘Prelude’” in *Symphony No. 4*, xvi-xvii.
41 Ibid., xvii.
42 Ibid., 127.
choir does not sing, a lone trumpet player intones the melody and is likely aware of the song’s lyrics, which are provided in the score.\textsuperscript{43}

The \textit{Watchman} hymn in the Prelude presents a dialogue between a traveler who asks questions and a watchman who answers—a dialogue concurrent with the work’s aesthetic program. Ives has rearranged the hymn’s lyrics as seen in comparing Ives’s verses with John Bowring’s original text:

\begin{tabular}{ll}
\textbf{John Bowring’s Verses:} & \textbf{Ives’s Verses in Prelude:} \\
Watchman, tell us of the night, & Watchman, tell us of the night, \\
What its signs of promise are. & What its signs of promise are. \\
Trav’ler, o’er yon mountain’s height, & Trav’ler, o’er yon mountain’s height, \\
See that glory-beaming star. & See that glory beaming star! \\
Watchman, does its beauteous ray & Watchman, aught of joy or hope? \\
Aught of joy or hope foretell? & Trav’ler, Yes! Trav’ler, Yes! \\
Trav’ler, yes; it brings the day, & Trav’ler, Yes; it brings the day, \\
Promised day of Israel.\textsuperscript{44} & Promised day of Israel. \\
Dost thou see its beauteous ray? & \\
\end{tabular}

Musical participants may notice Ives’s changes since the hymn was once very popular. The three repetitions of the watchman’s answer (“Trav’ler, Yes”) foreshadow the three answers or movements to come. John Bowring’s original lyrics present one question (“Watchman, doth its beauteous ray aught of joy or hope foretell?”), which Ives has split into two (“Watchman, aught of joy or hope?” and “Dost thou see its beauteous ray?”). Both questions occur at pivotal points in the movement. The first question (“Watchman, aught of joy or hope?” mm.25-26) serves as the entrainment cue for the Distant Choir and prepares the “Complete Pause” in m. 27.

\textsuperscript{43} Ibid., 127.

\textsuperscript{44} John Bowring’s “Watchman, Tell Us of the Night,” as found in hymn #331 in Episcopal Church, \textit{The Hymnal: Revised And Enlarged, As Adopted by the General Convention of the Protestant Episcopal Church In the United States of America In the Year of Our Lord, 1892} (New York: E. and J. B. Young, 1889), 276.
The final question (“Dost thou see its beauteous ray?”), which is repeated from m. 34 to the end, concludes the movement with a question that will initiate the succeeding answers.\(^{45}\) The final question additionally encourages the participants to inquire about their musical experience—a critical component, as we will see, in unlocking Ives’s aesthetic program.

Ives’s inclusion of the text, regardless of whether or not it is sung, is crucial to the understanding the work’s compositional design. The text and its modifications outline the work’s aesthetic program and prepare musical participants for the three answers that are to come.

**Comedy and Fugue**

The Comedy movement shares musical materials and extra-musical content with two of Ives’s solo piano pieces: the second movement (“Hawthorne”) of the *Concord Sonata* and the “Phantasy” for solo piano.\(^{46}\) Ives, in his *Memos*, attests to sharing musical materials between all three compositions.\(^{47}\) In addition to musical material, the three compositions share a program based on Nathaniel Hawthorne’s *Celestial Railroad*, a comedic parody of John Bunyan’s allegory *The Pilgrim’s Progress*, which outlines an individual’s religious journey to salvation. Thomas M. Brodhead, in his article “Ives’s Celestial Railroad and His Fourth Symphony,” provides insightful analyses of all three works with an outline that chronologically maps Hawthorne’s story against the unfolding events in the Comedy movement.

The Fourth Symphony’s program note notes this connection between the Comedy and Hawthorne’s *Celestial Railroad*, explaining that the two works are similar in their comedic experiences:

\(^{45}\) Burkholder, *All Made of Tunes*, 390.
\(^{47}\) See Ives, *Memos*, 66, 82, and 204. For discussions, see Brodhead, “Ives’s Celestial Railroad and His Fourth Symphony,” 395.
[The Comedy] . . . is not a scherzo in any accepted sense of the word. . . It is a comedy in the sense that Hawthorne’s Celestial Railroad is comedy.48

Bunyan’s story outlines a single journey to the “Celestial City” whereas Hawthorne’s story juxtaposes two. The original allegory is centered on a young pilgrim named “Christian” who travels through the “City of Destruction” and is eventually admitted into the “Celestial City.” Hawthorne’s Celestial Railroad is set in a dream and juxtaposes the narrator’s high-speed ride on a luxurious train with the grueling trudge of two pilgrims. Hawthorne’s modern interpretation has an unexpected twist at the end. The train carrying the narrator, who is accompanied by “Mr. Smooth-it-away” (the devil in disguise), leads him to hell. The two pilgrims, however, have chosen to walk and not partake in the city’s conveniences or materialist pleasures—choices that grant them admission into the “Celestial City.” The juxtaposition of these two quests—a walk to salvation and rapid ride to hell—gives the Celestial Railroad its humorous tone and is described in the Fourth Symphony’s program note.

The following excerpt from the program note describes a juxtaposition of temporal processes, a “contrast,” between the Pilgrim’s “slow episode” and “exciting, easy and worldly progress.” In addition, the words “Fourth of July,” “brass bands,” and “drum corps” point to previous works and descriptions that include juxtapositions of temporal processes: Fourth of July, Ives’s description of two bands marching, and the Universe Symphony’s “pulse.”

48 “Bellamann’s Program Note,” xiii.
Indeed this work of Hawthorne’s may be considered as a sort of incidental program in which an exciting, easy, and worldly progress through life is contrasted with the trials of the Pilgrims in their journey through the swamp. The occasional slow episode—Pilgrims’ hymns—are constantly crowded out and overwhelmed by the former. The dream, or fantasy, end with an interruption of reality—the Fourth of July in Concord—brass bands, drum corps, etc.

The presence of numerous temporal processes in the Comedy movement is evident from the very beginning. The Comedy begins with a one-page introduction (mm. 1-5) marked “Allegretto (♩ of 8 – about 50).”\(^49\) Ives remarks in the “Conductor’s Note” that the contrabass section leads the introduction: “The recitative of the Basses controls this page.”\(^50\) The contrabass part, unlike those of the other instrumentalists, is not barred or assigned a time signature and spans seventeen quarter-notes. Numerous groups with varying time signatures must complete their assigned musical material within the duration of the Bass recitative. Example 7.3 lists these groups according to their time signatures and the total number of measures to be played. Every group ends in m.5 with a fermata, which enables the temporal processes to realign in m.6. Ives does not provide a fermata for the contrabass but instructs them to play through the hold to enable a “blurring” affect into m. 6.\(^51\)

\(^{49}\) Ives, *Symphony No. 4*, 9.
\(^{50}\) Ives, “Conductor’s Note,” xxv.
\(^{51}\) Ives, “Conductor’s Note,” xxv.
<table>
<thead>
<tr>
<th>Time Signature</th>
<th>Instruments</th>
<th>No. of Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\frac{8}{4}$</td>
<td>Celesta, Gongs, Solo Piano, Violins</td>
<td>5</td>
</tr>
<tr>
<td>$\frac{6}{8}$</td>
<td>Clarinet 1 and 2, Secondo Orchestra Piano, High and Low bells, and Triangle</td>
<td>6</td>
</tr>
<tr>
<td>$\frac{2}{4}$</td>
<td>Primo Orchestra Piano</td>
<td>5</td>
</tr>
<tr>
<td>$\frac{1}{2}$</td>
<td>Bassoon (or Tenor or Baritone Saxophone)</td>
<td>2</td>
</tr>
<tr>
<td>Not Barred</td>
<td>Contrabass</td>
<td>1</td>
</tr>
</tbody>
</table>

**Example 7.3** Groups according to their time signatures in Comedy movement’s introduction, mm.1-5.

The Comedy movement’s introduction is similar to the *Universe Symphony*’s “pulse;” both sections contain a juxtaposition of temporal processes that occurs during an assigned duration. The duration of the Comedy’s introduction is defined by the duration of the contrabass part just as the duration of the “pulse” is defined by the duration of the low bell. The other members of the ensemble respond to these durations by holding or discontinuing their material in order to realign.

There are additional parallels between the compositional design of the Fourth Symphony’s Comedy movement and the *Universe Symphony*’s “pulse.” The Fourth Symphony’s program note describes a layering of rhythms or durations that arises from the gong and other metallic tones. This layering of percussive sounds in the Comedy movement is very similar to the instrumentation and layering of durations in the *Universe Symphony*’s “pulse.”

Basically there is a rhythm marked by gongs, and deeper metallic timbres. Above that the drums, then smaller drums, and an Indian drum. Above these the woodwind is used rather as percussion—
brass similarly. There is a notable absence from the score of the lyrical voices of oboe and French horn.\textsuperscript{52}

There are multiple sections throughout the Comedy where a metallic timbre (e.g. gong, low bells, triangle) marks a rhythm or duration. In mm. 38-54, the gong strikes at every ninth quarter-note (\(\frac{1}{9}\)) until m. 55 when the rhythm changes to every other quarter-note (\(\frac{1}{2}\)). The gong exits in m. 59 leaving the low bell to intone the whole note (\(\frac{1}{2}\)) from mm.57-63. The low bell, in m. 63, eclipses its last attack with the triangle’s first attack. The triangle plays an eighth value at every fifth quarter note (\(\frac{1}{5}\)) in mm.63-71, coinciding with the final attack in each group of five quarter notes in the Contrabass line.

The gong exits in m. 59 leaving the low bell to intone the whole note (\(\frac{1}{2}\)) from mm.57-63. The low bell, in m. 63, eclipses its last attack with the triangle’s first attack. The triangle plays an eighth value at every fifth quarter note (\(\frac{1}{5}\)) in mm.63-71, coinciding with the final attack in each group of five quarter notes in the Contrabass line.

The low register of the piano is used in a similar manner. Beginning in m. 96, the left hand of the secondo orchestra piano plays a continual dotted-quarter unit (\(\frac{1}{4}\)) until m. 108. Ives instructs the player to play in a percussive manner: “as a drum—short sharp blows, not especially loud, but incisive.”\textsuperscript{53} This percussive use of the piano stems from Ives’s childhood experiences of playing drum parts on the piano.\textsuperscript{54} Ives would often practice snare and bass drum parts together with different tonal combinations—Philip Lambert explores these various combinations in his article “Ives’s ‘Piano-Drum’ Chords.” Kirkpatrick notes in his edition of the Memos that Ives’s “piano-drum” writing appears in numerous pieces, including this section of the Fourth Symphony.\textsuperscript{55}

Ives utilizes these continual durations to layer temporal processes. To demonstrate, let’s look at mm. 75-80. The gong and Indian drum are barred in \(\frac{1}{2}\). The gong plays the rhythm \(\frac{1}{4}\) while the Indian drum plays its diminution \(\frac{1}{4}\). The two instrumentalists would remain in time by adjusting their process so that their part coincides at every half note—an experience similar to

\textsuperscript{52}“Bellamann’s Program Note,” xiii.
\textsuperscript{53}Ives, Symphony No. 4, 40.
\textsuperscript{54}Ives, Memos, 42. See also Philip Lambert “Ives’s ‘Piano-Drum’ Chords,” Intégral 3 (1989): 1-36.
\textsuperscript{55}See Kirkpatrick’s fn.2 in Ives, Memos, 42.
dividing half notes into quarters. The Indian drum produces articulated points twice as often as the gong—giving the perception that the Indian drum’s temporal process is twice as fast.

The triangle is assigned a different time signature and rhythm. The triangle is barred in $\frac{6}{8}$ with the rhythm $\frac{3}{4}$. The triangle’s part coincides with the gong at every ninth attack (8:3) and the Indian drum at every fourth attack (4:3). The triangle player adjusts their temporal process to the Indian drum since the beats in both temporal processes coincide at earlier intervals, giving the players more opportunities to adjust their temporal process.

Example 7.4 Gong, Indian drum, and Triangle, Comedy movement mm.75-77, repeated in mm.78-80.

The temporal processes for the rest of the orchestra originate from these continual rhythms. The viola section doubles the Indian drum’s rhythm ($\frac{3}{4}$) while the bassoons and low strings play “off-beats” ($\frac{1}{4}$). These instrumental parts are notated in $\frac{4}{4}$ with the quarter-note ($\frac{1}{4}$) serving as the unit. The secondo orchestral piano plays in $\frac{3}{4}$ while keeping the quarter-note unit exhibited by the Indian drum and gong. The clarinets, trombone, and solo piano play in $\frac{6}{8}$ with the pulse at the dotted eighth-note unit ($\frac{3}{8}$)—the duration articulated by the triangle.
### Example 7.5 Instrumentation groups according to units and time signatures, Comedy movement, mm. 75-77.

<table>
<thead>
<tr>
<th>Quarter-Note Unit (♩)</th>
<th>Dotted Eighth Note Unit (♩)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="example.png" alt="Quarter-Note Unit" /></td>
<td><img src="example.png" alt="Dotted Eighth Note Unit" /></td>
</tr>
<tr>
<td>Indian Drum&lt;br&gt;Gong&lt;br&gt;Viola&lt;br&gt;Bassoons</td>
<td>Secondo Piano</td>
</tr>
</tbody>
</table>

Ives connects the two units, the quarter (♩) and dotted-eighth (♩), with musical material played by the trombone section and the secondo orchestra pianist’s left hand. The trombone plays in [#6] with the dotted-eighth pulse and the pianist plays in [♩] with the quarter-note pulse. The rhythms or durations exhibited by both players consistently coincide. Example 7.5 outlines the durations of each articulation. It is important to note that while the parts may coincide visually and mathematically, the players are most likely not entraining to each other since Ives notates the parts as different temporal processes (as seen in f1565). There is a chance therefore that the two parts will not perfectly align. Perhaps this slight offset was desired since the parts are notated differently. And if they do align, it would augment the role of coincidence in Ives’s aesthetics and provide a mark of excellent timing by the performers. Unfortunately, this element was lost in the critical edition’s performance score, which re-bars and conforms all of the parts in [#6].

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The Comedy movement of the Fourth Symphony contains many sections centered in musical material defined by instrumentation (metallic timbre) with a prescribed rhythm or duration. None of these temporal processes, however, underlie the movement. The Comedy, instead of containing a cyclic reference unit to unify the movement, interweaves intermittent musical materials that shadow the functions of the cyclic reference unit. Perhaps this behavior is a reflection of Mr. Smooth-it-away’s reassurances to the narrator. The narrator continually expresses reservations about particular customs until Mr. Smooth-it-away assures him otherwise—assurances that are short-lived. Mr. Smooth-it-away’s temporary assurances influence the narrator in a similar way that the continual pulses of the metallic instruments determine the unit in sections of the Comedy movement, as seen in mm.75-77.

A passage in the Comedy movement, mm.43-51, splits the orchestra into two, upper and lower. Ives, in his “Conductor’s Note,” describes a juxtaposition of tempos between the two orchestras. The lower orchestra continues the previously prescribed tempo (Adagio) while the upper orchestra accelerates until the “collapse” and fermata in m. 51:

[mm.43-51] The instruments are divided here into two separate orchestras; the lower continuing the preceding adagio, while the
upper... breaks suddenly in, cancelling the sound of the lower orchestra (unless its players can be placed near enough to the majority of listeners or the upper orchestra removed sufficiently so that it may, in a way, be heard through the lower). ... at the beginning of the next page [m. 45] the upper orchestra begins to play gradually faster and faster until the “collapse” indicated [at m. 51] but which will occur sooner—perhaps towards the end of [the previous] page [m. 49]. Care must be taken that the lower orchestra in no way increases its tempo or intensity through here. After the upper orchestra has stopped, the lower must sound quietly on as if it had been oblivious of the disturbance.57

Example 7.6 outlines the tempo relationships between the upper and lower orchestra (measure numbers correspond to the measures of the lower orchestra). While the lower orchestra retains the previous tempo and time signature, the upper orchestra changes to 4 at a faster tempo (Allegro) with instructions to accelerando. Ives, in m. 51, notates a fermata over a rest in the upper orchestra in order for the two ensembles to reconvene in m. 52. Thomas Brodhead, in his narrative timeline that correlates Hawthorne’s story with the Comedy movement, describes the ensembles as representing the pace of the two journeys, pilgrims and narrator. The lower orchestra represents the trudge of the pilgrims while the upper orchestra signifies the train’s departure and rapid acceleration.58

57 Ives, “Conductor’s Note,” xxv; bracketed insertions are by Sinclair.
<table>
<thead>
<tr>
<th>Measure No.</th>
<th>43</th>
<th>48</th>
<th>51</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Orchestra</td>
<td>( \frac{3}{4} )</td>
<td>Allegro (gradually faster)</td>
<td>“Perhaps running up to [q=] 126”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“Fall away”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[ends with ( \text{fermata} )]</td>
</tr>
<tr>
<td>Lower Orchestra</td>
<td>( \frac{3}{2} )</td>
<td>Adagio Continues ( ( \frac{3}{2} ) of ( \frac{3}{2} ) = about 50; ( \frac{1}{4} ) of ( \frac{1}{4} ) = about 66)</td>
<td></td>
</tr>
</tbody>
</table>

**Example 7.7** Tempo relationships between Upper and Lower orchestras in Comedy movement, mm.43-51.

The lower orchestra is similar in disposition to the Silences in *The Unanswered Question*. Both groups maintain their prescribed tempo and remain “oblivious” to the other group by not adjusting their tempo or musical materials. The upper orchestra is similar to Group 1 in *Central Park in the Dark*: both ensembles continually accelerate and end with a fermata. In addition, the instrumentation of the upper orchestra, shown in the table below, is almost identical to G1 in *Central Park in the Dark*.

<table>
<thead>
<tr>
<th>G1 in <em>Central Park in the Dark</em></th>
<th>Piccolo, flute, Bb/Eb clarinet, oboe, bassoon, trumpet, trombone, percussion, piano I and II, and solo violin (mm.44-48 and 132-136).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Orchestra in Comedy movement</td>
<td>Piccolo, flute, Bb clarinet, bassoons, trumpets, trombones, tuba, timpani, orchestral piano I and II, and solo piano</td>
</tr>
</tbody>
</table>

**Example 7.8** Instrumentation for *Central Park in the Dark* and the Comedy movement’s upper orchestra in mm.43-51.

The Fourth Symphony’s Fugue, according to Ives, was one of the last pieces added to the Fourth Symphony: “The fugue was written just before the entire thing was finished in 1916. . .”\(^{59}\)

The Fugue, however, was not written exclusively for the symphony; it was adapted from one of Ives’s earlier works, titled a “Fugue for Organ” (1897).\(^{60}\) The original fugue was written in part as an assignment for Horatio Parker during Ives’s studies at Yale and later developed into an

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\(^{59}\) Ives, *Memos*, 66.

\(^{60}\) Singleton, “The ‘Fugue,’” xxxi.
organ piece for revival services. Ives’s “Fugue for Organ,” in addition to becoming a movement in the Fourth Symphony, also became the first movement (“Chorale”) in his *String Quartet No. 1: From the Salvation Army* (1897-1900).\(^6\)

The Fugue provides a stark contrast from the frantic and chaotic events that unfold in the Comedy movement. The movement is primarily in $\frac{3}{4}$ and scored for a smaller instrumentation: strings, flute, clarinet, one brass (French horn or trombone), timpani and organ. The Fugue does not incorporate the spatial separation of performers or create a juxtaposition of temporal processes—a characteristic that separates the Fugue from the other movements.

**Finale**

The Fourth Symphony’s Finale contains the largest instrumentation of the four movements. Ives incorporates instrumentalists from previous movements, including the choir and distant choir ensemble that have been tacet since the Prelude. The Finale’s large instrumentation is split into three spatially separated groups: The Distant Choir Ensemble, Main Orchestra, and Percussion Ensemble or “BU.”

<table>
<thead>
<tr>
<th>Distant Choir Ensemble</th>
<th>Main Orchestra</th>
<th>Percussion Ensemble (BU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Violins, Harp</td>
<td>Piccolo, 3 Flutes, 2 Oboes, 2 Bb Clarinets, 2 Bassoons, 4 French Horns, 6 C Trumpets, 4 Trombones, Tuba, Orchestral Piano, Celesta, Organ, Ether organ (opt.), High Bells, Low Bells, Triangle, Piccolo Timpani, Timpani, Choir, Solo Piano, Violin I II and III, Viola, Violincello, Contrabass</td>
<td>Snare Drum, Indian Drum, Cymbals, Bass Drum, Gong</td>
</tr>
</tbody>
</table>

**Example 7.9 Instrumentation for Finale.**

\(^6\) Ibid., xxxi.
The Distant Choir Ensemble and Main Orchestra form what Ives calls the “OU.” The acronyms OU and BU, which appear both in the Fourth Symphony and Universe Symphony, have been interpreted differently. OU has been read as “orchestral unit” or “outer unit” and BU as “battery unit” or “basic unit.” The first letter of the acronym, “O” and “B,” perhaps refer to tonal assignments since both are defined by instrumentation—the BU percussionists are not doubled in the OU and vice versa. The second letter has always been considered an acronym for “unit” and appears in all interpretations of OU and BU.

Characterizing each ensemble as a “unit” is in line with Ives’s use of the term on multiple levels. Many different types of durations differentiate both groups. Both begin and end at different times, which creates different performance durations—the BU, which begins and ends the movement, performs a longer duration. The durational units (e.g. quarter-notes or half-notes) between both groups are frequently different in duration. For instance, the half-note in mm.1-23 is different by approximately 33%. In the score, Ives notates the OU’s temporal process as being 1.5 times the speed of the BU. This difference in speed is equivalent to the difference in durational units. The OU’s units, when comparing the same durational value, are one-third shorter than the BU’s units. The OU’s units therefore occur earlier and more often, making the OU’s temporal process faster than the BU.

Ives’s calculations on the manuscripts prioritize the relationships of durational units over metronome markings. As a result, many of Ives’s metronome markings conflict and some are provided as a range to allow performers to decide. For example, Ives provides units and a list of possible metronome markings in m.40. In some cases, he divides various units by fractions followed by possible metronome speeds: “(½ of 3/2 = about 48-54) or ½ of 3/2 = 42” and “3/2 of
\[ \frac{\text{OU}}{=\text{BU}} \] 54.” He sometimes provides unit designations if a particular speed is preferred: “if 96 = \[ \frac{\text{OU}}{=\text{BU}} \text{ to BU} \]”\textsuperscript{62}

Metronome markings, as a general rule, depend on how many units or durations occur per minute (bpm). By nature, they connect musical units to “real-time” units—a relationship that correlates musical time to extra-musical time. Ives, instead of prescribing and building the work on metronome and tempo markings, designs a temporal landscape that is rooted in relationships between two musical groups. After providing an initial tempo marking of “Very slowly—Largo Maestoso” for both the OU and BU, he never alters the movement’s musical time with tempo markings or expression markings (such as a ritardando, accelerando, fermata, caesura, etc.). He instead allows the fluctuating relationships between the groups’ units to determine the work’s speed (see Example 7.9). Ives’s compositional design of the Finale therefore allows the work’s temporal processes to naturally unfold and change according to musical experience.

<table>
<thead>
<tr>
<th>OU to BU</th>
<th>1.5xBU</th>
<th>2xBU</th>
<th>1.5xBU</th>
<th>1.25xBU</th>
<th>1.5xBU</th>
<th>$\frac{1}{2}$xBU</th>
<th>$\frac{3}{5}$xBU</th>
<th>2xBU</th>
<th>1.5xBU</th>
<th>OU=BU</th>
</tr>
</thead>
<tbody>
<tr>
<td>OU Measure</td>
<td>1</td>
<td>24</td>
<td>27</td>
<td>40</td>
<td>50</td>
<td>59</td>
<td>64</td>
<td>65</td>
<td>72</td>
<td>“Coda”</td>
</tr>
</tbody>
</table>

**Example 7.10** Tempo Relationships between OU and BU in Finale.

The precision of the relationships between the OU and BU in performance practice is a common debate. Wayne D. Shirley, the editor for the critical edition’s Finale movement, states that there is a strict relationship between the two groups:

\textsuperscript{62} “Critical Commentary,” in *Symphony No. 4*, 206.
Simple or complex, the relationship [between BU and OU] is always exact: every moment of the main orchestra’s music corresponds to a specific moment of the B.U.’s music. 63

Thomas Brodhead, in his “Survival Guide” provided with the performer’s edition, expresses his opinion that one ensemble needs to follow the other in order for the tempo ratios to be obtained—his preference being that the BU follows the OU. 64 He provides roman numerals in the parts so that the ensemble can jump ahead, if necessary:

The conductor of the BU may therefore signal with the fingers of the hand where the BU should jump to, should the BU get ahead or behind the OU when the OU arrives at those measures. 65

Brodhead’s outline requires that one group synchronizes or entrains to the other throughout the movement. According to the following statement, Brodhead expected that both groups would occasionally be in synchronization with each other:

The two ensembles “float” in relationship to one another by virtue of a temporal dyssynchrony that is actually proportionally related

63 Wayne D. Shirley, “The ‘Finale’” in Symphony No. 4, xxxviii.
65 Ibid., xiii.
throughout, but which occasionally brings the two ensembles into synchronization. . . 66

The following discussions challenge notions that members of the OU and BU are entraining or synchronizing with each other during the Finale. I reason that the two groups create a juxtaposition of temporal processes that lasts for the duration of the movement. Brodhead’s illustration that the two ensembles “float” in relationship to one other in temporal dyssynchrony is an insightful description and appropriately applied. The alignment or other relationships that may emerge from this juxtaposition, however, do not result from the two groups following and synchronizing to each other. When the ensembles do align or specific relationships are perceived, that results from Ives’s compositional planning. Previous analyses have shown that Ives would notate and provide written directions in sections where ensembles would need to jump to a specified measure or react to musical events. The perceived synchronizations and relationships between each group, those notated in the score (e.g. OU 1.5x BU), are considered here a result of the listener’s perceptions in the musical experience. Listeners immersed in the juxtaposition are free to perceive relationships between the two units—perceptual processes made possible by the continuous presence of a cyclic reference unit.

The BU plays three complete sequences of 35 measures or 140 quarter-note pulses in the Finale—a fourth sequence begins but is not completed. The BU is scored for five percussion instruments that continually play an assigned rhythm in $4$ time (See Example 7.10).67 The snare drummer plays a rhythm that spans seven quarter-notes or 2.5 measures. The other percussionists play rhythms that span twenty-eight quarter-notes or 7 measures. Ives occasionally varies these

66 Ibid., xiii.
rhythms. For example, the snare drummer sometimes rolls between articulations, such as those in m.62, and the gong’s fifth measure is sometimes changed from \[ \text{\footnotesize \text{HQq}} \] to \[ \text{\footnotesize \text{QqH}} \]. The snare drummer’s rhythm, which is seven quarter-note units long, coincides with the other percussionists at every 140 quarter note pulses or 35 measures in \( \frac{4}{4} \) time to create one BU sequence. Each sequence begins and ends in approximately OU measure numbers 1, 19, 42 and 72.

**Example 7.11** BU sequence throughout the Finale. The snare drum, upon finishing in m. 5, begins their next sequence in the following measure. © 1932 (Renewed) by Associated Music Publishers, Inc. (BMI) International Copyright Secured. All Rights Reserved. Used by Permission.

Ives instructs the BU to begin their material first, before the OU enters. He suggests in the revised score that the percussionists play their first seven measures—the length of the Indian drum, cymbal/bass drum and gong’s assigned rhythm. A seven measure introduction, as noted in the critical edition, creates a problem for the snare drummer whose rhythm is two and a half measures in length.\(^{68}\) The critical edition, in response to this problem, provides an alternate snare drum part that coincides the drummer’s sequence with the OU’s entrance.

The BU plays throughout the movement without a time signature change or metrical modulation. They continually play in \( \frac{4}{4} \) and at the tempo “Very-Slowly Largo Maestoso.”

\(^{68}\) Ibid., 202.
BU therefore maintains one continual temporal process throughout the movement. The Basic Unit serves as the cyclic reference unit for the Fourth Symphony’s Finale.

Ives expected the BU players not to play in a metronomic manner. Unlike the CRUs in other movements, he includes metronome markings that suggest slight fluctuations in the BU’s tempo:

m.22 “BU here about 48 or slower 36”
m.50 “BU as high as 42”
m.59 “BU may reach as high as 50”
m.72 “BU up to 38 or a little faster”

Ives does not provide corresponding expression markings (e.g. accelerando or ritardando) in the score or alter the OU’s units according to these changes. These slight changes in tempo do not create metrical modulations or stall the BU’s temporal process. They instead allow the temporal process to follow the contour of the music. The BU’s temporal fluctuations grow towards the middle of the movement, as if reaching a climactic point, and then back away.

Ives’s metronome markings listed above occur at pivotal points in the OU and BU temporal relationship. In m. 24, the OU units will become equal in duration to two BU units. Having the BU speed up slightly before, in m. 22, guarantees that the units will not exactly align when the relationship becomes a whole integer—this also applies to m. 72 when the units become equal in duration. In m. 59, the groups’ mensural durations might align. By having the BU’s tempo slightly different in mm. 50 and 59, Ives ensures that the durations do not

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69 Shirley, “The ‘Finale,’” xxxviii.
continually eclipse. These fluctuations suggest that Ives expected the juxtaposition of temporal processes formed by the two groups to continue even when the perceived relationship between the two units becomes whole integers.

In the Fourth Symphony’s Finale, the OU and BU unfold different temporal processes simultaneously. Each group has its own conductor or designated leader to display these temporal processes for performers to remain in time. The OU, comprised of the Distant Choir Ensemble and Main Orchestra, entrain to the same conductor to receive a common pulse—ensuring that both groups are synchronized throughout the movement. The BU, which is played by four to five percussionists, gives the leadership role to one of its members or requests a separate conductor. Performers in both groups selectively attend by entraining to the temporal process of their leader.

The question arises: are the two designated leaders entraining and synchronizing to each other? Shirley, in his description, implies that the conductors do entrain to each other in order to remain “exactly” in time. This would require the conductors to remain insensitive to their respective ensemble. Both conductors would have to sacrifice the natural ebb and flow of their ensemble’s temporal processes for one that is exact and objective. I caution against this approach on the basis of the discussions presented in chapter 2, which outlines Ives’s distaste for strict temporal processes and his preferred approaches to juxtapositions of temporal processes.

On the other hand, Brodhead provides Roman numerals for both parts to align. These Roman numerals require the conductors to react, not entrain; one conductor holds up a number that the second conductor reacts to. These roman numerals, although they solve the problem of continual synchronization, present another aesthetic problem; they give preference to a temporal process. The temporal process not held in favor has to jump to meet the other. In Chapter 1, we encountered two similar, real-life instances in Ives’s writings where the selection of temporal
process leads to unfair and/or unnecessary bias (Freddy’s drum playing and Berlin’s “They Were All Out of Step but Jim”). As shown in previous analyses, Ives has always forewarned performers in written or notational markings (e.g. fermatas or long durations of rests) when performers would need to jump ahead. In the Finale, Ives does not provide any of these indications. Ives’s aesthetics would support musical practices retaining the individuality of each line, without preference. In confronting juxtapositions of temporal processes in Ives’s works, a practice that presents intact and self-regulating temporal processes, allowing the listener to decide or create a composite between them, is preferable.

There is one point in the work, at the very beginning, where a member of the OU needs to entrain to the BU. The percussionists, as mentioned before, play an introduction before the OU enters. During this introduction, the OU conductor entrains to the BU’s pulse for their entrance and to compute a metrical modulation. The conductor metrically modulates the BU’s half-note into a dotted half-note (\( \ddot{\text{h}} = \text{h.} \))—an experience similar to dividing duples into triples or simple to compound. The conductor, after processing the modulation, cues the bass players with the new tactus for the OU’s first measure. As noted in previous chapters and analyses, one of the CRU’s many functions is to provide an initial tempo and entrance locations for ensembles. The OU conductor’s initial entrainment to the BU for their entrance and tempo is therefore a typical experience associated with cyclic reference units.

In mm. 1-4, the first four desks of the contrabass section intone Lowell Mason’s “Bethany,” which gradually emerges from two players in m.1 to the entire section in m.5. Most of the durations created by articulations form whole integer ratios with the BU’s pulse (see Example 7.11). In looking at the vertical alignment of the score or listening to the work, it may seem that the basses correlate their attacks and entrances with the percussionists—two BU

70 See pg. 12.
71 See pg. 72.
measures total one Contrabass measure. Ives, however, places the players’ entrances on the second quarter note with marcatos (as seen in Example 7.12). These markings accent the different quarter-note units, which like all other units, are 1.5 times faster than the corresponding BU units. These accentuations highlight the presence of two temporal processes unfolding simultaneously. The bass players, although some of their articulations may align with the BU, are engaging in a different temporal process to enter and perform their material.

Example 7.12 Contrabass soli in Finale, mm.1-4. © 1932 (Renewed) by Associated Music Publishers, Inc. (BMI) International Copyright Secured. All Rights Reserved. Used by Permission.

While the BU remains in $\frac{1}{4}$, the OU plays a variety of time signatures throughout the movement: $\frac{2}{4}$, $\frac{3}{4}$, $\frac{5}{4}$, $\frac{6}{4}$. There is one section, mm.29-31, where the orchestral pianist goes into $\frac{4}{4}$. Ives notes in the revised score: “Orch Piano | with BU here | 4/4 to | one |B.U. unit.”

This does not mean that the pianist begins to entrain to the BU. Ives does not provide rests, hiatus, or a fermata in m.28 to give the pianist time to entrain to the percussionists’ pulse. Furthermore, the parts are still displaced even if the BU and OU parts remain impeccably aligned (as seen in the critical edition).

The pianist, instead of entraining to the BU, metrically modulates from the OU’s dotted-half note unit to the whole note unit ($\frac{3}{4} = \infty$). This modulation is made easier thanks to the OU.

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72 “Critical Commentary,” 205.
The OU accentuates every fourth beat with accents and longer durations. These accentuations align with the orchestral pianist’s bars. The pianist can therefore anticipate these durations and interpret them as their mensural duration. The orchestral pianist, although their units become equal with the BU, remains *in time* with the OU.

Ives’s description, which describes the pianist as being “with” the BU, is a desired aesthetic that is achieved in the listening experience. The orchestral pianist and BU can engage in selective attention, each entraining to different tacti, to create their temporal process. The composite affect, perceived from the listening experience, is two temporal processes moving at the same speed or *with* one another—Ives refers to temporal processes in juxtapositions similarly (“Rhythmically, a three and a four go together throughout. . .”).73

The OU, throughout the Finale, goes through a series of metrical modulations. These modulations allow the music to speed up and slow down through unit relationships instead of resetting the temporal process with metronome or expression markings. Metrical modulations require performers to establish a direct relationship between the previous and new tempo. Performers abstract the old tempo’s unit, modify it into a new tempo, and adjust their actions—a process that fits Neisser’s concept of perceptual cycles. The OU therefore develops a seamless temporal process that is compositionally designed to *unfold based on experience*.

The OU’s temporal process relies on the conductor’s abilities to perform the sequence of metrical modulations outlined in Example 7.13. The conductor, by practicing these modulations, ensures the continuity of the OU’s temporal process. The practice also ensures that the BU’s half-note unit, provided in the intro, generates the OU’s temporal process. The OU conductor, after entraining to the BU’s introduction, could potentially employ selective attention until the

73 Ives, *Memos*, 58. See also pgs. 139 and 140.
end of the piece since the metrical modulations enable the perceived ensemble ratios (outlined in
the score) without the need for entrainment.

<table>
<thead>
<tr>
<th>Measure</th>
<th>(Intro)</th>
<th>24</th>
<th>27</th>
<th>40</th>
<th>50</th>
<th>59</th>
<th>64</th>
<th>65</th>
<th>72 (Coda)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OU Metrical Modulation</td>
<td>↓ = BU ↓</td>
<td>↓ = ↓</td>
<td>↓ = ↓</td>
<td>↓ = ↓</td>
<td>↓ = ↓</td>
<td>↓ = ↓</td>
<td>↓ = ↓</td>
<td>↓ = ↓</td>
<td>↓ = ↓</td>
</tr>
</tbody>
</table>

Example 7.13 Metrical modulations of the OU throughout Finale.

Our discussion reaches yet another question: If the groups are selectively attending and
the conductors are not synchronizing, do the ensembles need to entrain or re-synchronize in
order to end the piece? Ives’s compositional design does not require the two ensembles to
synchronize to end the piece. He slowly dissolves the OU with rests or instructions to gradually
die away. Members of the BU continue to play their sequence as the OU gradually dissipates—
an ending similar to the string players who hold their chord and “continue after” at the end of
The Unanswered Question. In a memo on the revised score, Ives explains that the end of the
piece rests with the conductor’s judgment:

The ending of Coda, say from about p. 25 depends on number &
proportion of instruments[,] the acoustics [of] the hall, or if out of
doors on the distance between the groups & the listener. The score
is only approximate—it rests more [on the] judgment of [the]
conductor.75

74 “Revised Score Manuscript” for “Finale” movement, in Symphony No. 4, 153.
75 Ibid., 156. Message is found above m. 86.
Amidst the work’s juxtapositions of temporal processes and the participants’ selective engagements, there is an event that has the potential to be noticed by all musical participants. The choir, at the “coda” in m. 72, begins to sing after being tacet since the first movement. The group’s sudden presence is sure to capture the attention of all, including members of the BU. Since the choir is a member of the OU, members of the Main Orchestra and Distant Choir Ensemble can anticipate and know when the choir enters. The BU, however, cannot anticipate the entrance since they are not entraining to the OU.

BU members notice the choir’s entrance instead of anticipating it. By noticing the choir’s entrance, the players can know their proximity to the OU without the need to entrain or react. They know the approximate location of the coda since their third and last complete sequence ends in or near m.72 and/or the coda is likely marked in their parts. BU members, upon hearing the choir’s entrance, can perceive an event that provides a difference, a distance, between themselves and the OU—a difference outlined by the choir’s entrance and the end of the BU’s third sequence and/or the “coda” marking. BU members, upon hearing the chorus’s entrance, could perceive and estimate their proximity to the OU—whether an ensemble is early, late or just in time.

BU members do not need to perceive the event or the difference between the two ensembles. The event does not affect musical materials or temporal processes—unlike G1’s trill in Central Park in the Dark and the questions in The Unanswered Question. The players do not react to the choir’s entrance by jumping ahead or slowing down. The event, instead, provides a point that is communally perceived in the musical experience to bring awareness.

Ives, in addition to re-introducing the choir, highlights this communal event in another way. Brodhead, in the Color-Coded Quotation Analysis included in the critical edition’s CD-
ROM, shows that at the coda Ives suddenly condenses a large number of hymn tunes down to two: Lowell Mason’s “Bethany” and Andrew Seymour Sullivan’s “Propior Deo.” The choir, violin and trumpet sections, and a flautist play “Bethany” while a single oboe player intones the “Propior Deo.” Both hymn tunes contain the phrase “Nearer my God to Thee.”

Burkholder, in his text *All Made of Tunes*, describes the significance of Lowell Mason’s “Bethany” at the Finale’s coda in relation to the hymn’s appearances in other movements. He notes that the hymn has been absent since the first movement, where only the hymn’s first half is played. Its reappearance at the coda combines both the first and second half simultaneously, fusing the hymn together as a whole.76

Stephen Blum notes that this gradual progress towards a final complete statement of a hymn tune is a common pattern in Ives’s oeuvre: “The many individual movements in Ives’s work that progress toward a final statement of a hymn melody in its entirety constitute a special case of a more general structural pattern, carrying great significance for the composer: a process of growth directed toward a gradual clarification.”77

In his *Memos*, Ives discusses his use of *Nearer my God to Thee* in the Finale and parallels the hymn’s musical experience to numerous extra-musical experiences that share a common theme of community: communion services at Redding and an evening in a New York café when everyone stood up and sang this hymn in response to President McKinley’s assassination. He even associates the later event with a sentimental, family memory of his father:

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76 Burkholder, *All Made of Tunes*, 405-06.
77 Blum, “Ives’s Position in Social and Musical History.” 469. See also Burkholder’s discussions on “cumulative form” in Burkholder, *All Made of Tunes*, 137.
Everybody stood up [in the café] and sang this hymn [Nearer my God to Thee]. It brought back an incident in my father’s life showing one of the finest sides of his character. . . . It was a fine and deep personal experience which is better to remember than to put into words.\textsuperscript{78}

Community, as briefly discussed in chapter 1, seems to be of personal significance to Ives and associated with his attraction to hymns.\textsuperscript{79} Hymns, by design, are musical compositions for all to sing. To collectively sing a hymn, multiple individuals \textit{synchronize} together. To synchronize, the singers allow the music’s pitch and temporal processes to be shaped by their communal experience. The performers, just as in all musical experiences, use their perceptions in the musical experience to adjust their pitch and temporal processes. Singers, realizing they are late or out of tune, adjust their actions through the perceptual cycle—a topic discussed in Chapter 4. Through each participant’s willingness to perceive and adjust, they are able to align their musical processes and strengthen the musical line. This collaboration is essential to understanding Ives’s interest in hymn tunes. Ives was interested in the \textit{way} hymns were sung as well as in their musical elements:

It was the \textit{way} this music [hymns] was sung that made them big or little. . . And it wasn’t the music that did it, and it wasn’t the words that did it, and it wasn’t the sounds (whatever they were—transcendent, peculiar, bad, some beautifully unmusical)—but they

\textsuperscript{78} Ibid., 66.
\textsuperscript{79} See pg. 4.
were sung ‘like the rocks were grown.’ . . . it all came from something felt, way down and way up—a man’s experience of men.80

Ives admired the confidence and assurance often exerted by those singing hymns—similar qualities to those desired in his Holding Your Own technique. Perhaps Ives sought to capture these qualities and experiences with his use of hymn tunes. Ives often juxtaposes hymn tunes by defining them with a separate temporal process. For example, there is a juxtaposition of temporal processes between two hymns in mm. 40-44 shown below. The French horns play a verse from Zeunder’s “Ye Christian Heralds” while the high bells play the chorus of Mason’s “Bethany.” Example 7.14 includes the original notations of each hymn with Ives’s notations.

Example 7.14 Zeunder’s “Ye Christian Heralds” and Lowell Mason’s “Bethany” with Ives’s notations in Finale, mm. 40-44.

“Ye Christian Heralds,” while it keeps the time signature of 3/4, is displaced from the hymn’s original metrical pattern. Most of the hymn’s rhythmic notation shown here remains. The exception is the rhythmic diminution of two notes “through Em-[manuel]” in place of the word

80 Ives Memos, 132.
“salvation.” Ives rhythmically augments Lowell Mason’s “Bethany” with note values four times the original notational value. The hymn, which is originally in $\frac{6}{8}$, is notated in $\frac{3}{2}$ with a series of triplets grouping the whole note unit. The melody, in addition, is metrically displaced from the measure’s first beat. Both hymns create a juxtaposition of temporal processes, in which the performers “hold their own.”

The juxtaposition of temporal processes formed by the two units throughout the Finale enables the work’s culminating answer and is essential to the work’s aesthetic program. As each musical participant engages in the juxtaposition, their perceptual cycles guarantee that each develops their own perceptions. Unlike the episodic juxtapositions in previous movements, the continual juxtaposition of temporal processes throughout the Finale ensures a continual abundance and simultaneous presence of perceptual cycles. The last movement, in this way, parallels our engagements in music experiences and life. Perceptions, the products of perceptual cycles, provide our unique answers to the questions, “what” and “why,” that we continually ask of the world around us. They help define our individual experiences and create our awareness of reality. 81 Ives reveals that this parallel is desired and is that which, in part, makes the Finale the preferred answer:

The last movement is an apotheosis of the preceding content, in terms that have something to do with the reality of existence and its religious experience. 82

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82 Ives, *Memos*, 66.
Ives states that he didn’t feel justified in writing about religious matters until he reached the Fourth Symphony. His confidence most likely grew in tandem with his development of compositional techniques and designs. By the time he had reached the Fourth Symphony, Ives had created and developed several compositional techniques and features (e.g. *Holding Your Own* technique and cyclic reference units) that highlight juxtapositions of temporal processes, which he felt acknowledged and facilitated different experiences for each participant. These matured techniques were therefore expressive tools needed for handling the Fourth Symphony’s aesthetic program. They highlight the infinite array of experiences that are intrinsically present in the musical process to parallel Ives’s thoughts on the nature of experience and reality. As his techniques matured, Ives was able to design musical compositions that continually aligned more with his aesthetics—a fusion encouraging Ives’s ambitions and fueling his confidence.

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83 Ibid., 129.
Chapter 6

Becoming “Nearer”

The Fourth Symphony is rooted in a quest to become “nearer” to life’s perfect ideals or answers—whether these are considered Nature, God, or truth. According to Ives, the last movement stands as the “apotheosis”—the answer that comes closest to the answer that we seek “in terms that have something to do with the reality of existence and its religious experience.”

His explanation, as is common in his expressions, is undefined and open to multiple interpretations. But even in its elusive state, Ives’s explanation can be traced to various other writings that can help clarify the composer’s terms and intentions.

As previously discussed, Ives considered terms unique to each individual (“Expression, to a great extent, is a matter of terms, and terms are anyone’s. The meaning of ‘God’ may have a billion interpretations . . .”).¹ The problematic nature of terminology is one of the primary reasons Ives was dissatisfied with language and turned to music as a contemporaneous process in expression. Words, according to the composer, are dependent on the assumption that those in communication can and already know the others’ experiences and dispositions.²

No matter how sincere and confidential men are in trying to know or assuming that they do know each other’s mood and habits of thought, the net result leaves a feeling that all is left unsaid; for the reason of their incapacity to know each other though they use the same words. They go on from one explanation to another, but

¹ Ives, Essays Before a Sonata, 8.
² Ibid., 8.
things seem to stand about as they did in the beginning “because of that vicious assumption.”  

Ives believed that music has the ability to surmount many problems and limitations in language. His music presents an aural event that enables participants to freely perceive and choose their own experiences to find meaning. Music, in this way, does not rely on assumptions or connotations that burden language; it relies upon the participants’ engagement—their perception process in the musical experience. Perhaps this reliance is why Ives believed music has the potential to become a transcendental language common to all:

But we would rather believe that music is beyond any analogy to word language and that the time is coming . . . when it will develop possibilities inconceivable now—a language so transcendent that its heights and depths will be common to all mankind.

Neisser, in his approaches to speech and perceptual cycles, expresses similar concerns about human communication. Learning information indirectly, as facilitated by language, can result in an infinite array of understandings and inflections—a problematic characteristic that results in multiple meanings and interpretations. To evade these issues, he emphasizes the perceptual cycle and his belief that its process brings us ever closer to universal truths:

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3 Ibid., 8. See also Note 3 on pg. 133 in Boatwright’s edition of Ives’s Essays Before a Sonata.
4 Ibid., 8.
Our dependence on it [human communication] means that our understanding of one another and ourselves . . . is never complete and often simply mistaken. On the other hand, the perceptual cycle tends to be self-correcting, and there is always more information available than has yet been used. The outcome of any single encounter between cognition and reality is unpredictable, but in the long run such encounters must move us closer to the truth.  

Ives viewed terminology as a crucial yet problematic aspect of expression. Terms are, by nature, sounds that we associate with events, which are experienced differently by each individual. Ives saw language as being limited in the assumption that the aural sound shared between the two individuals associates the same experience. He bypasses this problem by creating music rooted in juxtapositions of temporal processes, which he believed embraced the infinite array of experiences and perceptions that naturally exists. He therefore exploits the fundamental process found in language and music: *Both mediums rely upon the perceiver’s active engagement in an aural experience to attain meaning and expression.*

Ives provides a passage that links perception and an individual’s quest to become nearer to perfect ideals. In his *Essays Before a Sonata*, he describes Thoreau’s longing to become closer to Nature. In order to become nearer, Thoreau continually perceives differences between his pace and Nature’s “tempo.” He utilizes insights arising from the perceptual process—that his

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5 Neisser, *Cognition and Reality*, 194.
6 See Neisser’s discussions found in Chapter 8 “Perceiving and Using Speech” in *Cognition and Reality*, 154-160.
7 Ives, *Essays Before a Sonata*, 67-68.
speed is faster than Nature’s—to alter his pace. Although Thoreau alters his pace, he realizes that his pace will never fully synchronize with Nature. He feels and perceives that the two tempos, instead of merging into a single process, coexist and temporarily blend together in harmony—an insight that fulfills the wanderer’s quest:

—he [Thoreau] releases his more personal desires [MS: intimate inclinations] to her broader rhythm, conscious that this [crossed out in MS: pulse beat of nature] blends more and more with the harmony of her solitude;

The disposition between the two units, the OU and BU, in the Finale is similar to the juxtaposition between Thoreau and Nature’s tempos. The two units cannot synchronize because of the juxtaposition of temporal processes—synchronizing would conform the groups into a primary process, making the two units unequal counterparts. The two units instead become closer and aware of each other through perceptions in the musical experience—perceptions enabled by the Finale’s “coda” and the listener’s engagement.

Ives’s compositional design of the Finale, which is built on a large-scale juxtaposition of temporal processes, ensures different experiences and perceptions at every performance. The “what” and “why” participants may abstract from the experience are therefore not unifying answers since these, by nature, will continue to vary and change with each and every experience. The perceptual process, the process of arriving at these answers, is instead the uniting factor.

Ibid., 68. Words labeled “MS” and inserted in brackets are from the manuscript and included in Boatwright’s footnotes.
The perceptual process enables each participant to arrive at answers that best fit and acknowledge the self-evident truths that they seek. As similarly described by Henry Cowell:

He [Ives] envisages a series of integrations of dualities, each of which as it is achieved is seen as a sort of partial or temporary truth, a truth which then becomes only one aspect of another set of opposites which sooner or later must be resolved in its turn. This struggle toward truth and integration is the nearest man can come to absolute truth in Ives’s view; but he feels the very effort required imparts a certain unity and coherence of its own.9

Perception is capable of not only unifying our musical experience; it also connects us with reality. Similar to evolution, perception is the way in which we learn and adapt to the real world.10 As Neisser states: “. . . perception is where cognition and reality meet.”11 Perception, as a constructive process, depends upon the perceiver’s skills and experiences, which are continually developed over time.12 As our perceiving capabilities develop, we too evolve.13

As discussed in Chapter 4, Ives also believed our natural evolution is fueled by our growing abilities to sense and perceive the world—abilities nurtured through experience.14 He further sought to encourage this growth through his music. But according to Ives’s writings, music was not the only experience through which a person could grow. He saw a person’s

9 Cowell and Cowell, *Charles Ives and His Music*, 143.
11 Ibid., 9.
12 Ibid., 13-14.
13 Ibid., 11.
14 See pg. 58-59.
engagement in religion a similar way of contributing to humanity’s development. Chester Ives, one of Charles Ives’s nephews, remembers his uncle encouraging him to allow religion to supplement his individual growth: “Uncle Charlie encouraged us to get out of religion what we could, but mainly to think for ourselves. It always came back to that.”¹⁵

Evelyn Becker, widow of American composer John Becker, remembers Ives taking great interest in her husband’s work, specifically his article “Fine Arts and the Soul of America.”¹⁶ Becker’s article discusses America’s need for more “deep spiritual contact with cultural things.” He describes these things as being processes (“soul-processes”) that contribute to the development of one’s soul in combination with acquired effects from religious or musical experiences.¹⁷ According to Mrs. Becker, Ives asked for extra copies of this article to distribute to “friends, for those he thought would be interested and ‘for those who ought to be, if they weren’t.’”¹⁸

Becker’s article sparked a four-year curriculum that he would later implement at St. Thomas.¹⁹ In this curriculum, he calls for aesthetic education that emphasizes learning through perceptual process—a learning experience that he believed contributes to one’s individual growth:

> By aesthetic education I mean a familiarity with the arts that enables one to see the relationship of the arts to God and with this

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¹⁶ Ibid., 177.
¹⁷ “…deep spiritual contact with cultural things, those things that have to do with soul-processes and those things which after religion inspire one, such as an intellectual contemplation of music…” Perlis, *Charles Ives Remembered*, 177.
¹⁸ Ibid., 177.
¹⁹ Ibid., 177-178.
knowledge help men to bring about the development of their own souls.\textsuperscript{20}

Ives perhaps echoes Becker’s notion of “soul-process” in the excerpt below. Ives speaks of music as a way to become connected to one’s soul, which he describes as a composite of tempestuously moving streams or inner truths. He explains that a person can sense and know substance is present—a process indicating perception. But the conscious realization of this substance, the \textit{what} this inner something \textit{is}, will forever be denied:

Music is one of the many ways God has of beating in on man – his life, his ideals, his hope in everything – an inner something, a spiritual storm, a something else that stirs the man in one of his parts (consciousness) and “all at once” – we roughly call these parts (as a kind of entity) “soul” – it sets thro or vibrates, or couples up to human sensations in ways (or measure) man may hear and know: that is, he knows he hears them and says (or thinks or feels) he knows them. – further then this, what this inner something is which begets all this, is something no one knows. . . \textsuperscript{21}

Ives’s descriptions of “soul” and “artistic intuitions” are therefore similar; both refer to unique insights that are capable of being felt and expressed but never known (as discussed on pg. 4, Ives considered artistic intuitions to be unknown entities \textit{[What]} with unknowable causes

\textsuperscript{20} Ibid., 177.
\textsuperscript{21} Kirkpatrick, \textit{Catalogue}, iiv [iii].
Our experiences, whether musical or religious, bring us closer to these insights without ever reaching cognition—Susanne Langer similarly approaches music as an unconsummated symbol in *Philosophy in a New Key*. Ives therefore considered those remaining in the perceptual process as being closer to truth than those who reach cognitive states, which naturally have the infinite potential to be different.

Ives expresses this idea in *The Unanswered Question*. The work’s CRU represents the Druid’s inner essence, “Silences,” with a continual temporal process. The other two ensembles, the Questions and Answers, become ever closer to this process without ever reaching it. The Question entrains to the CRU by continually aligning their perceptual anticipations. Although their tempos are aligned, the temporal processes of both groups remain independent. The Question, however, remains *closer* to the CRU than the Answerers. The Answerers retain a degree of separation between themselves and the CRU because they continually react to the Question. Consequently, the Answerers’ entrances and tempos are modified and vary with each statement—a persistently changing behavior that reflects the infinite possibility for answers and cognitive states.

The Answerers become “closest” to the CRU at the “secret conference,” when they hold their fermata. As the players hold, the Answerers entrain to the Question, who shares the CRU’s tempo of *Largo molto sempre* (revised version). As a result of this entrainment, the Answerers’ perceptual anticipations become significantly slower, from *Allegro molto* (revised version), to match their tempo. This drastic change and slower sequence of perceptual anticipations brings the Answerers ever closer to the CRU’s temporal process without ever reaching it. The Answers, although they may anticipate pulses at the same tempo, can never reach the CRU’s

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temporal process since they are entraining to the Question’s temporal process, which is always juxtaposed with the CRU.

A similar instance is paralleled in the Fourth Symphony’s Comedy movement. During the juxtaposition when the main orchestra is split into two (mm. 43-51), the lower orchestra’s temporal process remains continuous and oblivious like The Unanswered Question’s CRU. The lower orchestra, as noted by Brodhead, represents the pilgrims who are journeying on a spiritual quest. The pilgrim’s faith, in a similar way to the Druid’s silences, encourages the unwavering and steadfast journey, which is reflected in the continuous temporal process of both groups’ musical materials.

Ives never desired for music to literally or definitively express experience. To have a definitive language would require uniform experiences, in which everyone’s perceptual processes continually arrive at permanent cognitive states. Ives, through his realistic understanding of perception and experience, knew that such a concept is unattainable:

But maybe music was not intended to satisfy the curious definiteness of man... Possibly the power of literally distinguishing these “shades of abstraction”—these attributes paralleled by “artistic intuitions” (call them what you will)—is ever to be denied man for the same reason that the beginning and end of a circle are to be denied.23

23 Ibid., 71.
Ives accredits this impossibility for definitive expression to the “law of perpetual change,” which he describes as an “ever-flowing stream, partly biological, partly cosmic, ever going on in ourselves, in nature, in all life.”  

Ives, throughout his writings, talks about similar “streams” that travel endlessly through consciousness and bring substances (e.g. artistic intuitions) that float in and out of being. He explains that this perpetual change is in part the reason for our difficulty in finding the continuity that we continually seek in art.

Throughout his lifetime, Ives unfortunately encountered many individuals that, he felt, were unwilling to fully take part in musical experiences. His critical perceptions and bold reactions to these performers and listeners are well documented in his own writings and interviews with his colleagues. Performers and conductors asking for advice on interpreting his music faced some of Ives’s fiercest criticisms. As noted in chapter 2, Ives considered many of his works as being “a platform for the player to make his own speeches on.” Ives saw the musicians’ deferment of interpretation as the performers’ reluctance in making necessary aesthetic decisions to craft the composition—to make the work their own. Mary Shipman Howard, a recording engineer who famously recorded Ives playing the “Alcott” movement, recalled Ives’s response to these performers:

“Interpret, interpret! What are they talking about? If they don’t know anything about music—well, alright, I’ll tell them.” So he’d

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24 Ibid., 71.
25 Ibid., 7.
26 “This may account for the difficulty of identifying desired qualities with the perceptions of them in expression. Many things are constantly coming into being, while others are constantly going out. . . Perhaps this is why the above conformity in art (a conformity which we seem to naturally look for) appears at times so unrealizable, if not impossible.” See Ives, Essay Before a Sonata, 71.
27 Ives, Memos, 191.
sit down at the piano and play very loudly, and sing and make a running commentary while doing it. “This is how you do it. Now you’re stupid. Don’t you know, this is how you do it. I’ll play it over again in case you didn’t get it the first time.”

Listeners who reproached Ives for his “pictures in sounds”—works designed for listeners to choose their own experiences—faced even harsher criticisms. Following the premiere of his *Three Places in New England* (three “pictures in sounds”), Ives famously stood up amidst a booing and hissing audience and yelled: “Stop being such a God-damned sissy! Why can’t you stand up before fine strong music like this and use your ears like a man!”

Ives, in his *Essays Before a Sonata*, explains his frustration with listeners. He states that listeners have an *active role* in musical experiences. A listener must *project himself*—a process, he explains, that becomes more complex and difficult amidst juxtapositions in the musical experience:

In closing, and to go still further afield, it may be suggested that in any music based to some extent on more than one or two rhythmic, melodic, harmonic schemes, the hearer has a rather active part to play. . . . but there is a type of auditor who will not meet the performers halfway by projecting himself, as it were, into the premises as best he can.

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30 Ives, “Conductor’s Note,” xxix.
Ives expected us to play an integral role in the musical process by actively attending, allowing our choices and memories to continually shape and define our musical experiences. As Stephen Blum notes: “Ives registered an eloquent protest against those who do not regard musical choices as commitments that link memories of past actions to perceptions of the present and prospects for the future. . .” 31 Failure to make a sustained effort in this process, according to Blum, was for Ives the cardinal sin of his era, extending into political, academic and economic areas of American life.32

In conclusion, Ives strove to create music that acknowledges and embraces individual’s rights and freedoms to choose and express—qualities reflecting American values. He encouraged performers to “hold their own,” an assertiveness demanded in distinguishing a unique voice from its natural juxtaposition with others. He provides listeners with an infinite array of musical experiences for them to choose and define their own experience. And, he further hoped that these experiences would contribute to man’s natural evolution by aiding in the individual’s perceptual growth.

Ives passionately condemned the growing tendency to conform our music and perceptions of value to common aesthetics—habits he thought limited musical experiences and expression. He instead broke away from mainstream practices to embrace the diversity inherent in the world around us and exert his rights to express according to his terms. He encouraged others to follow suit and in turn encourage others. From this perspective, we can better sense Ives’s legacy as a genuine American composer and become increasingly closer to his invaluable contributions in the evolution of music.

32 Ibid., 463.
Appendix A


The parts of the flute quartet may be taken by two flutes, upper staves, oboe and clarinet, lower staves. The trumpet part may be played by an English horn, an oboe or clarinet, if not playing in “The Answers.” The string quartet or string orchestra (con sordini), if possible, should be “off stage,” or away from the trumpet and flutes. The trumpet should use a mute unless playing in a very large room, or with a larger string orchestra. If more than four strings, a basso may play with the ‘cellos (8va basso). The strings play ppp throughout with no change in tempo. They are to represent “The Silences of the Druids—who Know, See and Hear Nothing.” The trumpet intones “The Perennial Question of Existence,” and states it in the same tone of voice each time. But the hunt for “The Invisible Answer” undertaken by the flutes and other human beings becomes gradually more active, faster and louder through an animando to a con fuoco. This part need not be played in the exact time position indicated. It is played in somewhat of an impromptu way; if there be no conductor, one of the flute players may direct their playing. “The Fighting
Answerers,” as the time goes on, and after a “secret conference,” seem to realize a futility, and begin to mock “The Question”—the strife is over for the moment. After they disappear, “The Question” is asked for the last time, and the “Silences” are heard beyond in “Undisturbed Solitude.”

The flutes will end their part approximately near the position indicated in the string score; but in any case, “The Last Question” should not be played by the trumpet until the “Silences” of the strings in the distance have been heard for a measure or two. The strings will continue their last chord for two measurers or so after the trumpet stops. If the strings shall have reached their last chord before the trumpet plays “The Last Question,” they will hold it through and continue after, as suggested above. During some of the louder passages of the flutes, the strings may not be heard, and it is not important that they should be. “The Answerers” may be played somewhat sooner after each “Question” than indicated in the score, but “The Question” should be played no sooner for that reason. If a large string orchestra is playing, the full treble woodwind choir may be used at the discretion of the conductor, but in any case, only one trumpet plays.
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