

CHARLES IVES: HIS MUSICAL PHILOSOPHY AND
COMPOSITIONAL STYLE AS APPLIED TO
FIVE WORKS FOR CHAMBER ORCHESTRA

A Thesis
Presented to
the Faculty of the School of Music
University of Houston

In Partial Fulfillment
of the Requirements for the Degree
Master of Music

by
Gregory P. Arnold
May 1976

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ABSTRACT

The purpose of this research is to examine the chamber orchestra works of Charles Ives for stylistic similarities and for innovative musical concepts. Five works were selected, which provided a variety of musical material on which to make comparisons. These works are not the most famous of Ives's compositions, but they contain nearly all of the important stylistic features found in Ives's larger works.

Background material, necessary to the understanding of Ives's philosophical and musical ideas, is provided in the first chapter. The research includes observations by well-known scholars of Ives and frequent musical examples to illustrate specific musical constructions. The chapters discuss the five works individually in regard to the specific elements of music and in the conclusion as compared to one another.

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CHAPTER I

CHARLES IVES: HIS LIFE AND AESTHETIC PRINCIPLES

Charles Edward Ives (1874-1954) was born at Danbury, Connecticut, to George and Mary Parmalee Ives. His father, George Edward Ives (1854-1894), had been a Civil War band leader and was a central figure in the local musical activities. George Ives taught Charles how to play piano and organ, and encouraged him to play cornet and drum in the town band. Charles Ives attended many kinds of musical activities with his father, including the town parades, dances, picnics, band concerts, organ recitals, choir concerts, and chamber music sessions. The music which he heard consisted mainly of patriotic tunes, marches, fiddle music, minstrel tunes, transcribed orchestral works, and several types of hymns. George Ives had a preference for "strong" music: "Haydn and Mozart were never popular with either George or Charles Ives; they were considered too sweet, too pretty, too easy on the ears."¹ George Ives preferred the music of Bach, Handel, and Beethoven, and played the works of these composers frequently.

¹Henry and Sidney Cowell, Charles Ives and His Music (New York: Oxford University Press, 1955), p. 23.

George Ives enjoyed music for its spiritual value and experienced in his work with amateur choirs and bands a high level of uninhibited involvement in their music making. The depth of expression to be found in popular music and in each man's interpretation of it left an impression on Charles Ives. He said,

. . . at the outdoor Camp Meeting services in Redding, all the farmers, their families and field hands, for miles around, would come afoot or in their farm wagons. I remember how the great waves of sound used to come through the trees--when things like Beulah Land, Woodworth, Nearer My God To Thee, The Shining Shore, Nettleton, In the Sweet Bye and Bye and the like were sung by thousands of "let out" souls. The music notes and words on paper were about as much like what they "were" (at those moments) as the monogram on a man's necktie may be like his face. Father, who led the singing, sometimes with his cornet or his voice, sometimes with both voice and arms, and sometimes in the quieter hymns with a French horn or violin, would always encourage the people to sing their own way. Most of them knew the words and music (theirs) by heart, and sang it that way. If they threw the poet or the composer around a bit, so much the better for the poetry and the music. There was power and exaltation in these great conclaves of sound from humanity.²

Once a nice young man (his musical sense having been limited by three years' intensive study at the Boston conservatory) said to Father, "How can you stand it to hear old John Bell (the best stone-mason in town) sing?" (as he used to at Camp Meetings) Father said, "He is a supreme musician." The young man (nice and educated) was horrified--"Why, he sings off the key, the wrong notes and everything--and that horrible, raucous voice--and he bellows out and hits notes no one else does--it's awful!" Father said, "Watch him closely and reverently, look into his face and hear the music of the ages. Don't pay too much attention to the sounds--for if you do, you may miss the music. You won't get a wild, heroic ride to heaven on pretty little sounds."³

²Charles E. Ives, Memos, ed. by John Kirkpatrick (New York: W. W. Norton & Company, Inc., 1972), pp. 132-33.

³*Ibid.*, p. 132.

Music took on special meaning to Charles Ives when his father played or conducted. He had a very strong devotion to his father and frequently praised him.

Father also had a gift for playing. He'd take a familiar piece and play it to make it mean more than something just usual. . . . The things he played then (during the war) were mostly the things that most bands played, but he put something in them that most band leaders didn't--ask Mr. Lincoln or Mr. Grant!⁴

Charles Ives admired his father's teaching and attitude toward music. He said,

One thing I am certain of is that, if I have done anything good in music, it was, first, because of my father, and second, because of my wife. What she has done for me I won't put down, because she won't let me. . . .

What my father did for me was not only in his teaching, on the technical side, etc., but in his influence, his personality, character, and open-mindedness, and his remarkable understanding of the ways of a boy's heart and mind. He had a remarkable talent for music and for the nature of music and sound, and also a philosophy of music that was unusual. Besides starting my music lessons when I was five years old, and keeping me at music in many ways until he died, with the best teaching that a boy could have, Father knew (and filled me up with) Bach and the best of the classical music, and the study of harmony and counterpoint etc., and musical history. Above all this, he kept my interest and encouraged open-mindedness in all matters that needed it in any way.

For instance, he thought that man as a rule didn't use the faculties that the Creator had given him hard enough. I couldn't have been over ten years old when he would occasionally have us sing, for instance, a tune like The Swanee River in the key of E-flat, but play the accompaniment in the key of C. This was to stretch our ears and strengthen our musical minds, so that they could learn to use and translate things that might be used and translated (in the art of music) more than they had been. In this instance, I don't think he had the possibility of polytonality in composition in mind as much as to encourage the use of the ears--and

⁴Ibid., pp. 45-46.

for them and the mind to think for themselves and be more independent--in other words, not to be too dependent upon customs and habits.⁵

George Ives liked to experiment with dissonant sounds and harmony. Charles Ives respected these experiments and later wished that his father had composed or written about them. Charles Ives said,

Father had a kind of natural interest in sounds of every kind, everywhere, known or unknown, measures "as such" or not, and this led him into positions or situations . . . that made some of the townspeople call him a crank whenever he appeared in public with some of his contraptions. But as I and (better) my aunts and some of the older people remember, this was not often. The "Humanophone" and Glass Orchestra were some of these contraptions. This interest in this side of music took all his extra time. He did but little composing--a few things or arrangements for bands--in fact he had little interest in it for himself, and it was too bad he didn't, for it would have shown these interests, and they would have been in some keepable form. He didn't write text books (though I have some copies of some of his class talks etc.) and he didn't write many letters. He left little behind except memories of him in others.⁶

George Ives attempted to "stretch the unwilling ears and minds of performers,"⁷ and listeners as well, to new musical possibilities. The following are typical experiments conducted by him with the assistance of family members and community musicians: (1) he attempted to reproduce on the piano a tone-color combination which he had heard while standing in a thunderstorm listening to the sound of a church bell next door; (2) he played instruments which sounded over Danbury pond and listened to the echoes that

⁵Ibid., pp. 114-15.

⁶Ibid., p. 45.

⁷Cowell, Charles Ives, p. 12.

came back, then tried to imitate the altered quality and tone color of the echo; (3) he tuned a piano in actual partials to match the sound of the overtone series; (4) he tuned glasses to create scales without octaves, or in intervals smaller than half steps; (5) he constructed a string instrument designed to play quarter tones and then, with his family, performed and sang quarter tones added to simple melodies; (6) he positioned sections of his band at various locations and had them play in turn a specially composed variation on tunes such as Greenland's Icy Mountains or Jerusalem the Golden.⁸ This was done to hear the effects of distant placement on tone color and volume; (7) he placed musicians at various locations and had them simultaneously play different music without being rhythmically synchronized or in the same key; (8) he played piano accompaniments in a different key than the song being sung, and (9) he developed a choral technique which he called the "humanophone," an arrangement of singers in which each person sang a different note of the scale and that note only when it was used in the tune being performed.

When young Charles Ives began composing at age eight, his father instructed him in harmony, counterpoint, and sight-reading. He wanted him to learn the rudiments first and only then to experiment. Charles Ives gained much early experience with instruments by playing in his father's

⁸Ibid., p. 21.

band and making arrangements for the group. His first compositions were funeral dirges for family pets; he composed a passacaglia based on the "Dead March" from Saul by Handel when his dog died. At thirteen he composed a march called "Holiday Quick Step" which was played by his father's band for the Decoration Day Parade.⁹

Charles Ives performed regularly as a church organist, beginning in 1887 at the West Street Congregational Church in Danbury. The following year he was promoted to a better job at the First Baptist Church of Danbury. He gave frequent organ recitals and was highly regarded as a performer. His performing career as an organist continued through his college years at Yale when he played at the Centre Church on the Green. In 1898 he moved to New York and took an organist-choirmaster job at the First Presbyterian Church in Bloomfield, New Jersey. In 1899 he took a similar position at the Central Presbyterian Church in New York City. He worked there until 1902 and then resigned to have more time for composition.

Charles Ives attended Yale University from 1894 until 1898. His organ teacher was Dudley Buck; he studied composition with H. R. Shelley and Horatio Parker. Ives gave very little credit to his studies with Parker and considered him to have been "hard boiled" and of the "German rule."¹⁰

⁹Ibid., p. 27.

¹⁰Ibid., p. 33.

When I went to New Haven, and took the courses with Professor Horatio W. Parker, in connection with the regular academic courses in Freshman year, I felt more and more what a remarkable background and start Father had given me in music. Parker was a composer and widely known, and Father was not a composer and little known--but from every other standpoint I should say that Father was by far the greater man. Parker was a bright man, a good technician, but apparently willing to be limited by what Rheinberger et al and the German tradition had taught him. After the first two or three weeks in Freshman year, I didn't bother him with any of the experimental ideas that Father had been willing for me to think about, discuss, and try out. Father died in October 1894, during my Freshman year.¹¹

After his father's death Charles Ives became convinced that he should go into business for financial reasons, and pursue his music as a secondary endeavor. George Ives had always criticized music that was commercialized, and in order to make a living as a composer, Charles assumed that he would have to compromise his unusual musical ideas and become more commercial. He therefore went into business, became very successful as an insurance man, and made reforms in that profession which are still practiced today. "If music would not support him, he would have to go into business to support it."¹² He explained by saying,

Some ask me about, and apparently don't get it right, why and how a man who apparently likes music so much goes into business.

As a boy I was partially ashamed of music,--entirely wrong attitude but it was strong. Most boys in the country towns of America I think felt the same way. When other boys on Monday morning in vacation were out driving the grocery cart, riding horses or playing ball, I felt all wrong to stay in and play the

¹¹Ives, Memos, pp. 115-16.

¹²Cowell, Charles Ives, p. 37.

piano. And there may be something in it. Hasn't music always been an emasculated art? Mozart helped too much.

Father felt that a man could keep his music interest stronger, cleaner, bigger and freer if he didn't try to make a living out of it. Assuming a man lives by himself and with no dependents, no one to feed but himself, and is willing to live as simply as Thoreau, he might write music that no one would play prettily, listen to or buy.

But--but if he has a nice wife and some nice children, how can he let the children starve on his dissonances? . . . So he has to weaken (and if he is a man he should weaken for his children) but his music . . . more than weakens--it goes "ta-ta" for money! Bad for him, bad for music!¹³

The years from 1898 to 1918 were Charles Ives's best for composing. He would get home from work about 6:30 P.M. and work steadily until 2:00 or 3:00 A.M. the following morning. He found little free time to attend concerts and had trouble composing freely when he did. The music he heard at concerts distracted him from his own music which he was always carrying around in his head. The freedom to compose music, unrestricted by commercial requirements or outside stylistic influences, allowed Ives to realize many aspects of his father's experiments. These years of successful composition were also happy years in Charles Ives's personal life, with his marriage to Harmony Twichell in 1908, and the adoption of their only child, Edith, in 1912.

After 1918 Charles Ives's health failed and he had trouble concentrating for long periods of time. His medical problems, which began with heart trouble and diabetes, eventually included cataracts and nervous system disorders.

¹³Ibid.

His insurance business during the day left him too exhausted to work well on compositions in the evenings. He spent the years from 1918 to 1930 in building the Ives and Myrick Insurance Agency into the largest in the nation, and in finishing arrangements of several songs composed many years earlier. He also contributed large sums of money to get his music published and supported the modern music publication, New Music, which subsequently published many of his compositions. Ives supported other contemporary composers by funding concerts of new music and insisting that New Music publish a similar length work by another composer whenever they published one of his.

As a literary person, Charles Ives was involved in politics, business, and music. He fought for direct elections that meant voting on ideas, not men, and wrote a draft of a proposed twentieth amendment to the U.S. Constitution dealing with this idea. He had his proposal distributed widely, but failed to get it approved. Of his other political writings, the best known was titled "The Majority," written between 1912 and 1922, which dealt with transcendental ideas applied to economic and political thinking. The Amount to Carry--Measuring the Prospect of 1912 was Ives's instruction manual for new insurance agents, but it became a standard for the entire insurance business. His moralizing and reflections on transcendental thoughts characterized his business principles as well as his political ideals.

In 1915 Ives completed his Second Piano Sonata ("Concord, Massachusetts, 1845") and began writing his Essays before a Sonata, which he intended to have accompany the musical score. He finished the Essays in 1920 and had them published separately. They revealed his deepest musical beliefs and covered his moral ethic of transcendentalism. In the Essays he discussed the problems of finding a balance between substance (moral, or programmatic idea) and manner (style of composition, clichés, etc.) in music, and of tracing the source of inspiration for a piece of music. He defended individual freedom, and condemned composers who bend their music to fit the model of their teachers or the public. He thought that music as it exists today is just a beginning, and that through the development of more efficient kinds of notation and instrumental capabilities, music will become more substantive and true. He considered the limitations of the abilities of performers and of the designs of instruments to be problems of immediate importance to modern composers. He believed that until such time as musical expression can encompass all of the sounds envisioned by the composer and recreate them freely, music will remain an imperfect expression. Ives said,

Music may be yet unborn. Perhaps no music has ever been written or heard. Perhaps the birth of art will take place at the moment, in which the last man, who is willing to make a living out of art is gone and gone forever. In the history of this youthful world the best product that human-beings can boast of is probably,

Beethoven--but, maybe even his art is as nothing in comparison with the future product of some coal-miner's soul in the forty-first century.¹⁴

Ives praised Beethoven for his effective use of the violin and piano to express his musical ideas, not allowing their respective traditions to restrict his art. Charles Ives said, "The instrument!--there is the perennial difficulty--there is music's limitations."¹⁵

Some fiddler was once honest or brave enough, or perhaps ignorant enough, to say that Beethoven didn't know how to write for the violin, --that, maybe, is one of the many reasons Beethoven is not a Vieuxtemps. Another man says Beethoven's piano sonatas are not pianistic--with a little effort, perhaps, Beethoven could have become a Thalberg.¹⁶

After 1930 Charles Ives was in retirement from the insurance business and, due to his poor health, from music as well. His music was performed and discussed widely after this time, but Ives stayed away from the concert halls and lived quietly with his wife until his death in 1954. Ives's spirit of independence and truth to his ideals had inspired many musicians during the years of the first performances and publications of his works. His Third Symphony won the Pulitzer prize in 1947. Ives, however, rejected the praise for his composition (written in 1911) by saying "Prizes are the badges of mediocrity."¹⁷

¹⁴Charles E. Ives, Essays before a Sonata, in Three Classics in the Aesthetic of Music (1920; reprint ed., New York: Dover Publications, Inc., 1962), p. 172.

¹⁵Ibid., p. 168.

¹⁶Ibid., p. 169.

¹⁷Cowell, Charles Ives, p. 115.

After the death of Arnold Schoenberg in 1951, his widow mailed to Mr. and Mrs. Ives a sheet she found among his papers on which he had written the following:

There is a great Man living in this Country--a composer.
 He has solved the problem how to preserve one's self and to learn.
 He responds to negligence by contempt.
 He is not forced to accept praise or blame.
 His name is Ives.¹⁸

As a writer and philosopher Charles Ives contemplated the preeminent transcendentalist, Ralph Waldo Emerson. As a composer, in such works as Three Places in New England or the Fourth Symphony, Ives made an eloquent statement of the transcendence of banal tunes and human events. The transcendentalist movement was very much a part of the nineteenth century, and Ives was one of its greatest champions. He has been compared to Emerson by William Kearns, who said,

In several ways Ives and Emerson were similar. Both were well-trained as composer and preacher respectively; however, both avoided professional careers in their areas of training. Ives inherited from Emerson the philosophical basis of transcendentalism--faith in individual intuition and belief in a divine harmony of nature as interpreted through local American circumstances: the Puritan-Universalist tradition, the United States character and experience, the romantic movement, and faith in democracy. Ives declared his independence from European culture, as Emerson had done in his essay "Nature" in 1837, not by rejecting that authority (note Ives's life-long involvement with the music of Bach and Beethoven) but by weaving European influences along with American impressions (i.e., Lowell Mason hymns, patriotic airs, Gospel songs) into a musical expression of national purpose and aspiration. Ives's tune quotations are the musical equivalents of Emerson's "lapidary" essay style, and fragments of "Columbia," "America," and "Tramp, Tramp, Tramp" leap out at us just as Emerson's well-chiseled homilies--"Hitch your wagon to a star," "Be silent so we may hear the whispers of the

¹⁸Quoted in Cowell, Charles Ives, p. 114.

gods," "A foolish consistency is the hobgoblin of little minds." But the unity, the "substance" of an Emerson essay or an Ives composition is not, in the composer's view, a summation of verbal or musical aphorisms. In his Essays before a Sonata, Ives notes Emerson's achievement--the search for truth by illuminating "the large unity of a series of particular aspects of a subject." In reaching for this "substance," Emerson may have had a disinterest in clarity; his essays may lack didactic structure; he may have neglected continuity in expression and disregarded logical sequence. Ives, of course, was fully conscious of these features in his own work, for he believed such stylistic "inconsistencies" were a necessary analogue for the seeming non-sequential and vague nature of life itself. For both Emerson and Ives no subject was mundane, no item too insignificant to be an illustration of some "great primal truth."¹⁹

A listing of the complete works of Charles Ives is difficult because he did so many revisions and rearrangements of early works. In 1935 Ives made his first attempt at a complete listing of his compositions. John Kirkpatrick said, "From 1935 on, Ives had various lists of his works typed up. . . . The earliest is different from all the others in being numbered and in chronological order."²⁰ This 1935 list is given in Appendix 1, and can be used to show how Ives grouped his early works without recognizing their respective titles. The major compositions are all shown in this list. It is interesting to note that Ives frequently was working on several large works at the same time instead of completing one before starting another. A complete listing of the shorter works is available in Memos,

¹⁹William Kearns, "Charles Ives: An Appreciation at the Centenary Celebration of His Birth," program notes, University of Colorado, October 20, 1974.

²⁰Ives, Memos, p. 149.

Appendix 3. This list names individually the works omitted or "lumped together" in the earlier 1935 listing.²¹

To examine the compositional style and techniques of Charles Ives, five short works for small orchestra have been chosen for study. These are listed below in Table 1. Each of these works will be discussed in the following chapters and examples of compositional style will be made from them. Most of the musical innovations found in the longer mature works of Charles Ives are also found in these five compositions.

TABLE 1
SELECTED REPRESENTATIVE COMPOSITIONS

Title	Date*	Approximate Duration
1. <u>Calcium Light Night</u>	1898-1907	2 minutes
2. <u>Central Park in the Dark</u>	1906	3 minutes
3. <u>The Unanswered Question</u>	1908	8 minutes
4. <u>Tone Roads No. 3</u>	1915	2 minutes, 30 seconds
5. <u>The Gong on the Hook and Ladder</u>	Before 1912	3 minutes

*SOURCE: Ives, Memos, Appendix 3, pp. 152-66.

²¹Ibid., pp. 152-66.

CHAPTER II

PROGRAMMATIC INTENTIONS

Charles Ives seldom composed without a program to explain or model the music upon. He believed that without an accompanying program his music would be too imperfect an expression to communicate clearly. He also thought that a model of familiar natural sounds could be used to explain and justify his radical musical ideas. Believing that music had been afflicted with too much conformity and that program music required freedom to be expressive, he said,

. . . when once one [is] using "tones" to take off or picture a football game for instance, [how] natural it is to use sound and rhythm combinations that are quite apart from those that would be a "regular music." For instance, in picturing the excitement, sounds and songs across the field and grandstand, you could not do it with a nice fugue in C.¹

Ives was convinced that music would remain a transcendental language of "artistic intuitions," and that it could never "satisfy the curious definiteness of man."² He said,

That which the composer intends to represent as "high vitality" sounds like something quite different to different listeners. That which I like to think

¹Ives, Memos, p. 40.

²Ives, Essays before a Sonata, p. 156.

suggests Thoreau's submission to nature may, to another, seem something like Hawthorne's "conception of the relentlessness of an evil conscience"--and to the rest of our friends, but a series of unpleasant sounds. How far can the composer be held accountable?³

Later in the same discussion Ives said,

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--one part of the same thing is coming in while another part is going out of existence.⁴

The five works selected for analysis in this study, as well as others like them, were used by Ives to develop the techniques which he used in the composition of larger programmatic compositions, such as his Fourth Symphony and the Concord Sonata. In reference to the short programmatic works of his early and middle periods Ives said,

[These pieces were] half serious, half in fun, but carefully worked out. I'll have to admit that some of these shorter pieces . . . were in part made to strengthen the ear muscles, the mind muscles, and perhaps the soul muscles too. . . . They all had a reasonable plan to build on, from a technical standpoint.⁵

He also said, "But doing things like this (half horsing) would suggest and get one used to technical processes that could be developed in something more serious later, and quite naturally."⁶

Ives wrote out some of his program explanations later in Memos; otherwise they accompanied the score. The five works analyzed in this thesis are in many ways related

³Ibid. ⁴Ibid., p. 157.

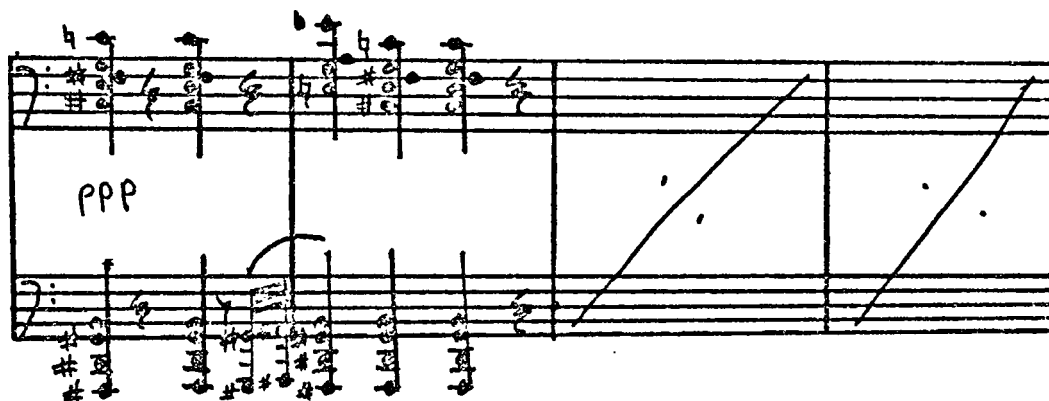
⁵Ives, Memos, p. 63. ⁶Ibid., p. 61.

musically to their respective programs. The following discussion covers some of Ives's programmatic techniques in these five works.

"Calcium Light Night was an evocation of the torch-light parades [fraternity sponsored] at the time of student society elections, [and] was approved by [the] Yale Club of 34 Gramercy Park."⁷ Ives used three borrowed college fraternity songs to associate with the singing of the parading students. These include two songs from Delta Kappa Epsilon and one from Psi Upsilon. Calcium Light Night begins ppp, crescendos to fff and then diminuendos to ppp, giving the programmatic effect of a passing parade, which gets closer, passes, and then gets fainter in the distance. Although the piano is not a parade instrument, in Calcium Light Night Ives used it by incorporating a technique which he called "piano drumming." This referred to a practice which Ives developed as a child playing in his father's band. He played percussion parts on the piano, using chord clusters that didn't interfere with the other fixed harmonies and produced a sound similar to a bass drum. This technique is shown in Example 1, page 18.

The "piano drumming" in Calcium Light Night is a perfect example of the technique as Ives himself explained it. He said,

⁷Ibid., p. 266.



Example 1. Ives, Calcium Light Night, piano, p. 1, mm. 1-4.

When I was a boy, I played in my father's brass band, usually one of the drums. Except when counting rests, the practising was done on a rubber-top cheese box or on the piano. The snare and bass drum parts were written on the same staff, and there were plenty of dittos. In practising the drum parts on the piano (not on the drum--neighbour's requests), I remember getting tired of using the tonic and dominant and subdominant triads, and Doh and Soh etc. in the bass. So I got to trying out sets of notes to go with or take-off the drums--for the snare drum, right-hand notes usually closer together--and for the bass drum, wider chords. They had little to do with the harmony of the piece, and were used only as sound-combinations as such. For the explosive notes or heavy accents in either drum, the fist or flat of the hand was sometimes used, usually longer groups in the right hand than left hand.

Father didn't object to all of this, if it was done with some musical sense--that is, if I would make some effort to find out what was going on, with some reason. For instance, I found that often I kept a different set of notes going in each hand, and that the right-hand chords would move up and down more, and change more, than those of the left hand. And then for accents the hands would go usually in opposite directions, the right hand up, the left hand down--also that triads and chords without bites were quite out of place, or any combinations that suggested fixed tonalities. And sometimes, when practising with others or in the school orchestra, I would play drum parts on the piano, and I noticed that it didn't seem to bother the other players--if I would keep away from triads, etc., that suggested

a key. A popular chord in the right hand was Doh-sharp-Me-Soh-Doh-natural, sometimes a Ray-sharp on top, or Doh-Me-Soh-Ti, and one with two white notes with thumb, having the little finger run into a 7th or octave-and-semitone over the lower thumb note. The left hand often would take two black notes on top with thumb, and run down the rest on white or mixed.⁸

In the accompanying notes to the unpublished score of Central Park in the Dark, Ives said,

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 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.⁹

To create the atmosphere of "night sounds" on a "hot summer night" Ives used a string chordal phrase, repeated throughout the composition without any development. Interrupting this "silent darkness" are bits of melody heard softly as though from a distance. These melodic fragments are mostly ragtime rhythms which reflect the popularity of ragtime music in New York. The melodies are supposed to be coming from "the casino over the pond," and from "pianolas

⁸Ibid., pp. 42-43.

⁹Charles E. Ives, "Central Park in the Dark," unpublished score, Yale University Library, New Haven, Connecticut, p. 34.

in the apartment house over the garden wall." "Hello! Ma Baby" is quoted prominently by the piano four times, each time with dissonant accompaniment in basic ragtime rhythms. Bitonality is also used to express the contrasts between the simultaneous statements of "Hello! Ma Baby" and several different sources of similar sounds.

The differentiation between the strings playing their repeated phrase ("silent darkness") and the other instruments playing the melodic fragments heard as interruptions is aided by contrasting tempi. This requires the use of a second conductor throughout the middle section of Central Park in the Dark. In this section the texture of several imitative lines of ragtime rhythms becomes very thick. To this, Ives added a line of running sixteenth notes to represent the runaway cabhorse, and some quick ascending and descending chromatic passages played by the flute and oboe to represent the siren of the fire engine. The flute and oboe also have a syncopated unison part that resembles the ringing of a bell on a fire engine or street car. A climax of confusion is reached and then the "silent darkness" (strings) is heard clearly once again with only a few distant "echoes over the pond" to accompany it. The piece then ends as it began, with only the strings.

Ives's choice of borrowed tunes in Central Park in the Dark was made for their programmatic connections; the music thus would have greater meaning to one familiar with the tunes. The recognition value of those tunes today is

somewhat lost, and to some critics this has weakened the program aspect of the music. Kurt Stone concluded that "Consequently since their musical characteristics have been all but disregarded . . . one cannot escape the suspicion that musically speaking any other tunes would have done just as well."¹⁰

In the foreword to the published score of The Unanswered Question, Ives said,

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."¹¹

Henry Cowell thought very highly of The Unanswered Question. He said,

One of Ives's most spectacular achievements is the invention of a form which logically uses consonance and dissonance in a single piece; this occurs in the music for small orchestra called The Unanswered Question.¹²

¹⁰Kurt Stone, "Ives's Fourth Symphony: A Review," The Musical Quarterly 52 (1966): 14.

¹¹Charles E. Ives, "Foreword" to The Unanswered Question (New York: Southern Music Publishing Co., 1953), p. 2.

¹²Cowell, Charles Ives, p. 176.

The program which Ives gave in the foreword to the score tells the different roles played by the strings, trumpet, and flutes. Each of these three has material which contrasts with that of each of the others. The three parts are never played simultaneously. Ives instructed that "The string quartet or string orchestra (con sordini), if possible, should be "off stage," or away from the trumpet and flutes."¹³ The soft, consonant harmonies of the strings (Druids) "Who Know, See and Hear Nothing" remain unchanged in tempo throughout the piece. The flutes ("The Fighting Answerers") become louder, faster, and more dissonant following each successive trumpet entrance, and, due to their independence of tempo, require a separate conductor. The last statement of the trumpet question is accompanied by the sustained final chord of the strings and is unanswered by the flutes.

Ives wrote in Memos,

The Tone Roads are roads leading right and left-- "F. E. Hartwell & Co., Gents' Furnishings"--just starting an afternoon's sport. If horses and wagons can go sometimes on different roads (hill road, muddy road, rocky straight, crooked, hilly hard road) at the same time, and get to Main Street eventually--why can't different instruments on different staves? The wagons and people and roads are all in the same township--same mud, breathing the same air, same temperature, going to the same place, speaking the same language (sometimes)--but not all going on the same road, all going their own way, each trip different to each driver, different people, different cuds, not all chewing in the key of C--that is, not all in the same key--or same number of steps per mile.

¹³Ives, "Foreword" to The Unanswered Question, p. 2.

"E. C. T." is the man for us!
 He certainly is a nice old Cuss.
 He's steppin' fleet an' neat
 Right down old Center Street
 A-makin' for the Danbury Bus.

So! Arthur! Why can't each one, if he feels like trying to, go along the staff-highways of music, each hearing the other's "trip" making its own sound-way, in the same township of fundamental sounds--yet different, when you think of where George is just now, down in the swamp, while you are on Tallcot Mountain--then the sun sets and all are on Main Street.¹⁴

The program for Tone Roads No. 3 is a suggestion that music could be written containing several different lines independently working out to a common cadence. Ives accomplished this by using a highly chromatic linear construction and contrasting the patterns of accent and gruppetti in each line. The form of Tone Roads No. 3 is sectional. Unity is achieved by the repetition of two large sections and by repetitions of smaller elements such as bass ostinati. As the work develops, the dynamics and tempos increase and the texture thickens. Of the five works analyzed in this study the greatest amount of experimentation with counterrhythms and contrasting textural levels is in this work. Henry Cowell thought that Tone Roads No. 3 was a fantasy on the tone color of chimes, which are used throughout the composition, and praised Ives for being so inventive. He said,

The "tone road" is the tone of the chime, and the whole is a fantasy on the mood of the chime tone. Chime tones are in themselves a rather dissonant complex, but

¹⁴Ives, *Memos*, pp. 63-64.

they can hardly have been used in atonal melody with wide dissonant leaps before.¹⁵

Ives wrote about The Gong on the Hook and Ladder in Memos,

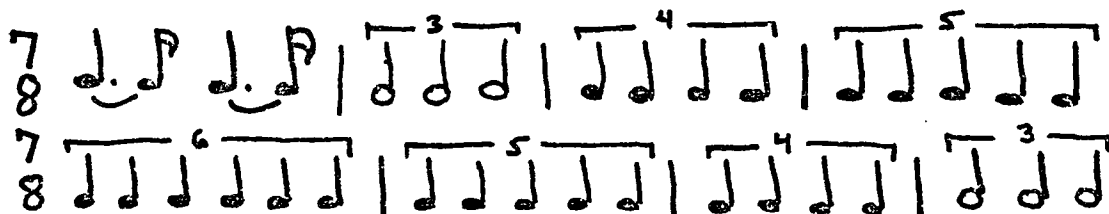
The Gong on the Hook and Ladder is another nice joke, which most everybody can see except a nice, routine conductor (near-musician). . . . The annual Parade of the neighborhood Volunteer Fire Company was a slow marching affair--for the Hook and Ladder was heavy, and the Gong on the hind wheel "must ring steady-like"--and coming downhill and holding backward fast, and going uphill out of step, fast and slow, the Gong seemed sometimes out of step with the Band, and sometimes the Band out of step with the Gong--but the Gong usually got the best of it. Nobody always seemed to "keep step," but they got there just the same--but not with the nice conductors.¹⁶

The Gong on the Hook and Ladder is similar to Tone Roads No. 3 in orchestration and in the use of chromaticism. The meter is seven-eight and the rhythmic style is that of a march with frequent use of dotted eighth followed by sixteenth-note patterns. The pulsation on the first beat of each bar is unusually strong for Ives's music and the result is the feeling of an "out-of-step" or odd-meter march (as each measure comes out a half beat short). The same approaching and passing parade effect is used in The Gong on the Hook and Ladder as was used in Calcium Light Night. The melodic material in The Gong on the Hook and Ladder is original. Formally, there are three sections, (ABA'), and in the B section the dotted rhythm are replaced by even eighth notes, giving the effect of being more "in step."

¹⁵Cowell, Charles Ives, p. 171.

¹⁶Ives, Memos, p. 62.

The program describes changes in speed as the "Hook and Ladder" goes "uphill and downhill." To accomplish this effect of changing speeds in the music, Ives has written gruppetti having increasing and decreasing number of divisions of the measure (Example 2).



Example 2. Ives, The Gong on the Hook and Ladder, bassoon, cello, bass, triangle, pp. 3-5, mm. 1-8.

The "gong" is represented by the timpani with optional gong doubling. The "gong" part is a timpani roll played on the first beat of each measure. This is supported in the A and A' sections by the piano, and in the B section by the strings. These "gong" parts are played sforzando to imitate the ring of the bell.

The similarity in the programs for the five preceding compositions is that each program suggests a musical treatment with contrasting elements acting independently. The desired effect is the mixture of those elements without their loss of identity and not the development of melodic or rhythmic material. The program is used therefore to unify the combination of diverse musical elements and to allow a presentation of them that is understandable to the listener.

The use of innovative musical ideas in program music and the use of the program to justify and explain the new techniques is an important characteristic in the music of Charles Ives. The type of program and the way it is written suggests that Ives was composing music for the program, but, just as often, a program for the music.

CHAPTER III

FORM

Charles Ives used both the "classical" forms (sonata form, fugue, theme and variations) and the simplest original and ternary forms in his compositions. The large orchestral works, such as his symphonies and overtures, frequently employ classical forms, as do certain of his piano and organ compositions. The works for chamber orchestra, being shorter and frequently programmatic, employ simple forms, with a ternary (ABA') form being the most common. Occasionally, Ives included an introduction, or a section to be repeated, but many of his well-balanced ternary forms contain no extra sections. A type of arch form is used in many of the shorter works, in which a cumulative buildup of texture, dynamics, and tempo in the A section leads to a climax in the B section. The A' section then reverses the progressive buildup so that the piece ends as it began. This type of form is found in Calcium Light Night, Central Park in the Dark, and The Gong on the Hook and Ladder.

The form of many of Ives's works is modified to suit specific programmatic requirements. Such is the case in The Unanswered Question and Tone Roads No. 3. The special forms

used in these works are discussed in this chapter and tables charting the form of each composition are provided. Each table includes an explanation of the symbols used and of any other special features of the table. Many of Ives's compositions employ several ostinati and themes. The themes are frequently borrowed tunes, and, when possible, the titles of these tunes are provided. The ostinati are assigned the last letters of the alphabet (U, V, W, X, Y, Z) and the themes, the first (a, b, c, d). Ives numbered measures in some works, but in others he used letters for measure identification. These letters are included in the table in the lines indicated as "measures." The instrumentation is given, so that the statements of the themes and ostinati can be indicated by their respective orchestration. The tonal centers are shown at the beginning and end, and within the piece if the tonal center changes.

The form of Calcium Light Night is ABA', with three sections of nearly equal length (see Table 2, page 29). The A section is divided into nine "measure sections" which are indicated in the score with alphabetical letters in the reverse order of I-A. The "measure sections" have various lengths of from one to four measures. The melodic material consists of four borrowed tunes which are introduced individually in the A section and combined in a cumulative texture. There is an increasing tempo and five progressively louder dynamic markings.

TABLE 2

FORM OF CALCIUM LIGHT NIGHT

<u>SECTION A</u>									
Meas.	1-3	4	5-6	7	8	9-11	12-15	16-19	20-23
	I	H	G	F	E	D	C	B	A
Trbn.		a ¹ _____				a ¹ _____	a ¹ _____		
Bsn.				a ¹ _____		a ¹ _____			
Piccolo					a ² _____				
Clar.							a ³ _____	a ⁴ _____	a ⁴ _____
Trpt.								a ³ _____	
Oboe								a ³ _____	a ³ _____
2 Pianos									
& S. Dr.	X_____								
	G tonal center						D tonal center		

<u>SECTION B</u>						
Meas.	24	26	28	29	30	33
	:					:
Oboe						
& Bsn.	a ¹ _____	b ¹ _____			a ⁴ _____	
Piccolo	a ² _____		a ² _____			
Trpt.	a ³ _____			a ³ _____		
Clar.	a ⁴ _____				a ⁴ _____	
Trbn.						
2 Pianos						
& S. Dr.	X_____					
	D tonal center					

<u>SECTION A'</u>									
Meas.	34-37	38-41	42-45	46-48	49	50	51-52	53	54-58
	A	B	C	D	E	F	G	H	I
Oboe	a ³ _____								
Trpt.	a ³ _____	a ³ _____							
Bsn.		a ¹ _____	a ¹ _____	a ¹ _____	a ¹ _____	a ¹ _____			
Clar.			a ⁴ _____	a ³ _____					
Piccolo					a ² _____	a ² _____			
Trbn.	a ¹ _____	a ¹ _____	a ¹ _____	a ¹ _____	a ¹ _____	a ¹ _____		a ¹ _____	
2 Pianos									
& S. Dr.	X_____								
	D tonal center					G tonal center			

a¹ = "Beulah's Land"a² = "The Bonnie Blue Flag"a³ = Borrowed tunea⁴ = "Tramp, Tramp, Tramp"b¹ = "Marching Through Georgia"

X = Two pianos ("piano drumming") and snare drum

I-A = Lettered measures ("measure sections") used in retro-grade

The four borrowed fraternity songs are accompanied by "piano drumming" from two pianos, which provides a march-type rhythm and helps to unify the piece by being extended throughout the entire work. Example 1, page 18, gives an illustration of this "piano drumming." The harmony of "piano drumming" is nearly always a cluster chord, and, in Calcium Light Night, the prominent "piano drumming" is a cluster-chord ostinato.

The A section is smoothly connected to the B section with polyphonic material (themes a^3 and a^4) in measures 23-24. The B section is repeated and has a total length of twenty measures, three measures less than the A or A' sections. There is one new tune introduced in the B section (in measure 28), but otherwise the section is based on themes a^1 - a^4 . The B section is thematically dominated by the borrowed tune "Tramp, Tramp, Tramp" (a^4). This theme entered late (measure 19) in the A section in two short phrases, but it is played continually throughout the B section.

A climax is reached in measures 31-33 where there is a concentration of thematic material in a thick texture. The repetition of the B section does not lessen this effect, because the repetition is played louder than the original statement of the section. In the repetition of the B section, the trumpet has a whole note in measure 24 instead of the second half of a statement of theme a^3 which it had the

first time. The alteration of that measure was necessary in order to resolve the cadential effect at the end of the B section the first time through, and to cancel that portion of melody a³ in measure 24 which was originally the end of the melody begun in the A section.

The A' section is interesting because it is a retrograde of the A section, using the "measure sections" as retrograde units. These lettered measure groups are in the alphabetical order of A-I in the A' section and only subtle changes have been made to facilitate the voice leading. This is illustrated in Example 3, page 32, and Example 4, page 33, where the "measure sections" I-E from the A section are compared to the "measure sections" F-I of the A' section.

The A' section, being a retrograde of the A section, has a diminuendo and ritardando to the end, and a progressively thinner texture. The arch shape of this form is obvious, and because the work is so short, a listener would perhaps miss the distinction between the sections and hear only the arch of the form. Harmonically, the form begins with a tonal center on G, established by the borrowed tunes. This tonal center modulates to a dominant (D) relationship for the B section. Section A' has the tonal center of D through measure 41. At this point thematic fragments based on the tonal centers of G and D alternate. The last thematic fragment (a¹) is based on a tonal center of G as it was at the beginning of the A section. The harmonic scheme of the arch form is therefore complete.

Calcium Light Night

by
Charles Ives
arranged by
Henry Cowell

Slow March time

Accelerate a little up till Turning Point

The musical score is written on 12 staves. The top staff shows the key signature (F major) and the time signature (4/4). The score includes various musical notations such as notes, rests, and dynamic markings (ppp, pp). The score is divided into sections by vertical lines, with the first section labeled 'I 3 H G 5'. The score is written in a handwritten style with some corrections and annotations.

G. Schirmer, Inc., New York
Style No. 2-12 Staves

* All transposing instruments written in C in score to be transposed in Parts.

Printed in the U.S.A.

Example 3. Ives, Calcium Light Night, p. 1,
mm. 1-8.

10

Handwritten musical score for Example 4, Ives, Calcium Light Night, p. 10, mm. 50-58. The score is written on 12 staves, with the first staff labeled "pic" and the last staff labeled "H". The staves are numbered 50, 52, 54, 56, and 58. The score includes various musical notations, including notes, rests, and dynamic markings such as *pp*, *ppp*, and *ppp*. The score is written in a handwritten style, with some corrections and annotations.

Example 4. Ives, Calcium Light Night, p. 10,
mm. 50-58.

Central Park in the Dark has an ABA' form with uneven sectional lengths (see Table 3, page 35). The A section contains sixty measures, but the A' section is truncated, with only twenty-one measures. The B section is approximately equal in length to the A section, with fifty-four measures. A special feature of Central Park in the Dark is an ostinato played by the strings. This ostinato consists of a ten-measure chordal phrase that is repeated, without any change in tempo or dynamics, throughout the piece. The ostinato has a tonal center of A-flat, and establishes the tonal center in all three sections of the work. This ostinato is illustrated in Example 5, page 36.

The A section begins with a complete statement of the ostinato (measures 1-10) before any thematic material is introduced. This serves as an introduction and is necessary as a programmatic element, representing the quiet of night time in Central Park. The first melodic material (theme a¹) enters in measure 12. More thematic material enters in measures 24-34 in the form of a polyphonic pyramid of texture. These melodic fragments are presumably based on borrowed tunes, but because of their rhythmic and melodic alterations, they are unidentifiable by this author. These themes (a¹, a², and a³) are shown in Example 6, page 37.

In measure 47, the piano enters with a ragtime-style syncopated theme that is played at first by the left hand alone. This theme becomes an accompaniment to the borrowed

TABLE 3

FORM OF CENTRAL PARK IN THE DARK

SECTION A

Meas.	1	12	24	28	31	42	44	47	59	60
Clar.		a ¹ —	a ¹ —			a ¹ —			a ¹ —	
Flute				a ² —						
Oboe					a ² —	a ² —				
Solo Vln.							a ³ —			
Piano I								a ⁴ —		a ⁴ —
Strings	X—									

A-flat tonal center

SECTION B

Meas.	64	65	67	69	77	79	80	89	91	101	103	114	118
Piccolo										Y—			
Clar.							b ¹ —		Z—				
Flute		a ² —		a ² —			a ² —						
Oboe		a ² —		a ² —			a ² —		Z—				
Bsn.									a ⁴ —				
Trpt.											b ¹ —		
Trbn.									a ⁴ —		a ⁴ —		
Piano I		b ¹ —		b ¹ —					b ¹ —		b ¹ —		
Piano I		a ⁴ —		a ⁴ —					a ⁴ —		a ⁴ —		
Strings	X—												
Piano II										Y—			

A-flat tonal center

SECTION A'

Meas.	119	126	131	132	135	139
Clar.		a ¹ —				
Flute			a ² —			
2 Vlns.				a ³ —		
Strings	X—					

A-flat tonal center

A-flat tonal center

a¹-a³ = Melodic fragments

a⁴ = Left-hand piano ragtime pattern (accompaniment to b¹)

b¹ = Borrowed tune "Hello! Ma Baby"

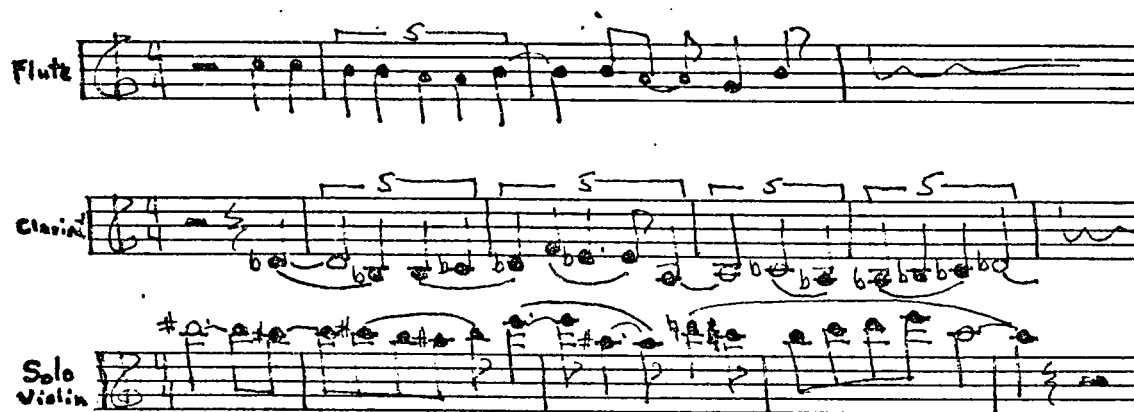
X = Ten-measure chordal ostinato played by strings (always Molto Adagio)

Y = Rhythm pattern in the B section ("piano drumming" with piccolo)

Z = Rhythm pattern in the B section (oboe-clarinet)

The image shows a handwritten musical score for strings, titled "Example 5. Ives, Central Park in the Dark, strings, pp. 1-2, mm. 1-10." The score is written on two systems of staves. The first system consists of four staves, and the second system also consists of four staves. The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings like "div." and "p". There are also numerical markings like "3" and "5" indicating triplets or quintets. The staves are connected by horizontal lines, and there are vertical bar lines separating measures.

Example 5. Ives, Central Park in the Dark, strings,
pp. 1-2, mm. 1-10.



Example 6. Ives, Central Park in the Dark, flute, p. 5, mm. 28-30; clarinet, pp. 4-5, mm. 24-28; violin, pp. 8-9, mm. 44-48.

theme "Hello! Ma Baby" (b^1) in the B section. Example 7 illustrates this accompaniment-style ragtime theme (a^4).



Example 7. Ives, Central Park in the Dark, piano, pp. 9-10, mm. 47-51.

The B section of Central Park in the Dark is interesting because Ives uses two different tempi simultaneously.

The string ostinato remains Molto Adagio and pianissimo, but the pianos, percussion, and winds become progressively faster and louder. The B section introduces a new borrowed theme (b¹), and combines it with theme a⁴ (see Example 6, page 37). Themes a¹ and a³ from the A section are not used in the B section, but theme a² is developed through imitation and counterpoint between rhythmically displaced statements of the same theme. A climax is reached in measures 103-118 in a thick texture consisting of the string ostinato (X), themes b¹ and a⁴, and two new rhythmic lines (Y and Z). This dramatic concentration of forces ends abruptly at measure 119. Ives's instructions in the notes that accompany the score explain this section more clearly.

From measure 64, page 12, on through measure 118, page 29, the ♩ of wood, brass, pianos and drums, grows gradually faster, but the ♩ of the string orchestra keeps the same tempo throughout. The strings play louder with the rest of the orchestra to measure 118--that is, until the rest of the orchestra reaches this measure, 118. Here the strings will decrescendo down to ppp and before the rest of the orchestra has stopped playing the chord in measure 118. The strings finish their ten-measure phrase, wherever they may be in it, when the rest of the orchestra stops playing measure 118, and then the strings go to measure 119 and the piece finishes as indicated.

From measure 64 on, until the rest of the orchestra has played measure 118, the relation of the string orchestra's measures to that of the other instruments need not and cannot be written down exactly, as the gradual accelerando of all but the strings may not be played in precisely the same tempi each time.¹

The A' section is a recapitulation of themes a¹, a², and a³, and a return to one tempo. Theme a⁴, the syncopated

¹Ives, Central Park in the Dark, p. 34.

ragtime melody, is omitted, since it was used in the A section to anticipate and lead into the ragtime statement of theme b¹ ("Hello! Ma Baby"). The string ostinato (X) ends the work with a completed statement of its ten-measure phrase, cadencing with a dominant to tonic relationship on A-flat.

The form of The Gong on the Hook and Ladder (Table 4, pages 40-41) is an ABA' structure with a truncated A' section similar to that of Central Park in the Dark. The A' section is identical to measures 9-13 of the A section except that a² has been added. Instead of coming later (measures 13-15) as it does in the A section, this theme has been moved up in the recapitulation (measures 32-35) to condense the section length. This ABA' form has more contrasting material between the A and B sections than did either Calcium Light Night or Central Park in the Dark. The A section has two themes. Theme a¹ is an original melody based on theme a², which is the borrowed tune "My Darling Clementine." Neither of these themes are used in the B section. A comparison of these two themes, showing their similar intervallic and rhythmic constructions, is illustrated in Example 8, page 41. The descending intervals of a perfect fourth and a major third found in theme a² are present in theme a¹ as well, but in reverse order. The dotted rhythms of theme a² are rhythmically the basis for theme a¹ and the sequential nature of the first two measures of theme a² are similar to those of theme a¹.

TABLE 4

FORM OF THE GONG ON THE HOOK AND LADDER

SECTION A										
Meas.	1	5	6	9	11	13	15	16	18	(Transition) 20 21
Flute						a ²	—			b ¹ —
Clar.			a ¹	a ¹ (a ¹)		a ²	—	~a ¹	—	b ¹ —
Bsn.	X	—	—	—	—	—	—	—	—	—
Trpt. I				a ¹ (a ¹)		a ²	—	~a ¹ (a ¹)	—	~
Trbn.		a ¹	a ¹ (a ¹)			a ²	—	a ¹ (a ¹)	—	b ¹ —
S. Dr.	Y	—	—	—	—	—	—	—	—	—
Triangle										
Cello	X	—	—	—	—	—	—	—	—	—
Bass										
Piano	Z	—	—	—	—	—	—	—	—	—
C tonal center										

SECTION B					
Meas.	22	24	27	29	30
Flute	b ¹ —	b ¹ —	b ⁴ (≈b ¹)	~	~
Clar.(≈b ¹)	b ² —		b ⁴ (≈b ¹)	~	~
Bsn.	W	—	—	—	—
Trpt. I	b ¹ —	b ¹ —	b ³ —	~	~
Trpt. II(≈b ¹)	b ² —		b ³ —	~	~
Trbn.	U	—	—	~	~
S. Dr.	Y	—	—	—	—
Strings	W	—	—	~	~
Piano(≈a ²)	V	—	—	—	—
C tonal center					

SECTION A' (≈ measures 9-13)					
Meas.	31	32	33	34	35
Clar.	a ¹ —		(a ¹)	—	—
Bsn.	X	—	—	—	—
Trpt. I	a ¹ —		(a ¹)	—	—
Trbn.	a ¹ —		(a ¹)	—	—
S. Dr.	Y	—	—	—	—
Violin I		a ²	—	—	—
Triangle					
Cello	X	—	—	—	—
Bass					
Piano	Z	—	—	—	—
C tonal center					

TABLE 4--Continued

-
- a^1 = Original melody (based on "My Darling Clementine")
 a^2 = Borrowed tune "My Darling Clementine"
 b^1 = Borrowed tune "Beulah's Land"
 b^2 = Paired clarinet and trumpet II (melody like b^1 , but fragmented)
 b^3 = Borrowed tune "Marching Through Georgia"
 b^4 = Paired flute and clarinet (melody like b^1 , but fragmented)
X = Chromatic pattern of changing gruppetti
Y = Two even beats per measure $\left[\frac{7}{8} \text{ and } \frac{7}{4} \text{ meter} \right]$
Z = Ostinato piano cluster chords (two per measure)
U = Trombone ostinato (counterpoint to W)
V = Piano cluster-style version of "My Darling Clementine"
W = Ostinato chords in strings, bass line doubled by bassoon
-



Example 8. Ives, *The Gong on the Hook and Ladder*, clarinet, violin I, pp. 13-14, mm. 31-35.

The unusual treatment of theme a^1 is indicated in Table 4, page 40, as a long melody line with a^1 in parenthesis above. This is because the first two measures, which are the sequential first half of the melody, are repeated

and tied to form a four-measure phrase. This version of theme a² is illustrated in Example 8, page 41.

The A section of The Gong on the Hook and Ladder is thoroughly unified by ostinati X, Y, and Z. The ostinati are layers in a polyphony of material (see Table 4, pages 40-41) that contrasts rhythmic gruppetti, themes, and cluster sonorities. The X ostinato is initially a chromatic scale with octave displacements. It breaks away from the chromatic pattern in measure 5, but a pattern of changing gruppetti is retained (see Example 2, page 25). The only unchanging feature of the piece is the snare drum part (ostinato Y) which has two notes per measure with an even division of the meter. This ostinato is particularly important because it provides the only march-like regularity to the programmatic idea of The Gong on the Hook and Ladder. The Z ostinato is a pattern of cluster chords by the piano in the style of "piano drumming."

Ives connects the A and B sections smoothly with a transition section (measures 20-21). The transition section introduces a new theme (b¹, "Beulah's Land") which seems to evolve from the last part of theme a¹. Theme a¹ is an original melody based on theme a² ("My Darling Clementine"). The similarity of these themes suggests that Ives was trying to achieve a closely knit thematic relationship where each new theme is an outgrowth of the previous theme. He styled his original melody (a¹) to resemble features of the

borrowed tunes (a^2 and b^1). This type of thematic development was discussed by Henry Cowell, who wrote,

. . . there is nearly always a great deal going on. There will be many sections of contrasting lengths. There will be a first theme and a contrasting second theme, and perhaps still further themes, although in the development of a single theme there may be so many aspects disclosed which suggest the theme to follow that one is hardly aware of the moment when the new theme is exposed.²

The B section of The Gong on the Hook and Ladder is only nine measures in length (measures 22-30), and, as in Calcium Light Night and Central Park in the Dark, it is the climax of cumulative textural, tempo, and dynamic changes in the A section. The tempo of the B section is Allegro Vivace and the dynamics are indicated as fortississimo (fff). The texture is polyphonic with themes b^1 and b^2 in counterpoint in measures 22-25, and themes b^3 and b^4 in counterpoint in measures 26-28. The ostinati in the B section are well contrasted with those of the A section. Three new ostinati are used. The U ostinato and the W ostinato are similar in rhythmic patterns, but have different pitches. They are lines without regular phrase structure or repetitive features. The piano ostinato (V) is a fast fanfare treatment of the borrowed tune "My Darling Clementine" with cluster-chord accompaniment.

The climax is reached in measures 29-30, where the themes and ostinati (except for ostinato Y) are lost and the

²Cowell, Charles Ives, p. 174.

texture thickens with sixteenth-note patterns and quarter-note triplet gruppetti. The meter changes to $\frac{7}{4}$ in measures 29 and 30, making them the equivalent of four measures of $\frac{7}{8}$ meter since the eighth note remains equal ($\text{♩} = \text{♩}$). The climax is programmatically intended to represent the musical confusion of the "out-of-step" parade and the band rhythmically falling apart. A ritard and a diminuendo in measure 30 signal the return of "order" and the recapitulation of the A section material.

A tonal center of C is established in The Gong on the Hook and Ladder by melodic material in the A and A' sections, and by the ostinati of the B section. The form, considered in terms of performance time duration, is nearly balanced between the A section and the B and A' sections combined (A[BA']). The recapitulation is particularly effective dramatically because the climax of the B section is so strongly contrasted with the recapitulation of the A material.

A formal plan very similar to the truncated recapitulation and displaced thematic order of the A' section in The Gong on the Hook and Ladder is found in the first movement of Ives's Concord Sonata, about which Henry Cowell commented,

Ives has a sense akin to Beethoven's of the recapitulation of the main motif as the moment of the most intense drama; but the position of this return is not likely to be in the conventionally assigned spot. In the first movement of the Concord Sonata, for instance, this dramatic point comes on the page just before the

end, instead of having the second theme developed after the first, in the return, both are developed together. This results in a far greater dramatic concentration of forces than is usual.³

The form of The Unanswered Question (Table 5) grows out of the programmatic material of the work and is an unusual, original form. It consists of an alteration between a main theme (A) and six imitative responses (B) to the theme. The main theme is played seven times by the trumpet, and the responses are played after the first six trumpet statements by four flutes. Each of the flute imitations of the theme are progressively more similar to the trumpet theme. Finally, the sixth imitation actually

TABLE 5

FORM OF THE UNANSWERED QUESTION

Meas.	1-16	20	23	26	31	34	38	41	45	47	51	52	58
Trpt.	A—	A—		A—	A—		A—	A—		A—	A—	A—	
Flutes		B—	B—		B(≈A)	B(≈A)		B(≈A)	B(≈A)		B(≈A)	B(≈A)	
Strings	X—												
	G tonal center						G tonal center						

A = Five note disjunct "question" phrase similar each time but with different rhythmic placement and different final note

B = Four parts (or two paired parts) progressively more in imitation of A, played by flutes; barred separately after measure 40

X = Chordal background of strings, barred with trumpet (A)

³Ibid.

quotes the pitches of the trumpet theme exactly. Example 9 illustrates the similarity between the fourth trumpet phrase and its flute answer. The melodic contour of the flute imitation and its rhythm pattern closely resemble the main-theme phrase.

The image shows a musical score for Example 9. It consists of two staves. The top staff is labeled 'Trumpet' and the bottom staff is labeled 'Flute'. The trumpet staff shows a melodic phrase with a treble clef and a key signature of one flat. The flute staff shows a response to the trumpet phrase, also with a treble clef and a key signature of one flat. The flute response is marked with a bracket and the word 'Flute'. The score illustrates the similarity between the trumpet phrase and the flute response, showing how the flute imitates the trumpet's melodic contour and rhythm pattern.

Example 9. Ives, The Unanswered Question, trumpet, p. 6, mm. 38-40; flutes, p. 6, mm. 41-43.

A chordal accompaniment (X) is heard throughout The Unanswered Question, played softly by the strings. This accompaniment begins and ends the piece alone, and is completely different material from the trumpet phrase (A) or flute responses (B). The chordal accompaniment has conjunct voice leading and is unchanging in tempo (Largo molto sempre). The flute responses are in a faster tempo with each successive entrance, and also are played at a louder

dynamic level each time. These differences create a strong contrast between the strings (X) and the flutes (B).

The harmony of the string chordal phrase is tertian (see Example 28, page 84), alternating between G major and G mixolydian. The tonal center of the work is G and does not modulate. The final cadence is dominant (D) to tonic (G).

The form of Tone Roads No. 3 (Table 6, page 48) is based on a Scherzo and Trio with extra sections. The work begins with a twelve-measure Introduction, followed by the Scherzo (Section A) which is also twelve measures in length. The Scherzo section is repeated, and then followed by an eleven-measure Trio which is also repeated (only measures 15-23 repeat). A fourth section of twelve measures (Section C) follows the Trio with new material. This section ends with a Dal Segno which returns to the beginning of the Scherzo (Section A). The ending comes at the end of the Scherzo section.

Tone Roads No. 3 has a balanced sectional form, with the Introduction and Scherzo (Section A) balanced against the Trio (Section B) and Section C. The total length of the work is sixty-eight measures, with thirty-six measures in the first half and thirty-two in the second. The only imbalance is that the Trio is eleven measures in length and is only partially repeated, making it a total of twenty measures compared with twenty-four in the Scherzo.

TABLE 6

FORM OF TONE ROADS NO. 3

	<u>INTRODUCTION</u>				<u>SECTION A (SCHERZO)</u>			
Meas.	A	G	J	L	1.	5	10	12
				:				:
Winds		a ¹ ~~~~~				a ¹ _____	a ² _____	Fine
Strings							a ² _____	
Chimes	X_____						~~~~~	
Piano							a ² _____	
	C tonal center							
	<u>SECTION B (TRIO)</u>				<u>SECTION C</u>			
Meas.	13	14	16	19	24	27	30	33
		:			:			
Winds			b ² _____	b ³ _____			c ³ _____	c ³ _____ D.S.
Strings			b ¹ _____		c ¹ _____	c ² _____	c ² _____	c ² _____
Chimes & Piano	Y_____							
Piano							c ¹ _____	
							C tonal center	

A-L = Twelve letters in alphabetical order used in the Introduction instead of measure numbers

a¹ = Non-imitative 4-part texture, begins in pyramid fashion in the Introduction

a² = Three-measure cadential pattern, played by all

b¹ = Chromatic triplets--paired strings play first time only

b² = Chromatic triplets--paired winds plus countermelody in trumpet second time only

b³ = Trombone melody, played both times

c¹ = Contrary-motion scales (4-part voicing)

c² = 4-part non-imitative counterpoint (strings)

c³ = 4-part non-imitative counterpoint (winds)

X = Twelve-tone melody--repeated three times, and modified after measure five

Y = Ostinato in Trio (three chords repeated in chimes and piano)

The Introduction includes a twelve-note, fully chromatic melody which is repeated with octave displacements and rhythmic alterations, and then begun again in the Scherzo section. This melody is played by the chimes, and, from its disjunct, fully chromatic line, a melodic style for the remainder of the work is established. This melody is illustrated in Example 10.



Example 10. Ives, Tone Roads No. 3, chimes, pp. 2-3, mm. A-G.

The Introduction has alphabetical letters placed by Ives above each measure, using the first twelve letters of the alphabet. These take the place of measure numbers, and have no function in the music. Their only purpose is to draw attention to the number twelve, which is the number of measures contained in three of the four sections of the work, and the number of tones in a chromatic scale. The chromatic scale is used for nearly all of the melodic material in Tone Roads No. 3.

The sections in Tone Roads No. 3 are contrasted with one another in texture as well as rhythmic and melodic material. The repetitions of Sections A and B are different, with new parts added, and different instrumentation. The

texture is changed in this way so that the repetition of a section is a development of the material in that section, not only a repetition. The texture is largely polyphonic, with several through-composed melodic lines, often in pairs of similar material.

In Tone Roads No. 3 it is difficult to assign the label "theme" to the melodic material. The parts labeled a^1 , a^2 , etc., in the form table of Tone Roads No. 3 (Table 6, page 48) are actually several lines combined into a textural unit. These texture units are used instead of single-line themes. The only unit to extend beyond a single section of the work is a^1 which begins as a pyramid of texture in the Introduction.

The twelve-tone melody (X) (see Example 10, page 49) is used in two sections (Introduction and Section A), but never with the same rhythmic pattern or linear contour. The linear material in the C section can be grouped into several parts (c^1 , c^2 , and c^3) that are repeated and that are similar to the polyphonic texture units in the A section. These texture units are combined to form a multi-layered texture. Example 11, page 51, illustrates the texture unit c^2 (measures 27-29) and the beginning of a combination of the texture units c^2 and c^3 (measures 30-31). Texture unit c^2 includes the violins I and II, viola, cello, and bass. Texture unit c^3 includes the flute, clarinet, trumpet, and trombone, thus contrasting the tone color of the winds and strings.

11

Allegro vivace

Flute

Clarinet

Trumpet

Trombone

Chimes

Violin I

Violin II

Viola

Cello

Bass

Piano

Allegro vivace

Example 11. Ives, Tone Roads No. 3, p. 11,
mm. 27-31.

The tonal center in Tone Roads No. 3 is C. This is supported by the twelve-tone melody (X) in the Introduction which has C as its final note. The A section (Scherzo) uses

this same melody and ends with a tone cluster built on C. The B section (Trio) has an ostinato (Y) of which C is the lowest pitch. The C section has no ostinati and there is nothing to imply a strong tonal center, so, the tonal center is indicated in Table 6, page 48, as also being C.

Ives's formal plans in these five compositions are highly unified with repeated sections, ostinati, and thematic continuity. With the exception of Tone Roads No. 3, all the works end as they began. There is a definite arch shape to the forms in Calcium Light Night, Central Park in the Dark, and The Gong on the Hook and Ladder. The Unanswered Question ends with the string accompaniment material being heard alone, and the last trumpet phrase going unanswered. This order of trumpet and strings is the opposite of the order in the beginning, where the string accompaniment is first, then the trumpet. In this way, this form also shares the characteristics of the arch form. Tone Roads No. 3 is an unusual composition using all original melodic material and a sectional form that is not suggested by the programmatic idea. The work is one of Ives's most experimental, but it is more innovative in its use of harmony, rhythm, and especially texture, than in its formal construction. In terms of form, the most significant characteristic of Tone Roads No. 3 is the repeated sections, which are not found in the other four works.

The forms used in these five works have easily identifiable sections with little transitional material. Ives seemed to be unable to break away from a reliance upon simple, sectional forms. His compositional style is a blend of traditional and radical elements, and his development of innovative harmonic and rhythmic constructions far overshadows his relatively unsuccessful development of new formal concepts.

CHAPTER IV

MELODY AND RHYTHM

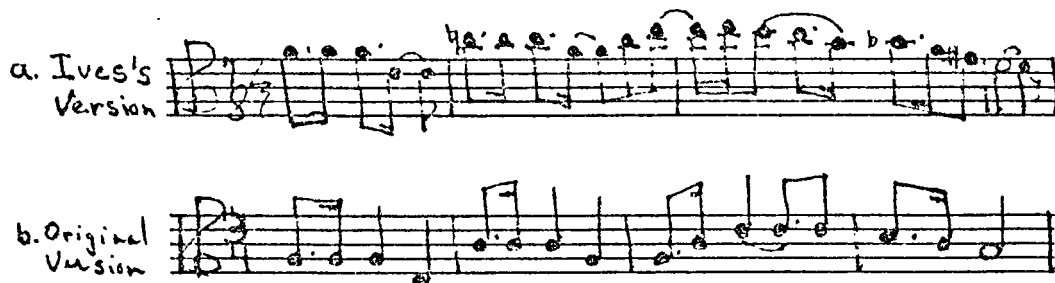
Charles Ives used borrowed tunes for thematic material in many of his works. These borrowed tunes provided Ives with a convenient form of connection between the programmatic and structural elements of his compositions. Borrowed tunes were frequently used as motives upon which Ives based his "original" themes. Ives's original material would resemble the borrowed tune in rhythm or in intervallic construction, or in other characteristics, such as phrase length or contour. An example of a motivic relationship between a borrowed tune and an original theme based on it is found in The Gong on the Hook and Ladder. Ives used rhythmic and intervallic elements of the borrowed tune "My Darling Clementine" to relate motivically to his main theme in the A and A' sections. The similarity in these two themes is in their use of dotted eighth-note and sixteenth-note rhythms and a descending interval that follows the dotted rhythm (see Example 12, page 55). It is interesting that the first statement of the borrowed tune "My Darling Clementine" comes in measure 13, eight measures after the first statement of the original theme. This thematic

order resembles a theme and variations, with the theme coming at the end, after the variations.



Example 12. Ives, The Gong on the Hook and Ladder,
a) violin I, pp. 13-14, mm. 32-35; b) clarinet, p. 5,
mm. 9-12.

Borrowed tunes seldom appear in Ives's works without rhythmic and intervallic alterations. This is the case with "My Darling Clementine" in Example 13. This tune is usually written in triple meter, but Ives altered it for his use as a borrowed tune in $\frac{7}{8}$ meter. Example 13 compares the original triple meter version of "My Darling Clementine" with Ives's borrowed tune, $\frac{7}{8}$ meter version.



Example 13. Ives, The Gong on the Hook and Ladder,
a) violin I, pp. 13-14, mm. 32-35; b) original version of
"My Darling Clementine."

The time signature in The Gong on the Hook and Ladder indicates $\frac{7}{8}$ meter; however, Ives does not let the bar lines prevent him from stating his themes in different meters. In measure 6, the original theme mentioned earlier appears in duple meter, disregarding the bar lines of the odd-metered $\frac{7}{8}$ time signature. This required some rhythmic modifications of the main theme, but no loss of identity. After three measures of metric contradiction, the theme appears in $\frac{7}{8}$ meter in measures 6-12. The odd-meter and duple-meter versions of the theme are illustrated in Example 14. This type of rhythmic modification of both borrowed and original tunes is common in the music of Charles Ives.



Example 14. Ives, The Gong on the Hook and Ladder, clarinet, pp. 4-5, a) mm. 6-8, b) mm. 9-12.

Ives's reasons for using odd meters like the $\frac{7}{8}$ meter in The Gong on the Hook and Ladder vary, but they frequently relate to a desired programmatic effect. The Gong on the Hook and Ladder is an "out-of-step" parade, and an even duple meter would have made this effect more difficult to

achieve. Ives liked to use unusual rhythms as a matter of principle, because he felt that music had become rhythmically boring with nothing but even meters. He asked, "Why should music be so even, so grooved in?--so smooth that our ears must become like unto feather beds, our muscles all drop out, and we have to have false-teeth ears to hear it with."¹ There are many examples of odd meters being used in Ives's music, but The Gong on the Hook and Ladder is the only one of the five works examined in this thesis to use an odd meter.

Ives also used borrowed tunes in works with no original thematic material. Several borrowed tunes would be used, with many statements of each in altered rhythms and sometimes in fragmented form. The accompaniment to these borrowed tunes was usually provided by "piano drumming" or an ostinato. In Calcium Light Night Ives used four borrowed tunes with several entrances of each tune. The borrowed tunes are developed through a process of subtle change in their rhythmic or intervallic construction, but without loss of their identities. Example 15, page 58, illustrates a change of meter in the borrowed tune "Beulah's Land" from the A section of Calcium Light Night.

The slight melodic change in this example has little effect on the identity of the borrowed tune. Ives usually found ways to alter borrowed tunes so that they did not

¹Ives, Memos, p. 101.

appear in the same form twice in a composition. Calcium Light Night is an exception to this, because its A section is repeated in a retrograde (see form Table 2, page 29) without a significant change in the thematic material.



Example 15. Ives, Calcium Light Night, a) trombone, pp. 1-2, mm. 4-6; b) bassoon, p. 2, mm. 11-13.

Rhythmic alterations of borrowed tunes in Ives's music are usually subtle, and consist mainly of syncopations that disguise the meter of the tune. The rhythms of borrowed tunes are seldom as important as the melodic lines, so when these quoted tunes form the basis of a composition, the rhythmic patterns of the melodic fragments are given a uniform style and are combined easily in their altered forms. This permitted the use of march tunes, waltzes, and hymns in any meter and with augmentations and diminutions at any tempo.

The syncopated rhythmic style of ragtime music appealed to Charles Ives. It was a new kind of music, and Ives considered ragtime to be the beginning of a very significant musical development in America. He thought that

it would eventually change the style of both serious and popular music. He was a patriotic and nationalistic person who thought of American culture as a great "melting pot" of ethnic styles. Ragtime was a part of that blend, and his only concern was that ragtime (or the similar jazz styles) was not allowed to overshadow other equally interesting elements in our cultural heritage. Ives said,

To examine ragtime rhythms and the syncopations of Schumann or of Brahms seems to the writer to show how much alike they are not. Ragtime, as we hear it, is, of course, more (but not much more) than a natural dogma of shifted accents, or a mixture of shifted and minus accents. It is something like wearing a derby hat on the back of the head, a shuffling lilt of a happy soul just let out of a Baptist Church in old Alabama. Ragtime has its possibilities. But it does not "represent the American nation" any more than some fine old senators represent it. Perhaps we know it now as an ore before it has been refined into a product. It may be one of nature's ways of giving art raw material. Time will throw its vices away and weld its virtues into the fabric of our music. It has its uses as the cruet on the boarding-house table has, but to make a meal of tomato ketchup and horseradish, to plant a whole farm with sunflowers, even to put a sunflower into every bouquet, would be calling nature something worse than a politician.²

In Central Park in the Dark, Ives used the borrowed tune "Hello! Ma Baby" in a highly syncopated ragtime style. Four statements of the tune occur in the B section, with only minor differences in texture each time. The tune has been altered rhythmically to fit the ragtime style and an accompaniment has been added. Example 16, page 60, is a comparison of the original version of "Hello! Ma Baby" with Ives's version of it in Central Park in the Dark.

²Ives, Essays before a Sonata, pp. 177-78.



Example 16. Ives, Central Park in the Dark,
 a) original melody "Hello! Ma Baby;" b) piano, p. 13, mm. 67-69.

Many other compositions by Charles Ives used ragtime rhythms. Some of these are Ragtime Dance (1900-11), the First Piano Sonata (1902-09), and In the Inn (1906-11). Central Park in the Dark is the only one of the five compositions examined in this thesis that has ragtime rhythms.

In the B section of Central Park in the Dark, Ives used polytempo, which is perhaps his most innovative rhythmic device. The strings, repeating a ten-measure ostinato, remain in a slow tempo (Molto Adagio) while the rest of the ensemble accelerates through several progressively faster tempi. The alignment of the string parts to the winds and piano is only approximated in the score. Each performance of Central Park in the Dark would result in a slightly different coincidence of these parts. The effect is that of two different compositions being heard at once. Example 17,

page 62, illustrates this effect with a full page from the score. The first statement of "Hello! Ma Baby" (see Example 16, page 60) is also illustrated in the piano part, measures 67-69.

Performances of Ives's music with polytempi sections were at first considered possible only with two conductors. The problems of using two conductors eventually convinced a few conductors to try the job alone. Henry Cowell said,

At sight of the second movement of the Fourth Symphony, every orchestra conductor exclaims at once: "Impossible to conduct the piece!" When early in 1927 the score was shown to Eugene Goossens, he said exactly the same thing, but thereafter he proceeded differently from other people, for he wound a towel about his head, drank gallons of coffee, sat up nights, learned the score, and found a way to conduct it successfully in public.³

An often told story is the tale about Nicolas Slonimsky's first performances of Ives's Washington's Birthday. Henry Cowell, who helped prepare the parts for the first performance, said that,

When Nicolas Slonimsky conducted Washington's Birthday he gave seven beats with the baton (in itself not a thing every conductor finds simple), three with his left hand, and led two beats by nodding his head. This created both great amusement and great admiration and is a tale still often told.⁴

The Unanswered Question also has examples of polytempi (Example 18, page 63). They occur between the strings and flutes. The strings remain in a chorale style with a slow tempo (Largo Molto sempre) while the six flute entrances are in progressively faster tempi. A single

³Cowell, Charles Ives, p. 165.

⁴Ibid., p. 166.

Handwritten: *CC*

Allegretto Con Spirito

Allegretto con Spirito

f

Example 17. Ives, Central Park in the Dark, p. 13, mm. 66-69.

conductor can cue the entrances of the flutes which then set their own tempo with each entrance faster than the previous one. The score is similar to Central Park in the Dark (Example 17, page 62), with only an approximation of the alignment between the two sections in different tempi.

The image shows a musical score for Example 18, Ives, The Unanswered Question, p. 7, mm. 49-53. The score is for a full orchestra. The top part of the score is for the woodwinds, specifically the flutes (I, II, III, and IV). The bottom part is for the strings (Violin I, Violin II, Viola, and Violoncello/Double Bass). The flute parts are marked with dynamics like *sf* and *pp*. The tempo marking is *Allegro-accel. to Presto*. The score shows the entrance of the flutes in measures 52-53, which is a key thematic element. The flute parts feature a triplet of eighth notes in measures 52-53, which is a key thematic element.

Example 18. Ives, The Unanswered Question, p. 7, mm. 49-53.

The thematic material in The Unanswered Question is all original, with the trumpet phrase being a motive on which the flute parts are built (Example 19, page 64). The trumpet tune is disjunct and contains two different triplet gruppetti. Its contour and rhythm are imitated by the flutes, with the entrance in measures 52-53 being exactly the same notes, but in diminution of the rhythm (see

Example 18, page 63). Other entrances of the flutes resemble the rhythm and contour of the trumpet phrase, but not the exact pitches. Example 19 illustrates this more general similarity.



Example 19. Ives, The Unanswered Question, trumpet, p. 6, mm. 38-39, flute I, p. 6, mm. 41-43.

The quarter-note and half-note triplet gruppetti found in the trumpet phrase of Example 19 are typical rhythmic constructions for Ives. He also used some very unusual gruppetti to create notes of varying time durations. Gruppetti of two to eleven divisions over a various number of beats or measures are used in nearly every composition. The gruppetti usually, but not always, begin on the beat, and some considerable rhythmic complexity may result from these unusual groupings. According to Henry Cowell, Ives developed a system for using these gruppetti that consists of three different styles. Henry Cowell said that,

In the employment of these many related different note lengths, Ives uses . . . three general ways of development . . . : he sometimes changes successively

from one gruppetto to another, forming a horizontal or what I have called a "melodic" relation between differing lengths; he sometimes uses several gruppetti together simultaneously, so that the note-lengths have a harmonic relationship (that is to say the different lengths are so related perpendicularly that the whole sounds unified); and sometimes he does both of these things at once, forming a polyrhythmic association not unlike that of counterpoint in tonal relationships.⁵

Ives used chromatic constructions frequently for melodies as well as for ostinati. The chromatic type of original melody used by Ives is occasionally fully chromatic and resembles a twelve-tone row. Ives does not, however, use the ordering of the twelve tones strictly, and at no time did he create a twelve-tone composition in the style of Arnold Schoenberg.

A melodic relationship of gruppetti with changing note values is used in the chromatic ostinato of the A and A' sections of The Gong on the Hook and Ladder. The rhythm of this ostinato is illustrated in Example 2, page 25. The notes of the ostinato are a chromatic scale with several octave displacements. This ostinato becomes an accompaniment to the $\frac{7}{8}$ march theme mentioned earlier (see Example 12, page 55).

The melody played by the chimes at the beginning of Tone Roads No. 3 (measures A-F) is an interesting original tune by Ives (Example 20, page 66). In this melody Ives used all twelve tones and each one only once. Rhythmically, the tune is freely conceived, with half-note triplets in

⁵Ibid., p. 168.

five of its six measures. These gruppetti disguise the beat and an almost unmetered effect results. The time signature indicates $\frac{4}{4}$, but with several ties across the bar line and the five gruppetti, the listener would almost certainly be in doubt. A repetition of the melody follows in measures G-L, but Ives altered it considerably with many octave displacements and a different ending after the eleventh tone. Later the tune is fragmented into a theme using the same notes plus several added ones and an extension in measures 9-11. A comparison of the original fully chromatic melody with the fragmented and extended version is given in Example 20.

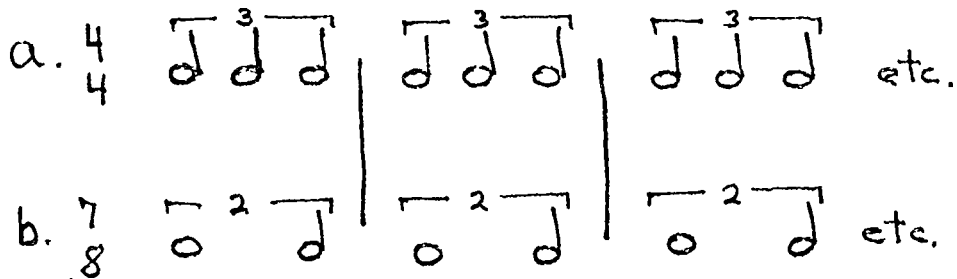


Example 20. Ives, Tone Roads No. 3, a) chimes, pp. 2-3, mm. A-G; b) chimes, pp. 4-7, mm. 1-11.

Ives frequently combined melodies and ostinati to form polyrhythmic textures where several lines have conflicting meters. The combination of the march theme with the chromatic ostinato in the A section of The Gong on the

Hook and Ladder forms a polyrhythm, but this is only half of the polyrhythmic texture. The other two lines are ostinati with completely different meter.

In The Gong on the Hook and Ladder, a chordal ostinato in the piano has a bracket with a two over each measure and there are two chords per measure in a relationship of two to one time duration. This is equivalent to a half-note triplet with the first two half notes tied together (Example 21). This repeated chordal pattern bears little resemblance to the rhythms of the odd-meter march or the changing gruppetti of the chromatic ostinato. Example 21 illustrates the rhythm of the chordal ostinato and how this rhythm in $\frac{7}{8}$ meter relates to the more common notation of the same pattern in $\frac{4}{4}$ meter.



Example 21. Ives, The Gong on the Hook and Ladder,
a) rhythm pattern equivalent to b); b) piano, rhythm
pattern, pp. 3-8, mm. 3-20.

The fourth layer in the polyrhythmic texture is an ostinato gruppetto in the snare drum part. This rhythm pattern is repeated throughout The Gong on the Hook and

Ladder. It consists of an even two-note division of the measure of $\frac{7}{8}$ meter (Example 22).



Example 22. Ives, The Gong on the Hook and Ladder, snare drum, rhythm pattern, pp. 3-14, mm. 1-34.

The combination of all three of the ostinati and the march tune produces the harmonic relationship of gruppetti suggested by Henry Cowell. Polyrhythm occurs in a multilayered texture where three of the four rhythmic layers do not suggest the $\frac{7}{8}$ meter of the time signature. The march tune is the only part that really implies an odd meter. The combination of these four lines is illustrated in Example 23, page 69.

The difficulties in performing the polyrhythms of Charles Ives have been discussed by many musicians. Ives wrote,

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. For instance, a piccolo playing a 13 over a $\frac{1}{4}$ will be able, after a while, to get it fairly accurately, while a pianist playing 13 with one hand and 7 with the other will find it very difficult at first to get the effect, as the tonal sounds are so much the same--and I don't know, even if it's done accurately, how effective it is to the listener, unless he's had some practice in listening to and playing them himself. But if the different meters are each played by groups of different sounding units, the effect is valuable, and I believe will be gradually found an important element in

16 18

Flute

Bb Clar.

Bsn.

I

Bb Tpts.

II

Trbn.

S. Dr.

Triangle

Timp.
(Gong)
(A.L.L.)

Piano

Violin I

Violin II

Viola

Cello

Bass

f *pp* *f* *pp* *f* *pp* *f* *pp*

Example 23. Ives, The Gong on the Hook and Ladder,
p. 7, mm. 16-19.

deepening and enriching all of the depths of music, including the emotional and spiritual.

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.⁶

According to Henry Cowell, the important aspect of performing the gruppetti and polyrhythms is the expression of rhythmic freedom and spontaneous invention. He writes,

Ives's whole approach to his complex rhythms should be understood as an attempt to persuade players away from the strait-jacket of regular beats, with which complete exactness is impossible anyhow, and to induce them to play with rubato in the involved places, with a freedom that creates the impression of a sidewalk crowded with individuals who move forward with a variety of rhythmic tensions and muscular stresses that make constant slight changes of pace. In fact, Ives has often expressed regret at having to write out a piece at all, since its rhythms will then be hopelessly crystallized.⁷

According to Henry Cowell, Ives would never allow a score to be changed to facilitate performance. Ives believed that some musical elements could be better understood by reading the score than by hearing it performed. Changing the notes or rhythms to make them easier to play would destroy his musical concept and degrade his composition.

Henry Cowell explained that,

Ives has no patience at all with changes to make playing easier. He has accepted the challenge of his involved notation for himself by showing that he can

⁶Ives, Memos, p. 125.

⁷Cowell, Charles Ives, pp. 172-73.

play the rhythms as he has written them, with surprising and meticulous accuracy. In the orchestra works, of course, where there are sometimes twenty or more simultaneous rhythms going on, absolute accuracy would be not only impossible to achieve in performance, but in Ives's view unnecessary, since the complexity arises from a concept of individual freedom. He is well satisfied, on the whole, if the sense and feeling of the idea can be seen and heard in the mind by a fellow score-reader. Physical realization in performance is far less important to him.⁸

Ives frequently changed the time signatures in his works to a different meter without changing the rhythmic patterns or relationships between lines in a polyrhythmic texture. A change of time signatures in measure 8 of Tone Roads No. 3 is interesting because Ives retained the relationships between the gruppetti of five and four against three (Example 24, page 72). In measure 7 (triple meter) the chimes have quarter notes, but when the meter changes in measure 8 (duple meter) the chime part changes to half-note triplets. This change preserves the triple division of the measure in the chime part. The clarinet part, which had been bracketed four against the measure of three was then simplified by removal of the bracket, leaving sixteen sixteenth notes in the measure of $\frac{4}{4}$. The trombone part remains bracketed by a five, but has to slow down to fit the five against four instead of against three; however, the tempo (beat) does not change in this transition. Thus, Ives has changed meter and lengthened the time duration of a texture of polyrhythm without altering the relationship of one

⁸Ibid., p. 173.

rhythm to another or indicating a new tempo. This meter change is basically a "metric modulation" of the type found in the music of Elliott Carter (born 1908) and other composers of the mid-twentieth-century. Ives frequently made such changes in meter while preserving the rhythmic relationships between several lines in his mature works.

Example 24. Ives, Tone Roads No. 3, flute, clarinet, trumpet, trombone, chimes, p. 6, mm. 7-9.

In Tone Roads No. 3, the chime part is the "tone road" on which the melodic characteristics of the other parts are based. Henry Cowell said, "Tone Roads No. 3 . . . opens with a long solo in slow half-note and whole-note triplets, an atonal melody played by the chimes, which provide the tone quality that is to lie back of the whole

piece."⁹ The thematic material in Tone Roads No. 3 is fully chromatic and mostly disjunct. Some lines are organized into repeated motives or phrases, while others are through-composed. In Example 24, page 72, the clarinet part is organized into seven groups of four sixteenth notes and is repeated several times. The parts for flute, trumpet, and trombone are important as a group because they form a texture of dissonant counterpoint, but they are independent melodically, lacking any form of repetition, motivic structure, or imitation of one another.

The treatment of melody in Ives's music is based on two concepts. One is the concept of rhythmic alteration and the other is the concept of melodic combination. Ives made rhythmic alterations to the borrowed tunes in his music. These modifications were necessary to adapt them to the meter and/or syncopated style of a composition. Ives always developed the borrowed theme in context with other themes. Original melodies are treated either as note sequences, to which any rhythmic modification is acceptable, or as rhythmic motives, to which subtle pitch alterations are permissible. Seldom do both pitch and rhythm go unaltered in the development of a theme.

⁹Ibid., p. 171.

CHAPTER V

HARMONY AND TEXTURE

Charles Ives was musically influenced by his father, George Ives, in many ways, but particularly so in matters concerning harmony and texture. George Ives was well trained in traditional eighteenth-century and nineteenth-century harmony, and he encouraged Charles Ives to learn the basics of this style. George Ives also believed that new concepts of relative consonance and dissonance were needed in music and that experimentation with tone clusters, quarter tones, and dissonant counterpoint was necessary for the development of a new compositional style. He encouraged his son to use his imagination in composition, and to avoid making his music a copy of another composer's style.

The musical experiments which George Ives found particularly interesting were the ones in which he combined two or more melodies, harmonies, or complete compositions. These more or less random combinations produced a texture of dissonant counterpoint, polychords, and polyrhythms that Ives thought was more like the sounds of nature. He convinced his son that music should not be bound by a set of

rules and that any sound or combination of sounds that occurs in nature could be used in music.

When Charles Ives began his studies with Horatio Parker at Yale in 1894, the importance of his father's liberal teachings became much clearer to him. Horatio Parker was a conservative follower of the European musical tradition. He wanted Charles Ives to follow the rules of voice leading and to restrict his use of dissonance. Ives remembered an example of a clash between his father's liberalism and Parker's conservatism.

In the beginning of Freshman year, and getting assigned to classes, Parker asked me to bring him whatever manuscripts I had written (pieces, etc.). Among them, a song, "At Parting"--in it, some unresolved dissonances, one ending on a [high] E-flat [in the] key of G major, and stops there unresolved. Parker said, "There's no excuse for that--an E-flat way up there and stopping, and the nearest D natural way down two octaves."--etc. I told Father what Parker said, and Father said, "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."¹

Parker's comments were very critical and discouraging for Charles Ives. Ives was glad when Parker asked him to stop bringing in outside work and to stick with the class assignments only. Ives wrote,

Parker, at the beginning of Freshman year, asked me not to bring any more things like these into the classroom, and I kept pretty steadily to the regular classroom work, occasionally trying things on the side, sometimes with the Hyperion Theater Orchestra, and in organ works, and sometimes in church services, as for instance the Thanksgiving Prelude and Postlude.²

¹Ives, Memos, p. 116.

²Ibid., pp. 48-49.

Later, Parker seemed to realize that Ives had exceptional talent, so he again asked Ives to bring in scores for evaluation. Parker still made derogatory comments, but they seemed to be more an expression of curiosity than of condemnation. Ives remembered,

And I did sometimes do things that got me in wrong. For instance, a couple of fugues with the theme in four different keys, C-G-D-A--and in another, C-F-B-flat-E-flat. It resulted, when all got going, in the most dissonant sounding counterpoint. Parker took it as a joke (he was seldom mean), and I didn't bother him but occasionally after the first few months. He would just look at a measure or so, and hand it back with a smile, or joke about "hogging all the keys at one meal" and then talk about something else. I had and have great respect and admiration for Parker and most of his music. (It was seldom trivial--his choral works have a dignity and depth that many of his contemporaries, especially in the field of religious and choral composition, did not have. Parker had ideals that carried him higher than the popular) but he was governed too much by the German rule, and in some ways was somewhat hard-boiled.³

Many of Charles Ives's early compositions (before 1898) are based on traditional harmony, but with unresolved non-harmonic tones and occasional polychords. These works are songs, choral pieces, marches, or organ variations. The First Symphony (1895-98), three Harvest Home Chorales (1898) for mixed voices and piano, and the Variations on America (1891) are good examples of early works based on traditional harmony. After 1898, Ives became more adventurous in his use of harmony and added quarter tones, quartal chords, extended sections of polytonality, and cluster chords to his works. The five compositions examined in this thesis are

³Ibid., p. 49.

from the middle period of Ives's creative years, and they have a variety of harmonic styles.

Quarter tones interested George Ives, and he frequently tuned water glasses in quarter-tone intervals for experimentation. He also built an instrument with twenty-four strings that was tuned in quarter tones and was capable of playing quarter-tone chords as an accompaniment to a quarter-tone melody. He decided that using quarter tones alone, whether for harmony or melody, was less successful than using them together for both melody and harmonic support. Charles Ives learned to perceive quarter-tone intervals while still a child, and he later wrote many compositions that employ them. Tone Roads No. 3 is the only one of the five works examined in this thesis to include quarter tones. Some of Ives's other compositions that employ quarter tones include the Chorale for Strings (1903-14), In re con moto et al (1913), Fourth Symphony (1910-16), Largo and Allegro (1923-24), and the Universe Symphony (1911-16).⁴

Remembering his father's quarter-tone experiments and his own enthusiastic acceptance of the new sounds they produced, Ives wrote,

This, at first, seemed very disturbing,--but when the ears have heard more and more (and year after year) of uneven ratios, one begins to feel that the use, recognition, and meaning (as musical expression) of intervals have just begun to be heard and understood. The even ratios have been pronounced the true basis of music, because man limits his ear, and not because nature does.

⁴Ibid., pp. 108-11.

The even ratios have one thing that got them and has kept them in the limelight of humanity--and one thing that has kept the progress to wider and more uneven ratios very slow--(it is said [that] for the power of man's ear to stand up against the comparatively uneven 3rds, [when used] to the very even octaves and 5ths, was a matter of centuries)--in other words, consonance has had a monopolistic tyranny, for this one principal reason:--it is easy for the ear and mind to use and know them--and the more uneven the ratio, the harder it is. The old fight of evolution--the one-syllable, soft-eared boys are still on too many boards, chairs, newspapers, and concert stages!⁵

And later he added,

Besides, I think that new scales will gradually be evolved in a natural way probably, perhaps in centuries, and that their intervals will not be (or all be) of the whole, half, or quarter tones known or so-called now.⁶

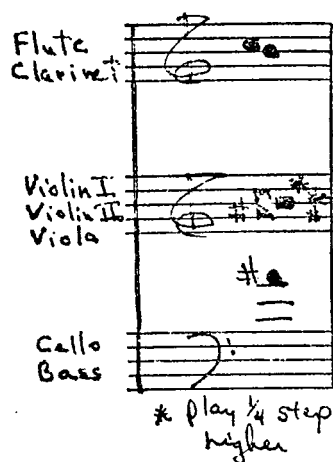
Ives used quarter tones in Tone Roads No. 3 to achieve a greater density in a texture of already closely spaced cluster chords. Three quarter tones are used in the very brief final chord (Example 25, page 79), and they are surrounded by closely spaced adjacent tones. The quarter tones are indicated with asterisks and are in the string parts where they can be played easily.

Tone Roads No. 3 has sections with contrasting textures, including monophonic (the introduction), non-imitative counterpoint (the A section), and chordal textures (measures 10-12). The quarter tones of the final chord are used as the point of greatest density in a cluster-chord progression in contrary motion between the winds and strings. This chord progression is arranged so that the cluster chords are

⁵Ibid., p. 110.

⁶Ibid., p. 111.

more closely spaced with each successive chord (contrary motion), and shorter in time duration by use of rhythms and gruppetti of decreasing time values. The final chord is a cluster with an interval of only a diminished third (A-sharp to C-natural) between the bass and soprano, and including all of the quarter tones in between (see Example 25).



Example 25. Ives, Tone Roads No. 3, flute, clarinet, strings, p. 7, m. 12.

The change in the spacing of the chordal texture in Tone Roads No. 3 and the rhythmic change that accompanies the increasing density is illustrated in Example 26, page 80.

In Central Park in the Dark, Ives used a chordal texture for an accompaniment phrase that is repeated several times by the strings (Example 27, page 81). This accompaniment is written for divided string parts which move in parallel motion above a series of bass pedal tones. The tonal center of the work is A-flat. A series of pedal tones

Example 26. Ives, Tone Roads No. 3, p. 7,
mm. 10-12.

The image displays two systems of handwritten musical notation for a string ensemble, consisting of Violin I, Violin II, Viola, Cello, and Bass. The notation is in treble and bass clefs with a key signature of one sharp (F#). The first system covers measures 1 through 10, and the second system continues the notation. The music is characterized by complex, overlapping melodic lines with frequent triplets and sixteenth-note patterns. The first system includes markings such as 'div.' (divisi) and '3' (triplet) above various notes. The second system features similar complex textures with more frequent use of triplets and sixteenth-note runs. The handwriting is fluid and expressive, typical of a composer's working draft.

Example 27. Ives, Central Park in the Dark, strings, p. 1, mm. 1-10.

in the bass part of the string accompaniment move from tonic to dominant. The pedal-tone progression begins on A-flat, moves up a step to B-flat, down a diminished fourth to F-sharp, and then down an augmented second to E-flat (the dominant). Quartal harmony is used throughout the string accompaniment, but Ives used different combinations of notes to form the sonorities above each pedal tone.

In the first two measures the quartal chords are formed of notes of the whole-tone scale (alternating an A-flat and F whole-tone scale above the A-flat pedal). Measures 3, 4, and 5 use chords built of perfect fourths, beginning on B-flat, moving parallel above the B-flat, and returning to perfect fourths above B-flat on the last chord of measure 5. In measure 6 the pedal moves to an F-sharp which extends through measure 8. The sonorities above the F-sharp each contain a uniform combination of perfect fourths, perfect fifths, and tritones. Measures 9 and 10 have the pedal of E-flat (the dominant) and use chords built of perfect fifths. Two notes in these measures are used for linear voice-leading and break away from the pattern of perfect fifths. These two notes are the E of the cello (last chord of measure nine) which resolves up by half-step to F, and the D-flat of the first violin (last chord of measure ten) which resolves down by half-step to the C in measure eleven (the beginning of the repetition of the ten-measure phrase). By voice-leading and by use of the E-flat to

A-flat dominant to tonic relationship, Ives thus harmonically prepares for the repetition of the accompaniment phrase in a traditional manner.

Ives used simple tertian harmony in a similar chordal texture for the string parts of The Unanswered Question (Example 28, page 84). He used tertian harmony in many works, but seldom without added non-harmonic tones that go unresolved. In The Unanswered Question, the tonal center is G and the harmonic progression may be analyzed functionally with cadences on the subdominant and tonic. This analysis is illustrated in Example 28. The use of non-harmonic tones is traditional, with passing tones, suspensions, and appoggiaturas used to connect chord members. Only in the final statement of the string phrase (not shown in Example 28) does Ives use a dominant to tonic cadence.

The consonant harmony of the strings in The Unanswered Question is only one-third of a tri-level texture. The other layers of texture consist of dissonant counterpoint between the four flute parts (Example 29, page 85), and a trumpet. The harmony of the flutes is dissonant to the strings, and the individual flute parts form dissonant counterpoint to one another. The intervals between the four parts form clusters with many intervals of major and minor seconds and sevenths above flute IV (the lowest sounding voice). These cluster chords are both

Violin I

Violin II

Viola

Cello Bass

sus.
x

App.
x

P.T.
x

G I iii vi₄ I₆ IV IV₆ IV vi₆ vi_{6/3}

Violin I

Violin II

Viola

Cello Bass

P.T.
x

P.T.
x

P.T.
x

P.T.
x

P.T.
x

vi_{6/3} ii I₆ I

Example 28. Ives, The Unanswered Question, strings,
p. 4, mm. 1-14.

closely and widely spaced at different places. Example 29 shows an example of each spacing, with a cluster chord spanning nearly two octaves (measure 49, first beat) followed by a cluster chord spanning only a minor third (measure 49, last beat).

The image shows a musical score for four flutes, labeled Flute I, Flute II, Flute III, and Flute IV. The score is in 4/4 time and spans measures 47-50. Flute I and II play a melodic line with triplets and a cluster chord in measure 49. Flute III and IV play a lower melodic line with a cluster chord in measure 49. Dynamics include f, ff, sf, and pp.

Example 29. Ives, The Unanswered Question, flutes p. 7, mm. 47-50.

A bi-level musical structure results from the combination of the contrapuntal flute texture and the chordal string texture in The Unanswered Question. This structure has contrasts between the two textural layers including tempo, dynamics, tone color, harmony, and thematic material. Ives seldom used a simple texture, preferring a combination of contrasting textural layers. Texture, harmony, and tone

color are the most common elements contrasted in Ives's polytextural style.

Ives used large cluster chords in his rhythmic invention which he called "piano drumming." These cluster chords were intended to replace the bass drum by imitating its sound. The chords are therefore non-functional in relationship to the other harmonies of a piece. Seven or more different tones are usually included in each "piano drumming" sonority. An example of the seven-note cluster chords from Calcium Light Night is illustrated in Example 1, page 18.

Out of the idea of "piano drumming" came the use of the piano in the A section of The Gong on the Hook and Ladder. In this section, Ives used the piano to imitate the sound of a gong. For this, he used a closely spaced cluster chord of eleven tones that is sustained and allowed to die away slowly (Example 30). The missing twelfth tone

The image shows a musical score for four instruments: Piano, Bassoon, Cello, and Bass. The Piano part is written on a grand staff (treble and bass clefs) and features large, dense cluster chords that are sustained and then slowly decay. The Bassoon, Cello, and Bass parts are written on a single staff with a 2/8 time signature. They play a rhythmic pattern of eighth and sixteenth notes, with some rests and dynamic markings. The score is handwritten and includes various musical notations such as accidentals, slurs, and dynamic markings like 'p' and 'f'.

Example 30. Ives, The Gong on the Hook and Ladder, piano, bass, cello, bassoon, p. 3, mm. 1-4.

(A-natural) of this cluster chord appears in the third measure and is doubled, making this a fully chromatic cluster harmony. The cluster harmony is an accompaniment to a chromatic melody that is written in octave displacements and with changing gruppetti. The texture in this section of The Gong on the Hook and Ladder is homophonic, with a fully chromatic harmony and melody.

Charles Ives was a centric composer who maintained a tonal center with ostinati or strong root movement, while using polychords and polytonal thematic combinations. In the B section of The Gong on the Hook and Ladder there are polychords in the piano part with seventh chords that overlap between the right and left hands. This is illustrated in Example 31. These polychords are only a part of a much larger texture of polychords, ostinati, and themes that imply a tonal center of C.

Handwritten musical score for "The Rose Tree" on two staves. The top staff is labeled "R.H." and the bottom staff is labeled "L.H.". The music is in 7/8 time and features a key signature of one sharp (F#). The melody is written on the top staff, and the accompaniment is on the bottom staff. The piece ends with a double bar line and repeat dots. Below the staves, there is a sequence of chords: Em7, A7, Gb, A+7, A7, D+7, Eb+7, and D+7.

Example 31. Ives, The Gong on the Hook and Ladder,
piano, p. 11, mm. 27-28.

The tonal center in the B section of The Gong on the Hook and Ladder is supported by a bass line ostinato (bass, cello, bassoon) repeating the pattern C-B-flat-A-flat, and by a borrowed theme in C major doubled by the two trumpets (Example 32, page 89). Other thematic material in the flute and clarinet parts is chromatic and of uncertain tonality. An ostinato in the trombone part implies a tonal center of G, and there are cluster chords in the parts for violin and viola. This section is harmonically and texturally the most complex among the five works examined in this thesis. The harmony of the section illustrates Ives's ability to combine various chordal types with several themes and ostinati. The texture is of the greatest rhythmic complexity (polyrhythms in $\frac{7}{8}$ meter) and tonal contrasts, with the strings, piano, brass, woodwinds, and percussion all playing different material. An harmonic analysis of all the sounding pitches at any particular moment in this section is impractical since a combination of cluster chords and polychords nearly always results in all twelve tones being used.

Ives frequently combined contrasting rhythmic patterns to produce polyrhythms. He also combined contrasting harmonic systems to produce polychords. An example of both rhythmic and harmonic conflict is illustrated in Example 33, page 90, from Central Park in the Dark. The borrowed tune "Hello! Ma Baby" is stated in ragtime syncopation (duple meter) and tertian harmony with "added-note" non-harmonic

Example 32. Ives, The Gong on the Hook and Ladder, p. 11, mm. 27-28.

The score is for a full orchestra and piano. The key signature is one sharp (F#), and the time signature is 4/4. The score is divided into two systems. The first system includes Flute, Bb Clar., Ban., Bb Tpts. I and II, Trbn., S. Dr., Triangle, and Timp. The second system includes Piano, Violin I, Violin II, Viola, Cello, and Bass. The score features complex rhythmic patterns, including triplets and sixteenth notes, and dynamic markings such as *f* and *sf*. The piano part is marked with R.H. and L.H. and includes a section with a key signature change to one flat (Bb).

Example 32. Ives, The Gong on the Hook and Ladder, p. 11, mm. 27-28.

tones. The tune is accompanied by cluster chords ("piano drumming") in triplet gruppetti. The rhythmic conflict allows both harmonic systems to be heard separately, as the chords between the two pianos never coincide exactly. This is, again, only part of a polychordal texture, which includes the quartal harmony of the string accompaniment discussed earlier (see Example 27, page 81).

The image shows a handwritten musical score for two pianos, labeled 'Piano I' and 'Piano II'. The score is written on four staves. Piano I is on the top two staves, and Piano II is on the bottom two staves. The music features complex rhythmic patterns, including triplets and gruppetti, and cluster chords. The notation is handwritten and includes various musical symbols such as notes, rests, and dynamic markings.

Example 33. Ives, Central Park in the Dark, piano I, piano II, p. 24, mm. 103-4.

The texture in Ives's music is usually a combination of chordal and contrapuntal material in a varying thickness of scoring. He has sections of simple texture, monophonic or homophonic, but usually climaxes with a thick texture combining several elements.

The harmony in various layers of Ives's texture, where chordal elements represent independent lines, can be tertian, quartal, quarter-tone, or cluster. The single layer is usually combined with other layers to form a multi-layered, polychordal harmony that can practically defy description as a single entity. In general, the overall chord structure at a particular moment in Ives's music can best be described as being any combination of all existing sonorities that are combined coincidentally at that moment. Ives was able to achieve greater than usual harmonic variety in his music, because he combined chords of all types in a multi-layered texture of contrasting sonorities. These combinations can result in the most dissonant of sonorities, but also in uniquely varying degrees of relative consonance and dissonance. Ives expanded the range of consonance and dissonance to include cluster chords, quarter tones, and polychords without abandoning the traditional elements of consonance.

CHAPTER VI

TONE COLOR AND INSTRUMENTATION

Charles Ives learned how to play and compose for many different orchestral instruments while a child by studying with his father and members of the Danbury, Connecticut, band. The earliest compositions of Charles Ives are for band. He also learned from his father how to play and compose for the piano. Charles Ives, using the keyboard, developed most of his harmonic constructions, particularly his unusual "piano drumming" technique. George Ives was also a choir conductor and amateur vocalist, and Charles Ives learned to write for voice from his experiences in his father's choirs and as an accompanist for them. A weakness in Ives's training was his lack of experience with string orchestras. This training came later at Yale (1894-98) when Ives composed regularly for the Hyperion Theatre Orchestra and when he composed his First Symphony (1895-98).

Ives developed an idealistic theory about music that affected the orchestration of some of his mature compositions. This theory was that sometimes music was better seen than heard, because proper orchestral balances were hard to

achieve, but easy to indicate on paper. He would, for example, score two instruments together, indicating equal dynamics for each, but ignoring the fact that one would easily overpower the other. The balance he desired was ideal in his mind, but impractical in reality. Had there been electronic amplification available for the overpowered instrument, Ives probably would have accepted it as a means of getting the correct balance, but because this was impossible, many performers condemned such works as impractical. Henry Cowell commented that,

In these "ideal" passages (but only there), one finds some parts in the fabric of the orchestra that do not balance and cannot be heard properly. The celesta is not normally audible above the trumpet, but Ives wishes the celesta tone-quality in the music, so he writes for an ideal celesta that would balance a loud trumpet, even though he knows perfectly well that it does not exist. Very often he needs flute-like tones balancing a brass section; when he wants this he writes for it. Bassoons, also, would often need to be louder than they are to balance properly, but he uses them anyway, with full knowledge of how they really sound. This kind of scoring is not found throughout his music, which would make it all impractical, but is reserved for certain sorts of especially "idealistic" movements in which there is a transcendental summary and unification. The last movement of the Fourth Symphony and the Universe Symphony as it now stands, show such scoring. Whenever there is some good, practical way to gain his end, Ives of course does not resort to such unplayable writing.¹

Among the five compositions examined in this thesis, only Tone Roads No. 3 has any "idealistic" scoring. This idealism is related to the programmatic conception of the piece which states that each line be independent of the

¹Cowell, Charles Ives, pp. 180-81.

others, but moving towards the same goal (cadence). This requires a balance between the tone color and dynamics of each part so that no one line will dominate the others. In Example 34, page 95, only the piano part (indicated fff) has a higher dynamic marking than the other eight parts. When Ives indicated ff in each part, he wanted an equal tonal balance to result; however, it is doubtful that the flute or clarinet would be able to balance properly with the trumpet or trombone. Also, the violin I and violin II would be unable to balance with the two brass instruments or the cello and bass, which double the same line. This composition calls for only one player per part and frequently reflects Ives's "idealism" in scoring.

Charles Ives frequently indicated an alternate instrumentation to be used if certain instruments were unavailable. This is the more practical side of Ives's compositional manner, and it clearly suggests that these particular compositions were intended for performance. The Unanswered Question has several alternate instrumentations. For example, the score calls for four flutes, but allows an oboe to be substituted for flute III, and a clarinet to be substituted for flute IV. The part for trumpet can be substituted by an English horn, an oboe, or a clarinet, and the string parts allow for an optional bass to double the cello.

The instrumentation of the five compositions examined in this thesis varies between works for a nearly

12

Allegro molto

Fl. 32 33 34 35

Clar.

Tpt.

Trb.

Ch.

Allegro molto

Vln. I

Vln. II

Vla.

Vlc.

Bs.

Pa.

fff (no pedal)

marcato sempre

D. S.

(*There are many roads, you know, besides the W

Example 34. Ives, Tone Roads No. 3, p. 12,
mm. 32-35.

full orchestra and those for small ensembles. Central Park in the Dark and The Gong on the Hook and Ladder employ the largest ensembles. These include a full string section, piano(s), percussion, and a variety of woodwinds and brass. Ives usually employed equal numbers of woodwind and brass instruments. Where unequal numbers of each are included in the instrumentation, the actual scoring frequently omits some of one or the other so that equal numbers of each are used. Many of Ives's larger scores also employ equal numbers of brass and woodwinds, indicating that Ives had a preference for this "balanced" instrumentation.

In The Gong on the Hook and Ladder, Ives emphasized rhythmic constructions by using an instrumentation including a large group of percussion instruments. These include a snare drum, timpani, gong, triangle, and the piano ("piano drumming"). There is not a part for bass drum because the "piano drumming" and the doubled part for timpani and gong take its place. These parts are illustrated in Example 23, page 69. The "piano drumming" style illustrated in Example 23 is used in the A and A' sections only. In the B section of The Gong on the Hook and Ladder, the tone color of the piano is shifted up to the higher octaves of the keyboard. This new material consists of fanfare-like statements of the borrowed tune "My Darling Clementine" in polychordal harmony. This is illustrated in Example 35, page 97. Ives used these two contrasting piano sections to achieve a brighter tone color in the B section than in the A section.

10

5 **Agitato e crescendo**

Flute

Bb Clar.

Bsn.

I
Bb Tpts.

II

Trbn.

S.Dr.

Triangle

Timp.
(Gong ad lib.)

Piano

Agitato e crescendo

Violin I

Violin II

Viola

Cello

Bass

Example 35. Ives, The Gong on the Hook and Ladder,
p. 10, mm. 25-26.

There are other tone-color differences between the A and B sections. The instrumentation of the A section omits the upper strings and the second trumpet. The B section employs the full ensemble, and the addition of the upper strings (two violins and viola) and the second trumpet produces a brighter tone color than in the A section. These differences in the orchestration of the two sections can be seen by comparing the instrumentation of Example 23, page 69 (A section) with that of Example 35, page 97 (B section).

The string writing in the B section of The Gong on the Hook and Ladder employs the only double stops found in these five chamber orchestra compositions. This produces a fuller sound than a divisi scoring because each player sounds both notes instead of only one of the two. Ives has carefully chosen this scoring to achieve the greatest possible contrasts in tone color between the A and B sections. Example 35, page 97, illustrates this difference by showing the last two measures (measures 20-21) of the A section and the sudden change in the first measure (measure 22) of the B section.

An interesting feature of the tone color of Calcium Light Night is the absence of the string section. The orchestration employs two pianos and most of their parts are written in the lower range of the keyboard. Piano I seems to take the place of lower strings and piano II is

used mostly for "piano drumming." The percussion instruments include a bass drum and a snare drum, so the pianos are given more accompaniment material and less "piano drumming." The wind instruments include two brass (trumpet and trombone) and four woodwinds (piccolo, oboe, clarinet, and bassoon). This work is the only one of the five in which the bassoon is used independently and not only to double the cello or trombone.

Doublings in Calcium Light Night occur only in the B section, where a thick texture requires that the instruments with softer tone color be doubled in order to be heard. Ives has been accused of "idealistic" scoring, but in this B section he was "practical" in achieving a balance between four different melodic lines for several measures. To achieve this balance with the available instrumentation, Ives doubled the oboe, clarinet, and bassoon in unison on one line. Together, they satisfactorily balance the trumpet, trombone, and piccolo, each of which has a separate melody (see Example 36, page 100).

In The Unanswered Question, Ives used a small ensemble and a limited variety of tone color. Three different tone colors were chosen to represent the contrasts in the three elements of the program. A trumpet is the only brass instrument and four flutes are the only woodwinds. A full string section is used with mutes, but the bass is optional. This is the only work of the five to use

6

29 31 33

8VA

Pic

8VA

Cl

Bsn

Trp

Tuba

DD

BD

1

2

8VA

G. Schirmer, Inc., New York
Opus No. 3-18 Series

Printed in the U. S. A.

Example 36. Ives, Calcium Light Night, p. 6,
mm. 24-28.

muted strings or to omit both the percussion instruments and the piano(s). With the substitutions suggested in the score, the instrumentation could also omit the brass family if an English horn, oboe, or clarinet were substituted for the trumpet.

The tone color of the three different elements of the form (see Table 5, page 45) never changes. These elements are contrasted, therefore, with the simplest and yet the greatest degree of tonal difference. The Unanswered Question has strong rhythmic and tempo contrasts which are illustrated in Example 18, page 63, where the trumpet phrase is metered with the strings, but in a polyrhythmic relationship with them because of its unusual gruppetti. The flutes are in a different tempo than the strings, so the relationship is one of polytempi. Ives believed that independent lines in polyrhythmic textures should be contrasted as much as possible in tone color. He said,

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--for example: strings, brass, drums, bells, wood, and the various kinds of percussion instruments, each to each meter.²

Each section of Tone Roads No. 3 is different in terms of contrasts in texture, rhythms, harmony, and tone color. The A and B sections are repeated and use alternate

²Ives, Memos, p. 124.

instrumentations on the repetitions. For example, the instrumentation of the original version of the B section included violins I and II, cello, chimes, and piano. The instrumentation in the repetition of the B section is flute, clarinet, trumpet, chimes, cello, and piano. These obvious differences in tone color enabled Ives to repeat these sections without the material becoming monotonous (Example 37, page 103).

Ives used the tone color of the chimes as a binding force in three of the four sections of Tone Roads No. 3. The chimes are omitted in the C section, and suddenly the entire rhythmic and textural style is changed. A highlight of this change is the omission of the winds, leaving the strings as the only remaining tone color (see Example 38, page 104). This tone-color contrast between the B and C sections is more extreme than the contrasts between any of the other sections. Henry Cowell described this section of Tone Roads No. 3, saying,

[it is] . . . dominated by the all-penetrating chimes as a binding force. The trio increases in speed and with the help of the strings builds up to nine-part counterpoint. Then the chimes stop for a moment, the other parts go wildly every which way, until at the end the chimes reappear as a catalyst to crystallize the sound of the other instruments into sense.³

The tone color of the polyphonic texture (described in Chapter III, page 50) is usually a blend of strings or winds. Tone Roads No. 3 employs four winds (flute, clarinet,

³Cowell, Charles Ives, pp. 171-72.

8 **TRIO** **Allegro moderato** **2nd time Allegro vivace**

Fl. *f* (2nd time only)

Clar. *f* (2nd time only)

Tpt. *ff* (play 2nd time only)

Trb.

Ch. *f* *sf* *f* 1st time *ff* 2nd time

Vln. I *f* (play 1st time only)

Vln. II *f* (play 1st time only)

Vla.

Vlo. *mf*

Bs.

Pa. *ff* *sf* *f* 1st time *ff* 2nd time *sf*

Example 37. Ives, Tone Roads No. 3, p. 8,
mm. 13-17.

10

Allegro moderato

Fl.

Clar.

Tpt.

Trb.

Ch.

Vln. I

Vln. II

Vla.

Vlo.

Bs.

Pn.

Allegro moderato

22 23 24 25 26

f

p

poco accel. (ad lib.)

poco rit. (ad lib.)

(div.)

6

5

3

(*If only one Vlc. is playing omit upper notes.)

Example 38. Ives, Tone Roads No. 3, p. 10,
mm. 22-26.

trumpet, and trombone) and five strings (violins I and II, viola, cello, and bass); the texture units thus contrast the tone color of these two groups. Most of these texture units consist of less than a full group, such as a pair of violins or a flute, clarinet, and trumpet. The tone color of the chimes (or optional piano) is the only other contrasting instrumental color.

In Central Park in the Dark, the strings are used as an independent and non-developmental element. They provide a tone color that is a background, programmatically representing the night and darkness. The tone color of two pianos, one used for "piano drumming," the other for thematic material, is important in the B section. The texture of the A section is cumulative, using the strings alone, then the clarinet, flute, oboe, and left hand only of piano I. This pyramid of tone color evolves from the softest to the brightest and loudest instrumentation. Ives saved the brass instruments (trumpet and trombone) and the piccolo for the climax in the B section.

The end of the B section in Central Park in the Dark is the most climactic moment in the work. The piccolo, flute, oboe, clarinet, and trumpet are in a high tessitura and play trills. The full ensemble is playing, with two pianos supporting a percussion roll with a tremolo of cluster sonorities. The trombone has glissandi of over two octaves, making the total effect of the climax complete. This combined effect is illustrated in Example 39, page 106.

117 -29- 118

Fl. 5

Ob. 5

Cl. 5

Bassoon 5

Tpt. 3

Tbn. 3

SN Perc. Cym. B.D.

Pno. I

Pno. II

Viol. I

Viol. II

Viola

Cello

Bass

BVA

Loco

See marginal note, p. 24.

re-entrant

Example 39. Ives, Central Park in the Dark, p. 29,
mm. 117-18.

From these five compositions, there can be seen a similarity in Ives's orchestration and instrumentation. He orchestrates the moments of climax in the music with instruments which have been reserved for that purpose, and they usually include those with the brightest tone color. These include the piccolo, oboe, trumpet, snare drum, and higher octaves of the piano. His instrumentation in the chamber orchestra works frequently omits the French horn and tuba. He used no saxophones and rarely used a muted trumpet. Ives seldom used a wide variety of special string effects such as col legno, scordatura, tremolo, trill, harmonics, and pizzicato. His writing for strings is generally of a simple nature and without thematic importance. The role of the strings is usually as an accompaniment or background to the thematically important winds. The two most often used instruments for thematic statements are the trumpet and flute. In his instrumentation of The Unanswered Question, these are the two thematic instruments used.

CHAPTER VII

CONCLUSION

It is difficult to discuss separately the elements of music in Ives's works without partially ignoring the totality of experience that Ives wished to communicate. According to Eric Salzman, Ives was as much a traditionalist as an individualist. He wrote,

Ives was always able to use tradition--classical tonality, say--in exactly the same way he used his own new tonalities, poly-tonalities and non-tonalities: as a kind of meaningful sound. It was this range of activity, this totality of experience--out of simplicity and complexity, coherence and contradiction--that he made his pieces.¹

The functional combination of both traditional and innovative musical elements is one of the most important characteristics of Ives's music. Ives, for example, employed tone clusters and tertian harmony simultaneously in The Unanswered Question, because, as Eric Salzman wrote,

Ives felt no "historical compulsion" to abandon tonality (or anything else); his music turns away from narrative and process in the conventional sense; its tendency is inclusive; it absorbs or even revels in contradictions. Like Whitman, Ives could contradict himself, he could contain multitudes.²

¹Eric Salzman, Twentieth-Century Music: An Introduction (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967), pp. 144-45.

²Ibid., p. 144.

The traditional elements used in the five chamber-orchestra compositions examined in this thesis include tertian harmony, simple forms, borrowed tunes, standard instrumentation, and detailed programmatic explanations. The innovative elements include "poly" structures, "piano drumming," cluster chords, quarter tones, and unusual rhythmic gruppetti. The combinations of traditional and innovative elements found in these five compositions suggest that Ives primarily wanted to contrast musically the contradictory elements that exist in life's daily experiences. Ives thought of each new work as a challenge to his originality and consciously avoided writing the same piece twice with only superficial changes. Similar compositional innovations are used in several works but in slightly different ways, and in combination with different traditional or additional innovative materials. He utilized polytextures to express these contradictions, combining contradictory musical elements and contrasting them in "poly" structures such as polychords, polyrhythms, polytempi, and polythematic textures of borrowed and original melodies.

The Unanswered Question is particularly interesting because, as Eric Salzman wrote, it is a "tiny conception . . . full of prophetic Ivesianisms."³ Several similarities exist between The Unanswered Question and Central Park in the Dark, and yet, these works also have many different

³Ibid., p. 145.

features. Both works include two simultaneous tempi, different types of harmonic constructions for each layer of texture, and sharply contrasted tone color for each textural layer. The differences include the type and number of melodies used, the type of harmony in each textural layer, the size and instrumentation of the ensemble, and the rhythmic style and gruppetti employed in each layer. There are also many similarities in the other three works, such as the frequent use of "piano drumming," borrowed tunes, or unusual gruppetti, but each work contains its own special blend of these and other features.

Tone Roads No. 3, for example, has the most innovative harmonic and textural constructions and the only use of metric modulation found in the five works. It also has the only twelve-tone melody that is repeated and developed as a theme. This theme differs from the chromatic melody in The Gong on the Hook and Ladder in that the former has all twelve tones organized into a melody rather than just a chromatic scale and is repeated as a theme without melodic alterations. Tone Roads No. 3 is also the only work of the five in which the number 12 is of any significance, relating to the fully chromatic melody, the measure letters and numbers in three of the four sections, and the number of separate lines in the thickest textures of the B and C sections. The texture is the most sophisticated, using polyphonic texture units instead of borrowed tunes or original melodies.

The combination of these texture units with other texture units and ostinati forms a mass of polyrhythms that is more advanced than those found in the other four works.

The use of borrowed tunes in Calcium Light Night and The Gong on the Hook and Ladder and the manner in which they are used make these works very similar. The least altered version of the borrowed tune is heard near the end in both works, while the development of the tune through rhythmic and melodic alterations is in progress from the first thematic statements in the piece. The frequent use of borrowed tunes is a traditional element in Ives's music, but the way they are used in these two pieces is innovative.

Ives did not like having to crystallize his musical thoughts into fixed rhythmical time values, and he frequently overcame this problem by performing his own piano and organ works differently each time, adding and changing the harmony and rhythm. He wanted performers to do likewise, deciphering his complex rhythms and playing them freely, with more musical spirit than accuracy. In these five orchestral works, the opportunity for a variety of rhythmic interpretation does exist and is of particular importance in those works employing polytempi.

Ives was a transcendentalist, following musically in the literary and poetic footsteps of Emerson, Whitman, and Thoreau. He hoped that his music would never fully be understood and that his audiences could somehow participate

in the performance instead of being passive to it. According to Eric Salzman,

Ives thought of his music as a kind of non-passive, performance-practice activity; he meant it primarily to be performed, only secondarily to be listened to and even then in an active, participating way. He seems to have had the idea that audiences might, at some point, sing along or that someone might jump up with a flute or a mouth harmonica and join in. Ives wanted to transform even the passive state of reception into positive involvement, which accounts in part for the intentional use of familiar and popular music to produce the shock of surprise or amused recognition.⁴

This philosophy is clearly reflected in the five short orchestral works.

⁴Ibid.

APPENDIX

APPENDIX 1

COMPOSITIONS OF CHARLES E. IVES*

1. Organ pieces, songs, brass band marches, anthems and hymns about 1886-96
2. About Two Hundred Songs 1888-1921
3. Album of Thirty-four Songs (New Music Pub. Co.) 1889-1921
4. Manuscript church anthems, glee-club male choruses, piano pieces, etc. about 1890-1900
5. Organ and other fugues, concert and church-service pieces 1891 to about 1902
6. Marches, short pieces, overtures, etc., for orchestra about 1894-1904
7. March Intercollegiate for full military band (pub., Pepper & Co., Philadelphia, Pa.) 1896
8. For a "Revival Service"--Prelude, Offertory, and Postlude--String Quartet 20 min. (manuscript) 1896
9. First Symphony 50 min. 1896-98
10. Take-offs (academic, athletic, anthropologic, economic, tragic) for large and small orchestra about 1896-1916
11. Chorals from a "Harvest Festival" for double chorus, organ, trumpets, trombones 10 min. (manuscript) 1897 (1 & 2), 1902 (3)
12. From Orchestral Set, Holidays--Thanksgiving 15 min. (manuscript) 1897-1904
13. Cantata, Celestial Country (St. Bernard) (manuscript) 1898-99
14. Second Symphony (a new largo added around 1909 or 1910) 40 min. 1899-1902
15. Ragtime Dances (about a dozen) about 1900-1911
16. Single piano pieces, studies, etc. about 1900-1915
17. Overtures for large and small orchestras about 1901-1912
18. Allegro and Adagio (started as a First Violin Sonata and never completed) 1902-1907
19. Second Violin and Piano Sonata 25 min. (photostat) 1902-1909
20. First Piano Sonata 1 hr. (6 movements) 1902-1909

21. Sets for basset-horn, trumpet, cornet, 1902-1917
or English-horn solos, with small
orchestras, some called Cartoons and
Songs Without Voices. Of these some
were arranged (1921) for voice and
piano. (see published song albums)
22. Seven Songs (Cos Cob Press, 1902-21
209 W. 57th. St., New York)
23. 1st Orchestral Set, Three Places in 1903-14
New England 20 min. (C. C. Birchard
& Co., Boston)
24. Pieces for small groups--strings, about 1904-14
woodwind, etc.,--a few with voice,
some with choruses
25. Second String Quartet (two movements 1905
used in later pieces for orchestra)
26. Set for Theater or Chamber Orchestra 1906
15 min. (New Music)
27. Third Violin and Piano Sonata 30 min. 1907-14
(photostat)
28. First Violin and Piano Sonata 25 min. 1908
(photostat)
29. Fourth Symphony 40-45 min. (New Music) 1910-16
30. Third Symphony (1st & 3rd movements 1911
partly from organ pieces, 1901) 30 min.
(manuscript)
31. Preludes and sectional movement from a 1911-16
Universe Symphony (uncompleted)
32. Second Piano Sonata (pub. 1919) 1911-15
33. Second Orchestral Set 20 min. (photostat) 1911-15
34. Three pieces for unison chorus and 1912
orchestra: (1) A Man--Lincoln the
Great Commoner 5 min. (New Music)
35. Second Set for trumpet, woodwind, violin 1912-21
and piano 10 min. (manuscript)
36. From Orchestral Set, Holidays--Fourth
of July 10 min. (Edition Adler, Berlin)
37. 1st movement from Orchestral Set, 1913
Holidays (strings, flute, horn, and
bells) 12 min. (photostat copies)
38. Quartertone music--Chorale for strings 1913-14
(arranged for two pianos)
39. From Orchestral Set, Holidays--Decoration 1913
Day 10 min. (photostat copies)
40. Three pieces for unison chorus and 1915
orchestra: (2) The Masses 10 min.
(photostat copies)
41. Fourth Violin and Piano Sonata 20 min. 1916
(lithograph)
42. Third Orchestral Set--two movements 1919-26
(uncompleted)
43. A book of One Hundred Fourteen Songs published 1921

- | | | |
|-----|---|----------------|
| 44. | Three pieces for unison chorus and orchestra: (3) <u>An Election</u> 5 min.
(manuscript) | 1921 |
| 45. | A book of <u>Fifty Songs</u> (from #43 above) | published 1922 |
| 46. | Eleven songs | 1922-27 |
| 47. | <u>Largo</u> (quarternote--two pianos) | 1924 |
| 48. | <u>Allegro</u> (quarternote--two pianos) | 1924 |
| 49. | <u>(Third) Piano Sonata</u> (one movement, uncompleted) | 1928 |

*SOURCE: Ives, Memos, pp. 149-51.

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