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Lou Harrison and the American Gamelan

Since the inception of the first Indonesian music performance program in the United States in the 1950s, the number of gamelan in America has mushroomed. A gamelan—the word translates roughly as “orchestra”—is an ensemble comprising primarily pitched percussion. The main instruments of the ensemble are keyed metallophones with trough or tubular resonators, and knobbed gongs, some of which are suspended and some of which are laid horizontally on rope supports. The suspended gongs function in traditional compositions as colotomic markers delineating major structural points in the musical composition; the horizontal gongs traditionally serve a melodic function.¹

In 1983 Barbara Benary identified nearly a hundred imported or homemade gamelan in the United States; and by 1993, Soedarsono estimated that there were 200.² Though initially a West Coast phenomenon (Mantle Hood, a student of the Dutch ethnomusicologist Jaap

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Composer and ethnomusicologist Fredric Lieberman is a professor at the University of California, Santa Cruz. A specialist in Asian music and organology, he is the author of six books: three coauthored with Grateful Dead drummer Mickey Hart include *Planet Drum*, 2nd ed. (Petaluma, Calif.: Acid Test, 1998), *Drumming at the Edge of Magic*, 2nd ed. (Petaluma, Calif.: Acid Test, 1998), and *Spirit into Sound* (Novato, Calif.: Grateful Dead Books, 1999); and one coauthored with Leta Miller, *Lou Harrison: Composing a World* (New York: Oxford University Press, 1998). He and Leta Miller are currently compiling and editing Lou Harrison's prose writings.

Kunst, initiated the country's first gamelan program at UCLA after his appointment to the faculty there in 1954), today the study and public performance of gamelan is, if still not commonplace, at least frequent in many areas of the nation. (The website maintained by the American Gamelan Institute currently provides information on eighty-six active groups.)³ Gamelan ensembles may be found at Indonesian embassies and in museums; teaching gamelan are housed at many universities; and numerous community groups have been organized by former students. The American gamelan movement has its own journal, *Balungan*, based in New Hampshire (though founded and edited by a West Coast transplant, Jody Diamond), and articles about gamelan have begun to appear in mainstream nonethnomusicological American journals.⁴

At the same time, American composers—many, though by no means all, with roots in the West Coast—have begun to create a new repertory of works designed specifically for the gamelan. During the past two decades, composers throughout the United States and Canada have contributed to a growing repertory of works that call for the Indonesian ensemble alone or in consort with Western instrumental resources.⁵

Hood's work with gamelan emphasized the importance of hands-on performance for the understanding of non-Western musics; his teaching, which stressed the intersection of performance and scholarship, therefore focused on traditional styles, compositions, and musical structures rather than on the creation of new works. On the other hand, the American composers who have contributed to the gamelan repertory often came to their interest in the ensemble from a quite different vantage point: for instance, from their work in percussion, instrument-building, or tuning systems; or perhaps from a desire to create a type of fusion composition. In this context, the gamelan represented a new tool (albeit an elaborate and expensive one): an unusual sonic landscape to explore, an alternative way of structuring a musical composition texturally or formally, or even an opportunity to make a political statement about cultural interchange. As might be expected, these two very different attractions to gamelan came into direct conflict in the earlier stages of the American gamelan movement, creating a rift that has only recently begun to heal. Some students of traditional gamelan, who began to study in increasing numbers with Indonesian musicians at American universities during the 1960s and 1970s,⁶ tended to dismiss the work of "upstart" composers who had never studied the traditional repertoire as (at best) inappropriate or (at worst) sacrilegious. The composers, meanwhile, were puzzled by the reluctance of many of these students to play new music.⁷

Among contemporary gamelan composers, a central figure for the past quarter century has been Lou Harrison (b. 1917), who nearly single-handedly developed the American gamelan repertoire by composing more than fifty works for the Indonesian ensemble (listed in the appendix of this article) and building three complete sets of gamelan instruments with his partner, William Colvig. Harrison's extraordinary devotion to the gamelan, which he calls "the most beautiful musical ensemble on the planet,"⁸ has placed his work at the forefront of the American gamelan movement, and no discussion of the ensemble's history in the United States is complete without consideration of his contributions. The present article, then, is the story of this man's sixty-year romance with a musical ensemble, genre, and style that first captivated him through its sonority, and much later lured him to study its traditions and inner workings. Although Harrison heard gamelan music as early as the 1930s and referenced its sound in his works beginning in the 1950s, he came to his study of the Indonesian ensemble from outside the traditional path. His compositions for gamelan date only from the 1970s (long after he had mimicked its modes, textures, and rhythmic structures on Western instruments), and were a direct outgrowth of his interests in percussion music, alternative tuning systems, and other Asian musics (particularly those of Korea and China). The first "gamelan" that Harrison and Colvig built, now dubbed "Old Granddad," was not designed with the intent of copying an Indonesian ensemble, but rather was stimulated by Harrison's interests in just intonation and the percussion ensemble. Harrison and Colvig called it "An American Gamelan" only as an afterthought, recognizing their homemade orchestra's resemblance to the Indonesian ensemble. (Their two later gamelan, on the other hand, were modeled directly on a set of Javanese instruments.)

It was not that Harrison was unfamiliar with the gamelan when he and Colvig built Old Granddad in 1971. He had been fascinated by the sound of the ensemble since first hearing recordings owned by one of his housemates (Dorothy James Russell) during the mid-1930s, as well as those played by Henry Cowell in his course, "Music of the Peoples of the World," which Harrison took at the University of California extension in San Francisco in the spring of 1935.⁹ "Henry didn't explain any of the procedures of gamelan," Harrison recalls; "it was the sound itself that attracted me."¹⁰ That attraction was enhanced when he watched a Javanese dancer perform at the Curran Theater in San Francisco and when he saw and heard a live Balinese gamelan at the Dutch East Indies pavilion at the Golden Gate international exposition on Treasure Island in June 1939.

Harrison has always been a voracious reader. During the 1930s and 1940s his readings included an eclectic sampling of material on vari-

ous world musics, including the *Li Chi*, an ancient Chinese classic, part of which explores music's role in society. He also avidly studied a series of articles on Balinese music by Colin McPhee, from which he meticulously copied musical examples,¹¹ thereby assembling a collection of "little units of transcribed music" for personal study. "I was fascinated," Harrison recalls.¹²

In the early 1950s, when he became disillusioned with the serial and dissonant contrapuntal styles in which he had been composing for the past decade, Harrison began to incorporate gamelan-like sounds in his own music. Among the first of his pieces to manifest this trait to a substantial degree was the *Suite for Violin, Piano, and Small Orchestra* of 1951, which contains movements entitled First Gamelan and Second Gamelan. In this work (as in many others from the period), Harrison created what he now calls "aural imitations of the generalized sounds of gamelan. These movements don't use gamelan instruments, gamelan melodies, or gamelan procedures," he says, "but at least I didn't modulate!"¹³

Though largely uneducated in the theory and practice of gamelan composition at the time, Harrison nevertheless attempted to incorporate its aural features into his Suite. In typical fashion he began his compositional process by establishing a set of "controls," self-imposed restrictions that limit the range of possibilities suggested by his imagination. In the Suite, the controls were dictated by his perception (based on recordings and written descriptions) of the essential components of the Balinese *gendèr wayang*, a shadow-puppet theater (*wayang*) accompanied by a quartet of *gendèr*, instruments with thin ribbed plates over individually tuned tubular resonators. (The *gendèr* is one of the most difficult instruments in the gamelan: it is played with two disc-shaped mallets, and the player must dampen each of the metal plates precisely as the next note is struck to retain clarity of melodic line.)

Through protominimalist patterns of repetition and the relation of ostinato figures to the melody line in the piano (ex. 1), Harrison evoked the structure of *gendèr wayang* music. He mimicked the ensemble's timbre of pitched metallophones by combining celesta, harp, and tack-piano (that is, a piano in which thumbtacks have been inserted in the hammer felts). In later years Harrison continued to use this same instrumental combination frequently, referring to it as "the gamelan section of the orchestra." Both of the "gamelan" movements of the Suite emphasize melody over harmony within a texture of polyphonic stratification, resulting in a compositional style dramatically different from his prior works.

Based on his reading, his collection of examples, and his aural memory, Harrison also attempted to approximate traditional Balinese modes. The piano part in the First Gamelan (ex. 1a), though directly

Example 1. *Suite for Violin, Piano, and Small Orchestra*. (1951; used by permission of C. F. Peters Corporation © 1985.)

a. Movement 3: First Gamelan, beginning

Allegro ♩ = 144

Hp. *mp*

Cel. *mp*

Tack Piano *mp*

Pno. *mf* 15ma

Vc. I *mf* *pp*

Cb. *mf* *pp*

b. Movement 5: Second Gamelan, beginning

Allegro moderato

Hp. *mf*

Cel. *p*

Tack Piano *p*

Perc. Tam-tam with small rubber beater, soft

Piano *mf* very little pedal col 15ma sempre

mp (c) *

* (c) = center

modeled on a melodic line in Roy Harris's second string quartet,¹⁴ is also reminiscent of Indonesian *pélog*, a seven-tone tuning system that includes several semitones (although only five pitches are used in any specific *pélog* work). On the other hand, the Second Gamelan, as well as the ostinatos in the First Gamelan, suggest *sléndro*, an anhemitonic pentatonic (ex. 1b).

Although Harrison imitated (some might say appropriated) elements of Balinese gamelan music in this Suite, he made no attempt simply to mirror descriptions he had read. Rather, he used specific elements of the style that attracted him. (Harrison's approach, eminently practical, has always been to use "just what I need when I need it.")¹⁵ *Gendèr wayang*, for instance, does not typically include gongs, though they are the norm in other gamelan music.¹⁶ But Harrison, who loved gongs, decided to introduce them into his gamelan movements anyway; gong-like sounds appear in the cellos and basses in First Gamelan and in the tam-tam in the Second. He simply selected from his limited research those elements he found attractive. McPhee recommends a similar approach, citing a number of "technical details" likely to "stimulate a composer from the Western world."¹⁷ Harrison's term for the process is "musical tourism."¹⁸

While this procedure may call to mind questions of cultural appropriation and the unequal power relationships implied thereby, nothing could have been further from Harrison's consciousness (though some contemporary scholars would argue that such issues are part of a cultural mindset that is largely subconscious anyway). Emerging from the most serious personal crisis of his life—a nervous breakdown that required hospitalization for nearly nine months in 1947–48—he was at the time reevaluating his pre-crisis compositional style. Rejecting many works from his early New York period (1943–47)—most of which were severely modernist in harmonic language—Harrison moved instead toward melodicism, diatonicism, and transparent textures. Psychoanalysis forced him to burrow into his own history, through which he reconnected with the Asian influences of his early West Coast years. (In addition to his exposure to gamelan, he had grown up with a love of Asian art fostered by his mother's decorating strategies in the home, and had frequented the Chinese opera in San Francisco during the 1930s.) The shimmering metallic beauty of the gamelan recaptured Harrison's imagination and, in a series of compositions during the following two decades, he explored a means of filtering its sound through his own Western heritage. Works like *Solstice* (1950, for flute, oboe, trumpet, tack-piano, celesta, two cellos, and contrabass) contain explicit gamelan referents in terms of timbre, texture, mode, and melodic language; and the *Concerto in Sléndro* (1961, a violin concerto whose orchestra comprises two tack-pianos, celesta, and a host of percussion, including several suspended garbage cans)

aims at cross-cultural synthesis by situating gamelan sonorities and modal characteristics firmly within the context of a Vivaldi-style concerto grosso. (The excerpt from the *Concerto* shown in ex. 2 illustrates Harrison's attempt to mimic a gamelan-like texture: the structural melody, called the *balungan*, is played by the celesta, while the solo violin simultaneously performs an elaborated version of it.)

But gamelan was only one of several sources that guided Harrison's "exit from the halls of readjustment"¹⁹ during the 1950s and early 1960s. Equally—if not more—important in terms of his future work was his discovery of the possibilities of "just intonation." He undertook the study of just intonation on a challenge from Virgil Thomson, who handed him a copy of Harry Partch's 1949 book, *Genesis of a Music*, with the comment, "Here. See what you can make of this." Harrison dived eagerly into this world of new expressive possibilities, retuning his own piano and those of his friends; building wind, keyboard, and percussion instruments in various pure intonation systems; giving lectures on tuning to friends and colleagues; and even developing his own extension of just intonation, a system he calls Free Style, in which pitches are determined exclusively by their mathemat-

Example 2. *Concerto in Slendro* (1961), movement 1, mm. 31–37. (Used by permission of C. F. Peters Corporation © 1978.)

The musical score for Example 2, *Concerto in Slendro* (1961), movement 1, mm. 31–37, is presented in two systems. The first system covers measures 31 to 34, and the second system covers measures 35 to 37. The score is in 3/4 time and G major. It features four staves: Solo Vln., Celesta, Perc. 1, and Perc. 2. The Solo Vln. part starts at measure 31 with a melodic line marked 'ff'. The Celesta part starts at measure 31 with a melodic line marked 'p'. Perc. 1 is marked '(wash tubs)' and Perc. 2 is marked '(garbage cans)'. The score includes dynamic markings like 'ff' and 'p', and articulation like '8' and '8'.

ical relationship to their immediate neighbors without any fixed tonal center. Harrison's wide-ranging exploration of intonation systems worldwide has strongly influenced his music in all genres, including his own gamelan instruments, which use pure, nonbeating intervals.

Despite Harrison's fascination with music cultures of Asia since his youth, he did not visit the continent until 1961, when he was invited to the East-West Music Encounter in Tokyo. Immediately after the conference he spent two months in Korea and then returned the following year for a second visit, coupling the later journey with a study-trip to Taiwan as well.²⁰ In the interim, he arranged for Professor Lee Hye-Ku, one of Korea's most noteworthy scholars of traditional music, to come to California, and the two men collaborated on a partially completed book on Korean music.²¹ During these trips, Harrison studied native musics of Korea and Taiwan as well as several instruments, particularly the Korean double-reed *p'iri* and the Chinese *cheng* (a zither), and in the late 1960s he started a Chinese music ensemble with his partner William Colvig and his student Richard Dee. The group presented hundreds of concerts throughout California, at times in collaboration with poet Kenneth Rexroth, who would read his own translations of Chinese poems.

During one of the ensemble's public concerts in San Francisco, Harrison and Colvig brought along a set of porcelain bowls played with thin bamboo sticks—an Indian instrument called the *jalataranga*, which was formerly used in China. The bowls were tuned by filling each with a specified amount of water. In the hours before the concert, Harrison, Colvig, and Dee carefully calibrated the pitch of each bowl, using an eyedropper.

When we had them sounding quite beautiful we put Saran Wrap over the top and went out for a nice Chinese dinner. We came back, took the Saran Wrap off, and played the piece. But the bowls went "funk." There was no "ping" at all. None of us was aware that water standing in a bowl over time forms bubbles [from the dissolved gas which comes out of solution] that insulate it from the sounding body. The remedy is either to pour the water back and forth many times or to use glycerin as a wetting agent.²²

This fiasco set Bill Colvig on the road to building an American gamelan. Determined to find a better solution to the problem of gas formation, Colvig searched for a more dependable material and ultimately settled on steel conduit pipe. He built a small set of pipes tuned in just intonation that could hold their pitch permanently. "We tuned this first little set of one-inch conduit pipes by ear," says Colvig. "Lou's ear."²³

Both of them, of course, realized that more precise tuning was re-

quired. Colvig's solution was to use an oscilloscope, with which he and Harrison could tune their homemade instruments. Colvig's skill as an electrician made the realization of this concept easy: he assembled an inexpensive oscilloscope kit and used Lissajous patterns for precise adjustment of pure intervals.

Meanwhile, in 1969 the Pasadena concert-presenting organization Encounters approached Harrison about appearing on their series. The request stimulated him to realize a concept he had been itching to explore for some years: a puppet opera (another of his early—and long-lasting—passions).²⁴

Harrison's fascination with gamelan music was enhanced by its frequent association with the puppet theater (whose music, as we have noted, he had already imitated in his *Suite for Violin, Piano, and Small Orchestra* of 1951). Moreover, his long-standing interest in Spanish music attracted him to the works of Manuel de Falla, particularly the puppet opera *El retablo de maese Pedro* (based on *Don Quixote*), in which Falla portrayed the three singing characters by three distinctive musical styles. Harrison determined to try a similar approach, contrasting his characters by different instruments, modes, and tuning systems. The request from Encounters ultimately led to a grant from the Judith S. Thomas Foundation, supporting the creation of Harrison's puppet opera, *Young Caesar*, based on the tale of a homosexual relationship between the youthful Julius Caesar and Nicomedes, the king of Bithynia.²⁵ (The relationship of Harrison's homosexuality to his musical style is explored at length in our book, *Lou Harrison: Composing a World*, as is the question of Asian musical references as a "gay marker," an intriguing theory proposed by Philip Brett particularly in relation to some works by Benjamin Britten.²⁶ Though Harrison's ongoing fascination with Asian musics seems to lend credence to Brett's hypothesis, Harrison himself denies any such relationship—at least on the conscious level.)

For the premiere of *Young Caesar* in 1971, Harrison and Colvig undertook their biggest instrument-building project to date: constructing the diverse instruments of their first gamelan, Old Granddad. They also developed and built an additional large metallophone with a decidedly different tuning. The objective was to create an intonational contrast between Caesar's music and that of Nicomedes. Old Granddad, representing Caesar (the West), was tuned to a mode described by Ptolemy. The additional metallophone, representing Nicomedes (the East), was tuned to a pentatonic mode featuring overtones 6, 7, 8, 9, and 11.²⁷

By the time of the Encounters commission, Harrison was an experienced and skilled instrument builder in his own right. In his teens he had experimented with constructing a small violin, and during his

years on the East Coast (1943–53), he had built two clavichords of his own design, as well as replicas of the ancient Greek *aulos*. Upon his return from Korea and Taiwan in the early 1960s, he built numerous p'iri and several psalteries. His experience with the percussion orchestra was equally well established. During the 1930s and early 1940s he had composed ground-breaking percussion works using found, forged, or constructed instruments.

But now, with Colvig's help, he could couple his percussion and instrument-building experience with his interest in intonation systems. He and Colvig thus set out, using readily available materials, to build a percussion orchestra tuned in just intonation. Aluminum slabs cut to length and carefully filed to pitch formed the keys of Old Granddad's large metallophone; stacked number 10 tin cans served as its resonators (fig. 1; the resonators not only increase the amplitude but also reinforce harmonic overtones). For the smaller metallophones (fig. 2), they used steel conduit tubing, as Colvig had for his first small set of pipes. To these instruments they added larger ones: oxygen tanks, cut to random lengths and struck with small baseball bats, acted as bells, and galvanized garbage cans imitated the sound of bronze drums (fig. 3).

The premiere of *Young Caesar* took place on November 5, 1971, at



Figure 1. Large metallophones from Harrison and Colvig's first American Gamelan, "Old Granddad," showing aluminum slab keys and tin-can resonators. (Photo by Fredric Lieberman, 1996.)

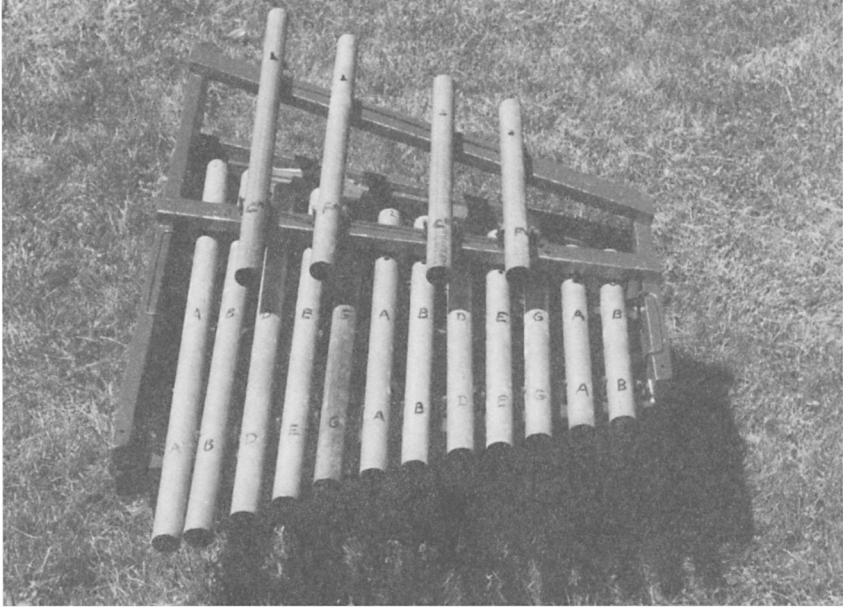


Figure 2. Smaller metallophone from Old Granddad, made from steel conduit tubing. (Photo by Fredric Lieberman, 1996.)

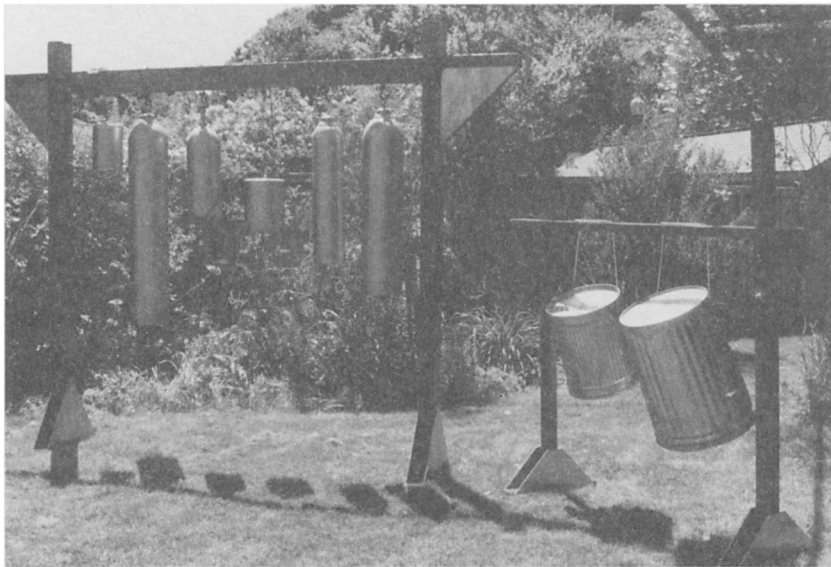


Figure 3. Cut-off oxygen tanks (simulating bells) and galvanized garbage cans (simulating bronze drums) from Old Granddad. (Photo by Fredric Lieberman, 1996.)

the California Institute of Technology, with five singers, seven puppeteers, and five musicians. The recitative style was intended to imitate that of the Chinese opera. The instrumentalists—Harrison, Colvig, violinist Daniel Kobialka, and Harrison's students Robert Hughes and Richard Dee—played a wide range of instruments, including violin, viola, p'iri, psaltery, harp, *koto*, ocarina, various side-blown and end-blown flutes, *sheng* (Chinese free-reed mouth organ), a portable organ tuned in Pythagorean intonation, a host of percussion instruments, the various components of Old Granddad, and the contrasting Nicomedes metallophone.

Following the premiere of *Young Caesar*, Harrison composed two additional works using Old Granddad (listed at the beginning of the appendix below): *La Koro Sutro*, with chorus (a setting of a Buddhist text translated into Esperanto); and the Suite for Violin and American Gamelan (composed jointly with Richard Dee).²⁸

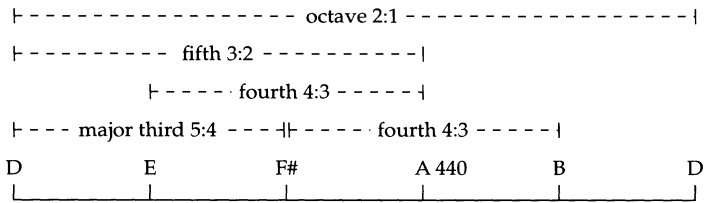
Like Harrison's compositions of the 1950s, Old Granddad resembled a traditional gamelan only superficially. His objective was tuning, his scale a thoroughly Western D major: Ptolemy's Diatonic Syntonon, or "stretched diatonic."

The goal was to create as many pure intervals, vibrating in superparticular proportions, as possible. Especially important were pure fourths (4:3) and fifths (3:2), as well as pure major thirds (5:4) with the primary notes of the scale. Harrison and Colvig started with a standard A-440, from which they located a 3:2 fifth with the lower D and a 4:3 fourth with the lower E (fig. 4a). The major third, D to F-sharp, and the fourth, F-sharp to B, were then added as shown, completing a pentatonic scale. To this pentatonic, they added the two remaining pitches of the D major scale by locating G a 4:3 fourth above D, and C-sharp a 3:2 fifth above F-sharp, yielding the scale shown in figure 4b, which features two sizes of whole step (the "greater tone," 9:8, and the "lesser tone," 10:9), pure semitones (16:15) and a large number of pure major and minor thirds (5:4 and 6:5).²⁹

Up to this point, Harrison had not studied traditional Indonesian gamelan; neither did he understand in detail its compositional processes or the idiosyncrasies of its various instruments. He relied instead on his research, his acute ear, and his ability to capture and imitate essential elements of style. This mimetic approach came to an abrupt end in 1975, however, when he was invited to give a course on "Intonation in World Music" at the summer session of the Center for World Music in Berkeley.

According to composer and instrument-builder Daniel Schmidt, the Berkeley gathering was "a great confluence of forces that really put American gamelan on the map."³⁰ It attracted an eclectic mix of composers, performers, and instrument builders: a contingent of early

a. The initial tuning process.



b. The full scale.

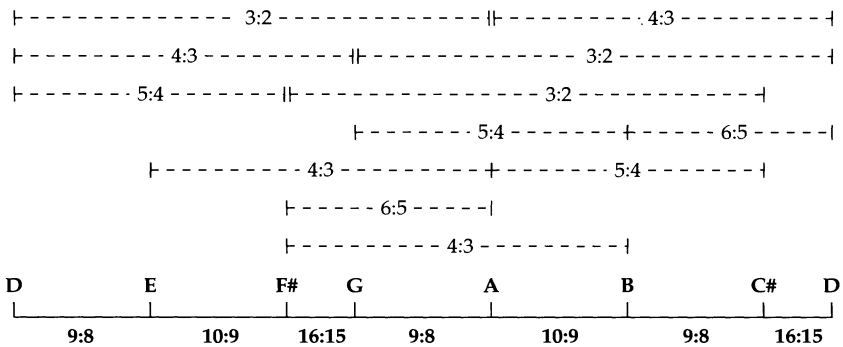


Figure 4. The tuning of Old Granddad

music enthusiasts who came to study with LaNoue Davenport of the ensemble Music for Awhile; a group of young experimental composers, many of whom enrolled in Harrison's intonation course; and a zealous coterie of traditional gamelan students who came to work with K.R.T. Wasitodiningrat (known familiarly as Pak Cokro),³¹ at the time an instructor at the California Institute for the Arts (CalArts) in Valencia. Pak Cokro taught on the gamelan Kyai Hudan Mas (literally "Venerable Golden Rain"), which had been imported to Southern California from Central Java in 1972. (Many Javanese gamelan bear personal names.) The Center for World Music not only brought Pak Cokro to Berkeley, but also arranged to bring Kyai Hudan Mas as well.

Harrison, for his part, brought Old Granddad, his pseudo-gamelan, to demonstrate just intonation and the interplay of Western and non-Western influences. As his course drew to a close, he suggested to his students a concert of new compositions to be written for (and performed on) his American gamelan. The event took place, with considerable controversy, on August 16, 1975. Included were excerpts from Harrison's recently completed *Suite for Violin and American Gamelan*; a film by James Broughton ("Nuptiae") with music Harri-

son had written using pitched gongs of the Filipino *kulintang*; and works by Schmidt, Jeff Abell, Peter Plonsky, Philip Corner, and Barbara Benary (see program, fig. 5).

“Lou was just stunning,” recalls Schmidt, “so inviting and yet so uncritical. He kept his ego out of the way and let us produce that concert. We felt very much that we were doing it together as a group.”³² Among the American students of Javanese gamelan, however, some reacted with alarm. What right did Harrison and friends have to compose music for a hybrid set of instruments audaciously called “An American Gamelan” without years of study with an Indonesian master? Pak Cokro himself said nothing.

Unbeknownst to the gamelan students, however, Harrison had already determined to set out on precisely the path they would have advised. He began a serious study of traditional gamelan with Pak Cokro and teaching assistant Jody Diamond, learning the techniques of the various gamelan instruments as well as simple classical forms such as *lancaran* and *bubaran*. He brought Pak Cokro and Kyai Hudan Mas to San Jose State University for a residency (Harrison taught at San Jose State from 1967 to 1983), and even began to build a second gamelan with Colvig, this one modeled directly on Kyai Hudan Mas.

When it came to the tuning of his instruments, however, Harrison was determined to apply his studies of just intonation systems. The San Jose State gamelan (fig. 6), which Harrison and Colvig named Si Betty to honor music patron Betty Freeman in Los Angeles, has two sets of instruments, one in sléndro and one in pélog. Although these two tuning systems are common to all gamelan music, their component intervals can only be described in the most generalized terms—sléndro as an anhemitonic pentatonic with wide seconds and narrow thirds, and pélog as a hemitonic mode with narrow seconds and wide thirds—because the precise tuning of each gamelan is individualized. The various instruments within any one gamelan are constructed as a set and individual components cannot be interchanged with those of another gamelan. While Harrison realized that Indonesian tuning practice (in contrast to that of European cultures) was not governed by concern with the mathematical purity of interval vibration ratios,³³ he was nevertheless intrigued by the Indonesian culture’s embrace of intonational variation. Thus a gamelan tuned in just intonation (its intervals conforming to small integer ratios), while not culturally *characteristic*, was nevertheless culturally *possible*. Harrison took full advantage of this license for tuning diversity to seek for Si Betty acceptable sléndro and pélog modes within the natural overtone series. He and Colvig tuned the bars of Si Betty’s metallophones to produce overtones 16, 19, 21, 24, 28 for the sléndro instruments, and overtones 12, 13, 14, 17, 18, 19, and 21 for the pélog group.

CENTER FOR WORLD MUSIC / SECOND BERKELEY WORLD MUSIC FESTIVAL

Saturday, August 16, 1975

MUSIC FOR AN AMERICAN GAMELAN

Solo and Slow Jhala *Lou Harrison*

"Nuptiae," a film by James Broughton, with music by Lou Harrison

Convergences *Barbara Benary*Gamelan II *Philip Corner*"The Passing of All Shining Things" *Jeff Abell*
*text by e. e. cummings*Dolphin Eucalyptus *Peter Plonsky*Braid Piece *Barbara Benary*"The Dreamer that Remains," a film produced by Betty Freeman, with
*music by Harry Partch*Changing Part *Daniel Schmidt**Instruments of the Gamelan were designed and constructed by William Colvig; played by
Jeff Abell, Barbara Benary, William Colvig, Suzanne Chutroo, David Doty, Eulah Getty,
Lou Harrison, Bob Labaree, Peter Plonsky, Daniel Schmidt, Jacqueline Summerfield*

Figure 5. Program for the concert "Music for An American Gamelan" (Old Granddad), Center for World Music, August 16, 1975.

separated by a 9:8 whole tone, with each fourth subdivided into two unequal intervals (8:7 and 7:6).

Later Harrison experimented with still another tuning that included three 8:7 supermajor seconds, one 7:6 subminor third, and a "remainder" interval of 147:128³⁴ that could be positioned in two locations (as shown in fig. 8).

Recognizing his own status as a neophyte in the world of gamelan theory and practice, Harrison sought the approval of native teachers for his various pure interval tunings. Pak Cokro immediately identified the two experimental tunings in figure 8 as representative of the two major gamelan schools of central Java (Yogyakarta [1] and Surakarta [2]), and pronounced the pélog of Si Betty "good with voices." Composer and gamelan director Widiyanto, from Surakarta, told Harrison that the tuning in figure 8 (2) "touched his heart."³⁵ The comments of both men reflect a typical Indonesian attitude toward intonation: a gamelan tuning is a personal expression of the particular

Example 3. The first sixteen pitches of the overtone series. (Black notes differ significantly from the corresponding equal-tempered pitch.)

1. octave (2:1)

1 2 3 5 6 i

8:7 8:7 147:128 8:7 7:6

fifth (3:2)

OR

2. octave (2:1)

1 2 3 5 6 i

8:7 8:7 7:6 8:7 147:128

Figure 8. Experimental gamelan tunings with three 8:7 intervals, a 7:6 subminor third, and a remainder interval of 147:128

tuner; vocally inspired, it reflects his highly individualistic intonational character, or *embat*. Marc Perlman quotes the “fourth-generation gamelansmith” Tentrem Sarwanto:

Everyone has his own *embat*. I went once with S . . . to tune a *gamelan* owned by S.’s friend. S. and I disagreed over how it should be tuned: he wanted certain pitches changed which I felt should be left alone, and I wanted to change certain pitches which he thought should be left alone. His *embat* was different from mine. It was a conflict of feelings [*rasa*]. I gave in, and tuned it the way S. wanted, but I felt bad about it all the way home.³⁶

Did Pak Cokro and Widiyanto perhaps sense that just intonation was Harrison’s own personal *embat*?

Stimulated by his studies with Pak Cokro, Harrison was anxious to compose his own works in traditional style and was thrilled when Pak Cokro suggested, after several months of study, that he do so. In 1976 he wrote his first three works for the traditional ensemble and dedicated them respectively to Pak Cokro, Samuel Scripps (owner of Kyai Hudan Mas), and Robert E. Brown (director of the Center for World Music). Daniel Schmidt recalls the reaction of the members of his own Berkeley gamelan to Harrison’s new works. “I think several students off in the corner probably fainted. But for me it was a very important moment because I had been thinking about composing for gamelan for some time.”³⁷ Due to the revered role of gamelan in Indonesian society, its high prestige as a manifestation of cultural achievement, and the traditionally slow learning process through apprenticeship to an established master, young composers such as Schmidt felt inhibited about composing for the ensemble. Harrison, however, as an established, respected composer in his own culture (indeed, almost a contemporary of Pak Cokro), was in a quite different position. His works were offered (and received) as a gesture of tribute and admiration to his mentors and to the culture that had inspired them. One unintended consequence was the liberation of a number of younger American composers who had hitherto been reluctant to use the gamelan in their own works; in a sense, Harrison licensed them to experiment with it.

For his earliest gamelan pieces, Harrison often favored simpler traditional Javanese forms such as *lancaran* or *bubaran*—forms that are defined by their colotomic structure, drumming patterns, and other structural features. At times, however, he also gave himself greater freedom by devising new forms of his own invention. Early works such as *Gending Paul*, *Gending Jody*, and *Music for the Turning of a Sculpture* are in what Harrison calls “free verse” form. He marked off the music’s phrases in places that seemed logical to his Western ear with

a colotomic structure that was decidedly non-Indonesian. Instead of calling for a regular alternation of strokes on the colotomic instruments, Harrison weighted them and then used them individually or in combination "in function of their poetic power rather than as mechanical reminders" of the phrase lengths.³⁸

By 1978 Harrison was consciously mixing Eastern and Western elements. In particular, he sought to create a type of intercultural concerto by using the gamelan as the backup orchestra for Western solo instruments, as in his *Threnody for Carlos Chávez* for viola and gamelan, or *Main Bersama-sama* ("Playing Together") for French horn and gamelan. Harrison has since written other works for gamelan with solo saxophone, violin, cello, and piano (all listed in the appendix below), and has even added a piccolo trumpet part to one of his first "traditional"-style gamelan pieces, *Bubaran Robert*.

Harrison views the introduction of Asian influences into Western music as a positive development, counteracting Western music's traditional emphasis on harmonic elements by focusing more intensely on rhythmic subtlety, polyphonic layering, and sophisticated and expansive melodic expression. At the same time, his approach was Western not only in terms of the tuning systems he applied to his instruments, but also in his concept of musical composition as a product of the imagination of an individual, controlling composer. Like percussion, just intonation, Korean music, and Chinese music, gamelan became another tool in his arsenal of compositional resources, providing a means by which he could express a worldview embracing cultural diversity (long before that term had become a cliché). To Harrison the process of composition is a sophisticated game. He encounters a style or sonority that attracts him, eagerly learns to imitate it (what he calls the "Me, too" philosophy), and then combines it with other influences. In the course of creating a new composition, he then selects from his toys ("which I've laid out on a wide acreage"), reassembling them into novel hybrids that, while echoing their sources, nevertheless speak with a distinctive, personal voice.

Harrison's trip to Indonesia (almost a rite of passage in traditional gamelan study) did not come until 1983, after a six-month residency in New Zealand. By this time he had already become acquainted with various regional styles of gamelan music, including those of Central Java, West Java (Sunda), Cirebon, and Bali. Harrison had studied Sundanese gamelan with virtuoso drummer Pa Undang Sumarna, who began teaching at the University of California, Santa Cruz, in 1976. In New Zealand in 1983 he encountered Cirebonese style,³⁹ which in many respects may be an ancestor to the dominant style of Central Java. In his numerous works for gamelan over the years, he has used each of these styles as models.

Harrison treats the instruments of the gamelan in traditional ways and favors classical formal structures. Nevertheless, his gamelan works are distinctive and individualistic, showing his own musical personality in the guise of instruments from another culture. For example, his treatment of a work's basic melodic material reflects traditional Indonesian concepts but is also strongly influenced by his Western training. In traditional gamelan music, various levels of rhythmic diminution and augmentation are performed simultaneously around a melodic framework called the *balungan*. Though central to the melodic material of the piece, the *balungan* in traditional works may be buried deeply in the polyphonic texture (or might not even sound as an integral line in any single instrument). In Harrison's gamelan works, however, the *balungan* is typically closer to the surface, often appearing as a structural, but very audible melodic line. "The *balungan* melody for the Javanese musician," says Vincent McDermott,

is a simplified version of an ideal melody which appears in various ways in different instruments. But Lou will put his melody right into the *balungan*. The [traditional] *balungan* itself works in a very regular fashion, resulting in a melody that tends to have edges or well defined boundaries. But Lou is interested in going past what he feels are some of the boundaries in Javanese music. For instance, in a form that traditionally has an eight- or sixteen-beat pattern, Lou will very consciously cross over that boundary; instead of writing 8 plus 8 plus 8 plus 8, he'll make his first melody ten beats. He may preserve the form of the Javanese music through the gong pattern—the *colotomy*. But he will write his own melody running across it.⁴⁰

In recent years, Harrison has focused more heavily on large-scale works for Western instruments, most of which are influenced to some degree by his study of gamelan. In these late works, the gamelan influence is both more subtle and more sophisticated than his mimetic approach of the 1950s and 1960s. His intensive involvement with gamelan over the past quarter century has challenged him to attempt a transference of compositional processes as well as sonorities into otherwise Western works. One of the first compositions to exhibit this procedural transference is the *Varied Trio* (1987), whose first movement is titled *Gending* (equivalent to the English word "piece").

The movement consciously imitates traditional gamelan texture. In example 4a, a typical example of multiple layering, the *balungan* notes (A–F-sharp D–B E–F-sharp, given as half notes in the example) are plucked on the strings of the piano, while an ornamentation in eighth notes is played on the keyboard. The three ornamental notes in the

piano following each balungan pitch anticipate and decorate the next one. Meanwhile the vibraphone provides a third level of diminution, ornamenting the piano line in note values twice as fast. All levels of decoration coincide on unison "goal tones" at the sounding of each balungan pitch.

The movement imitates a traditional gamelan composition in other ways as well. There is an opening *buka*, for example—a monophonic introduction that concisely displays the essential characteristics of the mode (ex. 4b). And the violin, which enters with a rhapsodic improvisatory line in measure 13, evokes the gamelan's two-string bowed *rebab* (ex. 4c).⁴¹

Two works from 1990, the Piano Trio and the Fourth Symphony, similarly combine Eastern and Western compositional procedures.⁴² In the opening movement of the symphony, the balungan is introduced in measure 6 in the oboe (ex. 5). Since in traditional gamelan compositions the balungan typically is built from four-note groupings (*gatra*) in which the second and fourth notes function as goal tones,

Example 4. *Varied Trio* (1987), movement 1, Gending. (From Leta E. Miller, ed., *Lou Harrison: Selected Keyboard and Chamber Music, 1937–1994*. In *Music in the United States of America*. Used by permission of the American Musicological Society and A-R Editions © 1998.)

a. Mm. 6–11 (x = balungan notes; dotted lines delineate unison goal tones; arrows show anticipation of the balungan note in the ornamental figuration)

The musical score for Example 4a shows measures 6 through 11. It is written for Vibraphone and Piano. The Vibraphone part (top staff) plays eighth-note patterns. The Piano part (middle staff) features a melodic line with slurs and arrows indicating anticipation of balungan notes. The bottom Piano staff shows the balungan notes, marked with 'x' at measures 6, 9, and 11. Dotted lines indicate unison goal tones between the Piano and bottom Piano staves.

b. Opening *buka*

Musical score for Vibraphone and Piano, measures 1-2. The Vibraphone part begins with a rest, followed by a melodic line starting on measure 2 with the instruction *pluck strings* and *mp*. The Piano part starts with a *mp* dynamic and a melodic line, with the instruction *richly pedalled throughout* written below the staff.

c. Mm. 13ff.; violin imitates the rebab

Musical score for Violin, Vibraphone, and Piano, measures 13-19. The Violin part (Vn.) starts at measure 13 with the instruction *espressivo [cantabile, rubato, play differently each time]* and a *mf* dynamic. The Vibraphone (Vib.) and Piano (Pno.) parts continue from the previous section. The Piano part features a complex, rhythmic accompaniment with many sixteenth notes.

Harrison aligned the notes of his own balungan so that the second of each pair of pitches falls on a strong beat. Meanwhile the celesta, which imitates the gamelan's *bonang* (knobbed gongs that are laid horizontally on ropes and struck with soft beaters), plays a gentle elaboration of the oboe melody in a style similar to that seen in the *Varied Trio*. This type of figuration—featuring alternation between pairs of pitches and an anticipation of each balungan note—is called *mipil* in Javanese gamelan practice.

While the balungan in the *Varied Trio* was based on a pentatonic mode suggesting Javanese *sléndro*, the melodic line in the symphony was generated by a decidedly non-Indonesian compositional “control” (one Harrison has used since the 1930s), which he calls “interval control.” The process involves defining a small number of melodic intervals that are used exclusively, either ascending or descending,

Example 5. Fourth Symphony (1990, revised 1991, 1993, 1995), movement 1, “Largo,” beginning. (© 1990 by Peer International Corporation. International copyright secured. Reprinted by permission.)

The image shows a page of a musical score for the beginning of the Fourth Symphony, movement 1, "Largo". The score is arranged in a standard orchestral format with the following parts and markings:

- Oboe:** Marked "balungan: a" and "p espr. solo".
- Celesta:** Marked "sempre PED.", "buka:", and "f (L.V.)".
- Harp:** Marked "L.V." and "f".
- Violin I:** Marked "con sord." and "pp".
- Violin II:** Marked "con sord." and "pp".
- Viola:** Marked "con sord." and "pp".
- Cello:** Marked "con sord." and "pp".
- Bass:** Marked "(senza sord.)" and "pp".

The score features a complex rhythmic pattern with many sixteenth notes, characteristic of Harrison's "interval control" technique. The tempo is "Largo".

Example 5. (continued).

(balungan)

7

b c d

Oboe I

Celesta

b b c c d d

mp

mf

Accel. poco a poco

14

I

Flutes

II

Oboe I

Clar. I

Celesta

LS

Cello

f cantando, espr.

throughout a work. (Inversions are not allowed.) Permitted intervals for the symphony's opening movement are the minor third, minor sixth, and major second. As in the *Varied Trio*, the symphony's balungan comprises pairs of pitches, but in this case its pitch-generating process yielded a far greater number of tones than would occur in a traditional sléndro or pélog mode.

Harrison opened the symphony with an introductory buka as in the trio (see ex. 5, mm. 2–6). Here the celesta presents the three permitted intervals (the essential elements from which the melodic material of the symphony is derived) just as a traditional buka, in setting forth the essential elements of the mode, defines the forthcoming composition's building material. The strings imitate the large gong (gong ageng), which normally sounds at fixed time intervals during the work.

In measure 18 a third layer of stratification appears. The mipil-type pitch alternation appears both on the eighth-note level (clarinets) and on the sixteenth-note level (flute 2), while the balungan itself is now transferred to the cellos.

The central section of the movement (mm. 34ff.; ex. 6) introduces an additional change; the balungan, now in flute 1, trumpet, and trombone, appears in augmentation. Meanwhile the low strings act as gongs.

This augmentation of the balungan, which frequently occurs in traditional gamelan works after the first portion of the piece, allows for a greater number of layers, and hence may actually give the impression of an increase in tempo. A denser texture often results, which in this case enhances the dynamic crescendo of the movement by building a thicker fabric and more complex polyphonic interplay (ex. 7). Mipil patterns continue in the woodwinds, while the celesta and tack-piano ornament in *cèngkok* style, in which a particular figuration is repeated on various pitch levels while intersecting with the balun-

Example 6. Fourth Symphony, movement 1, mm. 34–38

The musical score for Example 6, Fourth Symphony, movement 1, mm. 34–38, is presented in a standard orchestral format. It features the following parts and markings:

- Flute II:** Marked *legato, noble* and *sim.* (sforzando).
- Oboe I & II:** Marked *legato* and *sim.*
- Clarinet I & II:** Marked *legato* and *sim.*
- Trumpet I, II, & III:** Marked *balungan* and *molto legato, noble*.
- Trombone I & II:** Marked *balungan* and *molto legato, noble*.
- Violin I & II, Viola, Violoncello, and Contrabass:** Marked *unus*, indicating a gong-like function.

The score shows a complex polyphonic texture with various dynamics and articulations, including *legato*, *molto legato*, and *sim.* (sforzando) markings.

gan on unison goal tones. The change in note density due to alterations in the speed of the balungan, as seen in examples 6 and 7, is typical of traditional gamelan compositions. (The various degrees of note density in relation to the balungan are known as *irama* in Java.) At the end of the movement Harrison restores his original *irama* in a typical winding-down procedure.

Example 7. Fourth Symphony, movement 1, mm. 66–68

56

Flute II *p molto*

Oboe I *p molto*

Oboe II *p molto*

Clar. I *p molto*

Clar. II *p molto*

Hn. I *p*

Tpt. I *p*

Tpt. II *p*

Tpt. III *p*

Tbn. I *p*

Tbn. II *p*

Perc. III Vibes *upright, stronger*

Celesta *f let ring, dampening discreetly*

Tack Piano *f let ring, dampening discreetly*

Harp *f*

Vln. I *p*

Vln. II *p*

Vla. *p*

Vc. *p*

Cb. *p*

to the fore

mell.: f

to the fore

mell.: f

divisi

For the finale of the symphony,⁴³ Harrison combined gamelan timbres and procedures not only with a Western orchestra but also with Amerindian texts (a series of coyote stories). His pitch set here was determined by an iron gamelan he had imported from Indonesia.⁴⁴ He approximated the pitches of this gamelan and used the resulting sléndro pentatonic (D E F-sharp A B) as his scale (ex. 8). Other gamelan techniques appear in this small excerpt as well. In m. 7ff, for in-

Example 8. Fourth Symphony, movement 4, mm. 5–12

stance, Harrison imitated the sound of *imbal* in the violin (although in traditional gamelan two players would have performed this line, alternating notes and rests, interlocking their parts to sound a single continuous melodic line). The large gong is evoked by the lowest instruments (bassoon, trombone, tuba, bass drum, and contrabass); the smaller gongs, which traditionally mark intermediate structural points, are sounded in the trumpets and horns. The trumpet pitches were determined by the overtones of Harrison's gamelan. At the end of the movement, Harrison changed the irama, augmenting the length of the notes of his balungan and thereby multiplying the layers of diminution.

To Indonesians, gamelan is more than a musical entertainment; it is a cultural symbol—an ancient, refined national art form. To Harrison, gamelan is also, of course, a symbol of Indonesian artistic traditions, but, above all, it functions for him more broadly as a tool for creating musical compositions of compelling beauty. Furthermore, the ensemble reinforces his political outlook: his dedication to community, pacifism, and cross-cultural synthesis. The gamelan community intrigues him as a cultural artifact, a symbol of leaderless group cooperation, the individual players working as a tightly knit unit to flesh out the implications of a determining melodic skeleton, or collaborating to weld a single melody line from interlocking fragments. This type of communal music-making is not unlike Harrison's percussion ensemble experiences of the 1930s. His small group of friends—all amateur percussionists (some musicians, but mostly dancers, architects, artists, and others)—rehearsed long hours in cramped quarters, delighting in their discoveries of new sounds produced by exotic instruments, homemade ones, or simply junk (such as brakedrums, metal pipe, and flower pots). Indeed, gamelan was in a sense like Harrison's other "found" instruments, although in this case carefully crafted ones.

Harrison has dedicated much of his creative life to the integration of diverse world musics. Actually he would probably prefer the singular—"world music"—to evoke the image of one "big culture" with a rich palette of subgenres from which to choose. He sees no conflict in combining gamelan instruments with Western instruments, using Indonesian compositional processes in Western orchestral works, or setting American Indian tales to the murmuring background of a gamelan, real or imitated. (In their original setting, the coyote stories were accompanied by an actual gamelan; for the Fourth Symphony he orchestrated and expanded the original composition.) His ultimate objective is to achieve a distinctive musical sound. Whether it is fitting for him to use the instruments or compositional processes of a foreign culture to this end is not an issue, in his view, so long as his bor-

rowings are effected with respect. Bruce Ziff and Pratima Rao, in a recent discussion of cultural appropriation, delineate four areas of concern in the transference of cultural archetypes: (a) possible harm to the appropriated community; (b) negative effects on the borrowed object itself; (c) the potential for unequal and/or unethical material gain by the appropriating person or institution; and (d) questions of ownership of cultural goods.⁴⁵ By this standard, Harrison can well justify his cultural mixtures. His work harms neither the study and performance of traditional gamelan (in Indonesia or the United States) nor the compositions themselves. He derives no personal gain (quite the contrary!) nor does he claim personal ownership of any borrowed elements. In fact, Harrison's love of the root culture has led him to promote with missionary zeal (financially as well as philosophically) traditional Indonesian performing arts. As for his own use of gamelan instruments and stylistic elements, his objective is solely artistic.

At the 1961 East-West Encounter in Tokyo, Henry Cowell exhorted the delegates to respect hybrids, because beauty often arises out of synthesis. Harrison expanded this idea further:

It is as though the world is a round continuum of music. Perhaps here a particular kind of expression is at its most intense and perfect. Then by gradual and geographic degrees we move to some other center with a special expression. Anywhere on the planet we may do this—always by insensible degrees the music changes, and always the music is a compound, a hybrid of collected virtues. This whole round living world of music—the Human Music—rouses and delights me, it stirs me to a “transethnic,” a planetary music.⁴⁶

In short, Harrison concludes, we have no choice but to respect hybrids, because there really is nothing else.

Appendix

Lou Harrison: Works for Gamelan

- Young Caesar* (puppet opera with American gamelan), 1971
La Koro Sutro (SATB chorus, American gamelan), 1972
Suite for Violin and American Gamelan (with Richard Dee), 1974
- Lancaran Samuel* (Javanese gamelan), 1976
Gending Pak Chokro (Javanese gamelan), 1976
Bubaran Robert (Javanese gamelan), 1976 (optional piccolo trumpet part added, 1981)
Lancaran Daniel (Javanese gamelan), 1976
Lagu Sociseknum (Javanese gamelan), 1976

- Gending Paul* (Javanese gamelan), 1977
Gending Jody (Javanese gamelan), 1977
Music for the Turning of a Sculpture by Pamela Boden (Javanese gamelan), 1977
- Serenade for Betty Freeman and Franco Assetto* (Sundanese gamelan), 1978
Main Bersama-sama (French horn, Sundanese gamelan), 1978
Threnody for Carlos Chávez (viola, Sundanese gamelan), 1978
- Scenes from Cavafy* (baritone, male chorus, harp, Javanese gamelan), 1980
Gending Alexander (Javanese gamelan), 1981
Ladrang Epikuros (Javanese gamelan), 1981
Gending Hephaestus (Javanese gamelan), 1981
Gending Hermes (Javanese gamelan), 1981
Gending Demeter (Javanese gamelan), 1981 (rev. 1983)
Gending in Honor of the Poet Virgil (Javanese gamelan), 1981 (revised 1985)
Gending Claude (Javanese gamelan), 1982
Lancaran Molly (Javanese gamelan), 1982
Gending Dennis (Javanese gamelan), 1982
Gending Pindar (Javanese gamelan), 1982
Double Concerto for Violin, Cello and [Javanese] Gamelan, 1982
Gending in Honor of Herakles (Javanese gamelan), 1982
Gending in Honor of Palladio (Javanese gamelan), 1982–83
Gending in Honor of James and Joel (Javanese gamelan), 1983
- Lagu Lagu Thomasan* (Cirebonese gamelan), 1983
Lagu Cirebon (Cirebonese gamelan), 1983
Ketawang Wellington (voice, Javanese gamelan), 1983
Lagu Victoria (Cirebonese gamelan), 1983
Foreman's Song Tune (Javanese gamelan), 1983
For the Pleasure of Ovid's Changes (Javanese gamelan), 1983 (rev. 1986)
Lagu Elang Yusuf (Cirebonese gamelan), 1984
Gending Max Beckmann (Javanese gamelan), 1984 (rev. 1991)
Gending Vincent (Javanese gamelan), 1984
Lagu Pa Undang (Sundanese gamelan), 1985
Faust (soprano, tenor, bass, chorus, chamber orchestra, Sundanese gamelan), 1985
Gending in Honor of Aphrodite (chorus, harp, Javanese gamelan), 1986
Ladrang in Honor of Pak Daliyo (Javanese gamelan), 1984–86
A Cornish Lancaran (soprano saxophone, Javanese gamelan), 1986 (rev. 1989)
Concerto for Piano with Javanese Gamelan, 1987
Philemon and Baukis (violin, Javanese gamelan), 1985–87
A Soedjatmoko Set (solo voice, chorus, Javanese gamelan), 1989
Ibu Trish (Sundanese gamelan), 1989
Homage to Pacifica (solo voice, chorus, narrator, bassoon, one percussion, harp, psaltery, Javanese gamelan), 1991
A Round for Jafran Jones (Balinese gamelan), 1991
Gending Moon (male voice, Javanese gamelan), 1994
Dartington Hall (Javanese gamelan), 1996
In Honor of Munakata Shiko (Javanese gamelan), 1997
A Dentdale Ladrang (Javanese gamelan), 1999
Ladrang Carter Scholz (Javanese gamelan), 1999
Orchard (Javanese gamelan), 1999

NOTES

1. For photographs of the instruments and an introductory guide to the ensemble, see Neil Sorrell, *A Guide to the Gamelan* (London: Faber and Faber, 1990). In addition to the pitched metallophones, the gamelan includes a drummer who guides the ensemble, and may also include a vertical flute (the suling) and a two-string spike fiddle (the rebab). The number of players (and instruments) can vary by having the parts doubled by additional pitched metallophones.

2. Barbara Benary, "Directory of Gamelans in the United States," *Ear Magazine* 8, no. 4 (Sept.–Nov. 1983); Benary's list is reprinted in *Balungan* 1, no. 1 (June 1984; update: *Balungan* 3, no. 1 [Nov. 1987]). See also Vincent McDermott, "Gamelans and New Music," *Musical Quarterly* 72, no. 1 (1986): 16–27. Soedarsono, "Traditional Music in Indonesia, with Special Reference to Javanese Gamelan Music: Historical and Sociological Aspects," *Papers of the Fifth International Conference of Ethnomusicology* (Taipei: National Taiwan Normal University, 1993). For information about gamelan ensembles in the United Kingdom, see Neil Sorrell, "Gamelan in Britain: The Story So Far," *Balungan* 4, no. 1 (May 1989): 19–20. Among other centers of interest outside of Indonesia, we should mention especially Australia, New Zealand, and the Netherlands.

3. The North American Gamelan list (<http://www.glue.umd.edu/~satu/gamelan>) was assembled by Barbara Benary with help from Jody Diamond and others, and posted and maintained by Marc Hoffman, who recently turned over its administration to the American Gamelan Institute.

4. For example, Ben Brinner, "A Musical Time Capsule from Java," *Journal of the American Musicological Society* 46, no. 2 (Summer 1993): 221–60, and Marc Perlman, "American Gamelan in the Garden of Eden: Intonation in a Cross-Cultural Encounter," *Musical Quarterly* 78, no. 3 (Fall 1994): 510–55.

5. Among the many composers for gamelan in the generation younger than Harrison, we might mention Elaine Barkin, Barbara Benary, Philip Corner, David Demnitz, Jody Diamond, Richard Felciano, Daniel Goode, Laura Liben, Robert Macht, Larry Polansky, Jarrad Powell, Daniel Schmidt, Michael Tenzer, Wayne Vitale, and Evan Ziporyn. On Cage's "Haikai" (1987), see Michael Frascioni, "Interview: John Cage," *Balungan* 3, no. 2 (Oct. 1988): 19–23. Avant-garde gamelan composition by Indonesian composers is also gaining momentum, though in some genres the reverence for the ensemble's traditional cultural and religious role and the cultural reticence to focus on the individual composer have led to an emphasis on preservation rather than on the creation of new works.

6. Among the most noteworthy native teachers of gamelan at American universities in the 1960s and 1970s were K.R.T. Wasitodiningrat (Pak Cokro) at the California Institute for the Arts (CalArts), Undang Sumarna at the University of California, Santa Cruz, Sumarsam at Wesleyan, and Susilo at UCLA and later the University of Hawaii.

7. Daniel Schmidt, for example, recalls that when he introduced his own compositions to the Berkeley gamelan (which he directed), many members of the ensemble were decidedly unenthusiastic, and some refused to play the new works at all (Schmidt, interview with Miller, Nov. 28, 1995).

8. Harrison, interview with the authors, March 8, 1994.

9. Cowell had learned about gamelan music in the early 1930s. In 1931 he received a Guggenheim grant to study with Erich von Hornbostel in Berlin; while he was there, he studied South Indian and Javanese music with expert practitioners. (Steven Johnson, "'Worlds of Ideas': The Music of Henry Cowell," in *The Whole World of Music: A Henry Cowell Symposium*, ed. David Nicholls [Amsterdam: Harwood Academic Publishers, 1997], 57.)

10. Harrison, interview with the authors, March 8, 1994.
11. Particularly relevant in this regard are Colin McPhee, "The 'Absolute' Music of Bali," *Modern Music* 12 (1935): 163–69; "The Five-tone Gamelan Music of Bali," *Musical Quarterly* 35, no. 2 (April 1949): 250–81, and, to a lesser degree, "Eight to the Bar," *Modern Music* 20 (1943): 235–42.
12. Harrison, interview with the authors, March 8, 1994.
13. Ibid.
14. *Three Variations on a Theme (String Quartet No. 2)*; Harrison, personal communication, 1998.
15. Harrison, personal communication, 1998.
16. At the time, Harrison's knowledge of this Balinese form was limited to the few *gèndèr wayang* recordings available on 78 rpm records. He therefore was not aware of the less common form, *Batel*, which adds gongs to the *gèndèr wayang* quartet. Hence Harrison's use of gongs in the *Suite* is attributable entirely to his own imagination and predilection.
17. McPhee, "The 'Absolute' Music of Bali," 166.
18. Harrison, personal communication, 1998.
19. Harrison, interview with the authors, Oct. 21, 1994.
20. Harrison's passport shows arrival in Korea, May 4, 1961, departure, July 6; second arrival in Korea, June 28, 1962, departure for Taiwan in October.
21. A copy, in Harrison's beautiful calligraphic hand and dedicated to Mantle Hood, may be found in the Ethnomusicology Archive at the University of California, Los Angeles.
22. Harrison, interview with the authors, Jan. 13, 1994.
23. Colvig, interview with the authors, Jan. 13, 1994.
24. As long ago as high school, Harrison had built a marionette that attracted the attention of the local press. ("Pierrot Marionette Sent to Instructor," unidentified article from 1933 in Harrison's mother's scrapbook.)
25. The program notes for the premiere state that Harrison "became interested in the idea of a puppet opera while traveling in Indonesia and other parts of the Orient, where puppetry is a serious art form." Although the relationship of gamelan music to puppetry was of great interest to Harrison, this statement is not entirely accurate, since he only visited Indonesia for the first time in 1983. However, his travels to Korea and Taiwan in the 1960s did reinforce his interest in puppetry. *Young Caesar* was later recast for human actors.
26. See, for example, Philip Brett, "Eros and Orientalism in Britten's Operas," in *Queering the Pitch: The New Gay and Lesbian Musicology*, ed. Philip Brett, Elizabeth Wood, and Gary C. Thomas (New York: Routledge, 1994).
27. Harrison used still a third tuning in the harp for Caesar's soliloquy in Act 2, scene 11: the scale C-sharp, D-sharp, E, F-sharp, G, A-sharp, B, C-sharp, with the intervals in order being 10:9, 27:25, 10:9, 25:24, 6:5, 16:15, 9:8.
28. *La Koro Sutro* and the *Suite for Violin and American Gamelan* are recorded on compact disc (New Albion Records NA015). *Young Caesar* was rescored for modern orchestra, chorus, and soloists in 1988 and premiered in this form in Portland, Oregon. In 1999 Harrison finished a third revision of the opera in anticipation of a New York performance.
29. For a more detailed discussion of Harrison's tuning systems, see Leta E. Miller and Fredric Lieberman, *Lou Harrison: Composing a World* (New York: Oxford University Press, 1998), chap. 5.
30. Daniel Schmidt, interview with Miller, Nov. 28, 1995.
31. Pronounced "choke-row."
32. Schmidt interview.

33. For an interesting discussion of gamelan tuning practices as compared to Western concepts of tuning, see Perlman, "American Gamelan in the Garden of Eden."

34. For a fuller discussion of these tunings, see Miller and Lieberman, *Lou Harrison*, 123–25.

35. Widiyanto heard this tuning on Vincent McDermott's gamelan at Lewis and Clark College in Portland, which Harrison and Colvig had tuned as in Figure 8 (2) because of McDermott's love for the style of Surakarta. Harrison's own iron gamelan, Si Aptos, was tuned as in Figure 8 (1).

36. Perlman, "American Gamelan in the Garden of Eden," 539.

37. Daniel Schmidt, interview with Miller, Nov. 28, 1995.

38. Harrison, personal communication, May 5, 1999.

39. Harrison learned Cirebonese style from Allen Thomas in New Zealand, Elang Yusuf Dendabrata in Indonesia, and Richard North in California.

40. Vincent McDermott, interview with Miller, Aug. 15, 1995.

41. For a score and more extensive analysis of this work, see Leta E. Miller, *Lou Harrison: Selected Keyboard and Chamber Music, 1937–1994*, Music in the United States of America 8 (Madison, Wis.: A-R Editions, 1998).

42. An example (and analysis) of the second movement of the Piano Trio is given in Miller and Lieberman, *Lou Harrison*, 226–29.

43. The movement was originally placed second, but in his last revision Harrison reversed the second and fourth movements.

44. Harrison named this gamelan Si Aptos, honoring the town in which he lives.

45. Bruce Ziff and Pratima V. Rao, *Borrowed Power: Essays on Cultural Appropriation* (New Brunswick, N.J.: Rutgers University Press, 1997), chap. 1.

46. Harrison, *Music Primer* (New York: C. F. Peters, 1970), 129.