2008

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Native American Flute Meditation:

musical instrument design, construction and playing as contemplative practice

by Dan Cummings

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Introduction

The two images on the preceding cover page represent the two traditions which have most significantly informed and inspired my personal flute journey, each in its own way contributing to an ongoing exploration of the design, construction and playing of Native American style flutes, as complementary aspects of a musically-oriented meditation practice. The first image is a typical artist’s rendition of Kokopelli, the flute-playing fertility deity who originated in the art and folklore of several Native North American cultures, particularly in the Southwestern region of the United States. Said to be representative of the spirit of music, today Kokopelli has become a ubiquitous symbol and quickly recognizable commercial icon associated with the Native American flute, or Native music and culture in general. Although comparatively little can be said about ‘Native music’ definitively and as a whole—the very elusiveness of such a systematized understanding attests to the great variability among the distinct tribal traditions that comprise the category—when we shift our attention away from detailed formal analysis, there does seem to be a common spirit of immediacy and purpose with respect to this music and its instruments that one can feel and describe in quite personal terms. This spirit, felt as a heart-connection to the sound from the time of my first visceral, embodied encounters with Native American flute music, combined with the intellectual knowledge I’ve gathered on contemporary and traditional methods of design and construction, has been my guide and jumping off point into the study of the flute.

The second image depicts a tengai basket-clad komuso, a wandering monk of the Fuke sect of Zen Buddhism who plays an equally emotionally resonant pentatonic flute, the Japanese shakuhachi. Like the Native American flute, the shakuhachi is end-blown rather than transverse (although its sound mechanism differs in design from most
North American Native flutes), and shares its basic 5 hole, minor pentatonic scale. Thus, the melodies heard in the traditional repertoire of solo shakuhachi pieces can probably be roughly produced by the Native American flute, as could Native songs be reproduced on the shakuhachi. The eerily beautiful, often plaintive and haunting quality of the two flutes, and the musical traditions from which they grew, seem almost to echo or mirror one another across the Pacific Ocean. This musical resemblance has caused many aficionados of the Native flute to become interested in the shakuhachi, and vice versa; my own interest extends even further to what I perceive as a spiritual affinity between the two traditions. While the function of Native flutes as a tool for meditation is poorly documented at best, there turns out to be a comparative wealth of information available about the flute playing Zen “monks of emptiness” and their practice of playing shakuhachi as a vehicle to enlightenment.

Many instrument makers and players I have come into contact with through Native American flute communities locally and online seem to share my own feeling of deep spiritual connection to this type of flute, and to quite naturally regard their playing (and woodworking) as a form of meditation—at least in a contemporary context, if not a historically grounded practice associated with any particular tribe. I have taken this intuitive connection a step further, by studying and exploring the possible applications of the more systematically developed aspects of suizen, or “blowing meditation” practices of the komuso to my own experiences with the Native style flute.

Also implicit in my investigation has been a personal connection to the philosophy and practices of Buddhism and a keen interest in the varieties of contemplative practice, or meditation. In considering which phases of my engagement with the Native American flute (NAF) should be counted as meditation and which ones should not, I quickly realized that no single part could ultimately be separated from the process as a whole, nor even from the context of my everyday life. As indicated by the
venerated Zen master Thich Nhat Hanh, it is better to resist the urge to categorize our time into periods of ‘meditation’ and ‘not meditation,’ and also to look for the opportunity to meditate within all of our life pursuits. In *Peace is Every Step*, he writes, “We have so many compartments in our lives... we must practice in a way that removes the barrier between practice and non-practice... Mindfulness can penetrate the activities of our daily life, and not just be a description of something far away” (35).

Flute making and playing have become inseparable and vital components of a seamless process for me, one whose various stages can all be practiced with mindful attention to their own unique qualities. In the course of exploring the untapped contemplative dimensions of these experiences, I have also developed an increasing awareness and appreciation of their value in the context of my daily life and routines, especially as they begin to take on restorative, energizing roles that can serve to prepare my mind for the day’s other activities.

Chi Kung master Lam Kam Chuen points out that “All fields of human activity—physical, mental and spiritual—depend on the power of our energy. Properly concentrated, it can generate tremendous creativity and dynamism. All human beings are capable of manifesting far higher levels of energy than is normally assumed” (9). Chi Kung is an ancient Chinese practice involving the systematic cultivation of human energy through natural body movements and postures combined with dietary guidelines and other integrative lifestyle choices for optimizing health; ultimately it is the coveted art of balancing and sustaining ourselves through the day so as to come out of it with a net gain in energy at the end rather than a net loss. When we are already being drained by our daily schedules and routines, how can we hope to function at our maximum level in any one of our activities? Since doing any task well requires having plentiful energy for it, over the centuries Taoist and Buddhist monks, natural scientists and practitioners of traditional Chinese medicine sought to “determine how best to sustain, replenish
and enhance this vital energy, known as Chi” (9). Chi literally means “breath,” but by extension covers the entire sensation of energy pervading the body that we can feel as being generated by the vital rhythm of respiration, especially as it is consciously channeled in the most efficient and effortless of ways. In fact, the human being is itself thought of as a field of energy, so in a way the breath can be understood as simply a form of currency which animates our “body, mind and spirit” by means of its continuous exchange with the surrounding world, flowing freely between the inner and the outer (9). The refinement of the art of facilitating this flow is said to result in the ability to raise the body’s energy to dramatic levels.

The prospect of an increase in sustained creative output and feelings of vitality drew me to the practice of chi kung as a possible supplement and close relative of my flute playing. The intimate connection with the breath found in both suggested a link to me that was confirmed in descriptions of the suizen shakuhachi practice which emphasize correct breathing and exercising precise control over the flow of energy from centers in the body that derive from the Chinese system. Although not all of my flute meditation practices are directly related to chi kung, I find the common purpose of restoring, sustaining and building up energy a useful criterion by which to understand them all as forms of meditation. That each activity serves a revitalizing function in some way is what attracted me to them in the first place, and is a good indication of the efficacy of the practice, which does tend to vary from one stage of the flute making process to another. Master Chuen’s descriptions of the benefits of chi kung practice could equally be applied to almost any contemplative discipline: as you become more adept at cultivating chi, he says, “your mind becomes alert. You open up to whatever you experience and your nervous system becomes calm... As your practice deepens, you develop greater sensitivity and awareness. You are open to the natural environment and to the constant play of
energy around you” (18, 26). Meditation in essence can be defined as the *expansion of awareness* in any activity. The various meditation techniques can then be classified according to their focus: for some the practitioner maintains an “open” focus on the field of experience as a whole, shifting the attention naturally and spontaneously between the layers of perception, thought and feeling that pop up and simply letting them all go (also called mindfulness); other techniques focus the attention on a specific object of experience, such as the breath or a sound; still others combine open focus on the background of experience with concentration on specific objects, alternating between the two. Throughout the various stages of designing, constructing, tuning and playing Native style flutes, I incorporate all three types of meditation techniques to varying degrees.

**Native American Flute (NAF): History and Construction**

From the oral traditions and ancient pictographs of the various Native North American tribes, we know that the type of flute which has evolved into the modern Native American style flute has been in existence, in one form or another, for at least 2,500 years (Nakai 1). This flute is known in the modern world for its distinctive sound (the clear, crisp tone of a well constructed simple woodwind) and scale (typically concert-tuned to an evocative, haunting minor pentatonic), and to the musicologist, for its signature, built-in sound-creating mechanism called the true sound hole, similar to the modern recorder’s fipple, which directs the player’s air through a narrow channel across a precisely aligned 45° splitting edge which produces the sound. On top of this narrow wind channel, called the flue, sits the NAF’s familiar wooden “block” (also bird or fetish), a small hand-carved sculpture often in the form of an animal, which defines the “ceiling” of the channel and is bound to the flute by strips of leather. Modern makers often will attach feathers and beads to the ends of the strips, artistically combine rare and exotic hardwoods within the same piece, and add other finely worked
materials in the finishing touches such as turquoise inlays or pieces of deer antler. Frances Densmore notes that included among traditional decorative materials were “feathers, native paint, strips of hide in fringes or tassels, fur, beads,” and “bright cloth or yarn,” but also observes that any decorative material making contact with the surface area of a flute has the potential to dampen its tone (94). The heavily ornamented native flutes sometimes seen in museums are not necessarily representative of most of their simpler cousins, nor are they always playable. I choose to be minimal in my own decorations, preferring an aesthetic form that grows primarily out of musical function. This is in part because I choose to glue down the simple “blocks” I make to fit my flutes rather than making them removable, rendering the addition of leather strips and their adornments unnecessary and redundant. I do, however, enjoy practicing the native art of etching the wood of a flute with a heated iron, using as my tool the modern electric woodburner. The images I create through this process are usually derived from my own nature photography, and can add a more artistic dimension to the finished product without compromising the sound or becoming unwieldy.

Although I have experimented with various kinds of hard and soft woods, over time I have found most of my favorite woods for flute making to be in the cedar family. It somehow feels appropriate to use the materials traditionally available in the Northeastern region where I live, such as aromatic cedar and sassafras, which have the added benefits of a pleasant fragrance and a softness which is easy to work.¹ Flutes that I’ve crafted out of Eastern Red (aromatic) cedar and finished with natural oils and beeswax should retain their distinctive scent of New England forest throughout their lifetime. Native flute making was my introduction to woodworking in general, and my limited knowledge base and financial

¹ Galen Johnson offers the poetic description of that moment of cutting into a board when we first meet its fragrance as a “sacrifice” which “brings forth a resurrection of the scents of the forest” – it is to him that I owe much of my inspiration both in getting involved with woodworking in the first place, and in writing about the experience (65).
means have prevented me from exploring the kinds of exotic woods that many more experienced flute makers are fond of; yet part of me feels that this too is an unnecessary part of the experience. Just as the typical flute was not heavily ornamented with non-functional components, Densmore reminds us that “in making his musical instruments, the Indian used the materials he had at hand... the materials varied with the environment of the tribes” and would have included wood, bone, river cane/bamboo, shot, pitch, sinew, leather, bark and glue (94). The most commonly cited woods for instrument construction include cedar, ash, box-elder, sumac and hickory. Douglas Spotted Eagle writes, “Nearly all nations of this continent have historically had flutes, either of their own manufacture, or obtained from other nations. Many of the eastern nations used birch bark or willow with the wood removed while the sap would allow the inner section to be slipped. The Seminole created flutes of bamboo, without a manufactured stop, using the natural ‘breaks’ [nodes] found inside the shoot. Yuma and other southwestern nations used cane much in the same way as the Seminole... Kwakiutl and Tlingit’s used dual tone reed whistles, as did many other Northwestern nations” (27).

Although I make no fuss over following the traditional construction methods or designs of any particular tribes, the “dual toned” instruments mentioned by Spotted Eagle have become a special interest and concentration of mine as a flute maker. Typically consisting of one chamber with finger holes and another without, these flutes are called drones after the musical concept of a continuous or repeated note. Usually in the form of a second fundamental note played under the melody, the added layer of sound greatly enhances the visceral quality of the notes in the basic scale. Such flutes are found among the Aztec and other South- and Central American tribal cultures, albeit more commonly made out of clay. That anyone could make a double-chambered flute out of any type of wood using only simple hand tools and wilderness materials is truly amazing to me, considering all of the
firewood I’ve personally produced in failed attempts to make even single-chamber “branch flutes” by traditional methods, not to mention all of the flutes I’ve had to abandon despite the modern luxuries of mathematical precision inherent in standardized lumber sizes and power tools. These setbacks only serve to deepen my respect for the profound ingenuity and resourcefulness required to resolve the woodworking challenges faced by countless generations of my Native flute-making ancestors. This, if anything, is testament to the need for a meditative clarity, patience, and precision in the historic practice of this art form.

What the woodworking process would have actually felt like to a Native American practicing his tribe’s traditional method of flutecraft is thus difficult for me to say in terms of my actual lived experience, but an approximation could be made given enough time and resources. I once salvaged some aromatic cedar branches that I discovered near the shore of the Queen’s River in my home town, and attempted to make flutes out of them using only hand tools that could more closely approximate the experience of the work that needed to be done in the traditional method. These tools included a hacksaw and a knife for splitting the branch in half vertically, some hand gouges for carving material out from the heart wood of the branch to the inner layers of the bark, and some clamps—all modern materials, really. It is hard to even find much information about the exact tools used by native instrument makers, let alone catching a glimpse of the level of detail in technique involved that could only truly be acquired by the direct observation of a master craftsman.

Densmore sketches the traditional process as follows. Starting with a supply of soft, straight-grained wood such as cedar or sumac, “a straight, round stick of the wood is split lengthwise into two equal parts. Each half-cylinder is then hollowed out, except near one end [between the mouthpiece and fingerholes] where a bridge is left, so that when the two pieces are put together there is formed a cylindrical tube open at both ends and throughout its length except at one point where the
bridges form a solid stopper.” The block is “so fashioned and slightly cut away on its lower surface that it covers the upper opening and directs the air in a thin sheet downward against the sound producing edge... to form a suitable ‘lip’ for the pipe, a piece of very thin birch bark or other substance... is placed between the tube and the block. The junction between the birch bark and the tube is sometimes made air-tight by a ‘gasket’ of silk cloth; often the joint is closed by resin or other cement. When the flute is completed, the joints along its length are sealed with resin or glue and the parts are held together by several windings of thong or other material. The block is held firmly in place by a winding of thong” (95-6).

**Modern NAF Construction: Woodworking as Contemplative Practice**

The methods of most contemporary craftspeople making Native American style flutes do not differ too considerably from the traditional method outlined above, as the basic physical structure and mechanism of the flute itself remain more or less the same as they have always been. Probably the most significant changes to earlier design have simply been in the ways of tuning the instrument. No method can claim authority over any other; I will merely attempt to sketch my own and to explain how I have approached each step as an opportunity for meditation and mindfulness practice. Underlying the whole woodworking process is an implicit reminder that what I am engaging in is a form of mental rest in the midst of physical action, an opportunity to let go of thoughts and the day’s concerns through concentration on action, becoming absorbed in the work for its own sake. This is characteristic of the Hindu practice of karma yoga, which involves remaining focused on performing one’s action, while simultaneously detached from the results. In other words, one is not invested in the fruits of one’s deeds because the deeds are valued in themselves. The action is not only a means to an end but an end in itself. In Japan, this would be called “just doing” in the same way that *zazen* sitting meditation practice is called “just sitting.” Any action
can be taken as the object of meditation if we throw ourselves into it with this “just doing” spirit. All of my woodworking tasks are like bells of mindfulness offering this practice of filling the busy mind with the raw experience of pure action performed for its own sake; and it behooves me to awaken to these reminders to avoid the frustration that inevitably occurs when I make mistakes on flutes that I’ve already spent hours of labor on. Instead of allowing them to get me down, I try to view these mistakes as valuable experiences in and of themselves, from which I can learn something new, refine my methods, and practice the art of letting go of results.

Rather than starting with a split tree branch to gouge a flute bore out of by hand, most flute makers today begin with a 1” board, cut to the dimensions needed for a flute with an average length to diameter ratio of 18:1. Flutes generally range from a high E with a bore length of 9” and an internal diameter of ½”, to a low A at 26½” in length and a diameter of 1½.” Added to the measurement of the predicted bore length is 2-3” for the mouthpiece, 2-3” for the slow air chamber (SAC), and 1” for the plug separating these from the bore. It is also advisable here to add 1” extra to the foot of the flute, as it is always easier to correct for calculation errors by subtraction of wood from the end than by addition. This total calculated length is then the measurement the board is cut to, with the lengths of the individual parts marked off by straight pencil lines across its width as reference points for routing.

![Fig. 1: The anatomy of a flute](image)
This board is then placed on a router table with a semicircular bit set to bore out a half-cylinder of the appropriate internal diameter for the flute in question. Two of these cylindrical chambers are cut vertically into the board in sequence with a 1” gap between them: the smaller of the two is called the slow air chamber (SAC), where air pressure will be built up from the player’s breath, while the longer chamber is the bore of the instrument which will include the finger holes. The mechanical work of the router can in two minutes replace the traditional work of carving out the bore in a tree branch by hand, which would normally take up to a day (or in my case, several). Yet this work too requires careful attention to technique, and safety dictates a high degree of alertness and mindful concentration, especially over longer periods of time, as when a series of flutes are all being routed in a large batch.

Working with the router table involves spending some long periods of time on one’s feet, standing in a single spot. After several passes of cutting the bore and SAC on one side, the board still has to be turned around relative to the router fence to mirror these same cuts on the other side. The two bore-halves will later be joined to make the complete body of the flute; routing them on opposite ends of the same board without moving the fence ensures that they will align well. All cuts must be made relatively slowly to avoid burning the wood too much, and for the sake of safety when cutting with the large carbide router bits of 1” diameter or greater, just inches away from your fingers. I always try to practice the awareness of all parts of my body when I use the router, especially keeping track of where my fingers fall on the board in relation to the spot where the router bit is spinning, unseen underneath. But particularly during the longer periods of standing, I also like to cultivate awareness of my stance and the balance of my weight between right and left feet. Often when using the router, band saw, or belt sander, which are all slightly higher than waist level on my workbench (or, for that matter, anytime
when standing still in one spot for an extended period) I end up noticing that most of my weight has shifted to one side or the other. There is usually an element of tension in this kind of stance though, and the body eventually tries to alleviate it by switching the weight over to the other side; but of course this temporary solution only shifts the imbalance to another location, where it will begin to build in tension again.

The basis of all chi kung exercises is known as the Wu Chi position, the simplest and yet most profoundly beneficial standing exercise that involves standing with feet shoulder width apart, knees slightly bent, spine straight, and shoulders relaxed, with weight distributed evenly across both legs. All tension is released into the pose as you relax your muscles and allow the skeletal structure of your legs and spine to naturally support all of your weight and hold you up. After only five or ten minutes of standing in this posture, the feeling of an increase in energy is experienced, as if it had traveled up the legs into one’s body from the earth. The practice is to open up the body’s channels, facilitating this build of energy by taking up a stance which allows everything to flow naturally and uninterruptedly. That is why I always try to be conscious about finding the most effortless way to stand while working, balancing my weight in the most efficient way for the task at hand, while simultaneously preserving my level of stamina by minimizing the amount of energy expended unconsciously on maintaining an unstable posture. “As you become stable in the Wu Chi posture,” notes master Chuen, “your internal energy naturally seeks out accumulated tension and underlying imbalances throughout your system” (12). I find that when I bring my focus inward to the state of my body in the present and its spatial relationships to the work at hand, this expansion of my somatic awareness naturally enables my muscle groups to harmonize with each other more quickly in their common effort to perform the task in the most efficient and direct way possible. This
usually involves an application of the Wu Chi exercise, literally “standing like a tree,” in front of my workbench.

While this aspect of “contemplative woodworking” involves the use of specific chi kung techniques related to facilitating the flow of precisely controlled movements and to cultivating energy through stillness, there are other techniques which I apply, consciously or unconsciously, to meditation in the workshop. The general feeling I get from the endeavor is one of mindfulness, shifting the focus of my awareness from internal body states and balance to my field of perception as a whole, and back again to specific objects. When I’ve got a machine running and wood in my hands, it’s not hard to become absorbed in the sensory depths of the experience: the rich smells that can emerge from some of the woods, the intricate grain patterns and sawdust piles accumulating in the visual field, the loud mechanical sounds monopolizing the attention of the hearing, the smooth and rough wood textures that the hands continually pass over in their exploration of the tactile world—and the soothing sense of vibration that crosses the three realms of hearing, sight and touch. While attention is focused primarily on safely maintaining technique and constant pressure on a piece that is being routed, cut, or sanded, focus also remains “open,” and the awareness may shift freely between these objects of sight, sound, smell and touch, from one perception to another without becoming ‘lost’ in any of them or in the thoughts that naturally arise in the middle. The practice is to continue to stay in the here and now, spontaneously shifting focus the moment something changes, but all the while keeping the focus anchored in the present, and spread out intently across the field of perception. This ‘watchfulness’ is also a readiness, and is the essence of safety in the workshop in the event that something starts to go wrong.

Before the two halves of the flute body can be glued together, one half must also be routed on top with a flat bit to a very shallow depth of about 1/16”, to create the narrow air passage on top of the flute called
the flue. This small but vitally important channel sits directly over the plug between the SAC and the bore, and will serve to connect the passage of air between the two. A ¼” hole is drilled at a 45° angle through the mouthpiece end of the flue into the SAC, forming the slow air chamber hole. The True Sound Hole (TSH) must be more precise, so a thin vertical slot is made at the other end of the flue with an 1/8” drill bit, opening straight down into the bore. This slot is filed smooth, the board is turned over, and a very precise 45° angle “ramp” must be cut into it with a chisel from the inside of the bore. This ramp is also filed down to a smooth and even surface, for it is crucial that it be as flat and frictionless as possible to produce a clear tone. The idea is for the player’s breath to be pressurized in the SAC, then pushed through the narrow passage under the block in a thin, concentrated stream of air that is split precisely in half when it encounters a sharp edge of wood that is positioned at about 45° directly in front of it. To ensure that the splitting edge is properly aligned with the stream of air, it is usually necessary to bevel the top of it slightly, so that a small angle on top meets the larger ramp below at the vertical midpoint of the flue, or an approximate depth of 1/32”.

Fig. 2: Detailed cross section of sound mechanism
The work of shaping the TSH and ramp through careful chiseling and filing can be tedious, so it is important to remain in a calm and unhurried state of mind to avoid rushing the job. One must know when to stop and when to keep going, so as not to leave work unfinished or to remove too much wood in the effort to get it perfect. I like to sit on a meditation cushion in the basic zazen posture, with my legs tucked into a half-lotus to lock them firmly in place below me. Although this can feel a little uncomfortable at first, the stability of the posture actually helps to avoid much of the tension that can build up later in other sitting positions. After some experience with this, I have found that I prefer putting up with some lower body ache over a period of time to the greater imbalance that becomes evident when changing position frequently. As in the Wu Chi standing exercise, the purpose is to minimize the amount of underlying tension in the body so that the energy can flow unobstructed while working with the hands. Here, too, if one begins with a solid foundation in the legs, stability follows in the rest of the body, and is transmitted to the work as well. In fact, the solid base in itself is already sufficient to initiate a state of meditation, as it seems capable of manifesting a feeling of mental spaciousness and repose of its own accord. This is why in Zen the practice of meditation is called “just sitting”—not just to obviate any sense of needing to make an intentional effort or perform some kind of special activity, but also to emphasize the primacy of the physical posture of sitting itself, as the means to find one’s center for the liberation of body and mind.

Once the sound mechanism has been thoroughly worked from the inside and out, the inside of the flute chambers can be finished with a nontoxic waterproofing sealant, such as Salad Bowl finish, and the bare walls of the top and bottom halves of the flute can be glued together and clamped overnight. When dry, I trim the sides with the band saw, leaving an 1/8” wall thickness for the flute chambers on all sides. I then drill the
hole for the mouthpiece, connecting the SAC to the outside air. It is at this moment that the flute is capable of producing its first sound, and I test it by holding a flat block of wood over the flue and blowing through the mouthpiece. If the tone sounds airy or does not play I can go back to work the TSH some more, but it is difficult at this stage without access from the underside; hence it is here that I need to be prepared to abandon the fruits of my labor in good karma yoga fashion. The natural tone of the TSH makes or breaks a flute, and sometimes it seems impossible to locate the source of a problem in the completed sound mechanism. If such is the case, one more stick must be thrown into the scrap pile for firewood, and if it had not felt clear to me by that point that all of the preceding work on the flute has been done for its own sake, I am probably in for some frustration. Nevertheless, most of my flutes survive this test, and the good ones are ready to be rounded on the belt sander. The mouthpiece is shaped in the same way, the whole flute body is sanded smooth by hand, and the finished block is glued in place. When the flute has dried from this last step, it is ready to be tuned.

**Tuning the NAF: Methods and Issues**

The tuning stage is the point at which the line between wood-working and music starts to be blurred, and acts as a transition between flute making meditation and music meditation. But before one begins this stage in the first place, the important question of *how* to tune the instrument arises. Carlos Nakai relates the frustration he initially faced as an aspiring professional player of Native American flutes in his early years of trying to discover the one “true” or “original” tuning, presumably hidden somewhere back in the collective memories of Native America’s oral traditions, to deliver the “authentic” voice of Native American music to contemporary ears. He eventually came to realize that his search for a single, authoritative version of the Native flute scale was in vain. “Reliable historical documentation, culturally specific teachings and knowledge about the traditions of flute-making, performance and
philosophy were largely non-existent,” he writes (2). Soon after he began looking for it, he realized that the information he craved about the “standard tuning of old” simply did not exist: no one seemed to know what it was, or else they disagreed. The colonization of North America, and official government suppression of native culture over time forced many tribes to abandon significant portions of their oral traditions to adapt to the rapidly changing conditions of the world they were living in, and the use of the flute was lost by many tribes during this time. Then, following the civil rights and ethnic pride movements of the 1960s and 70s, the native flute began to reappear as an expression of roots revival in native culture, while “people of all cultural backgrounds were drawn to its pure, timeless sound.” The problem with respect to preserving traditional tunings of the instrument at this time was that “while more flute makers were beginning to craft instruments to meet this demand, a clear methodology... was lacking” (Nakai 2).

Not all instrument makers at this point had access to traditional knowledge of native flutecraft, as they came from varied tribal backgrounds. Most probably determined the tuning they would use by following the example of another flute maker, but there were many examples to choose from. Compared with today, when only a few of the more popular tunings dominate the market, there originally may have been as many variations as there are conceivable ways to make a simple (usually pentatonic) scale by selecting 5-6 notes out of the twelve in an octave, and spacing them out equally in a 5- or 6-hole finger arrangement. There are more ways to accomplish this than one might think, and not all flute makers choose their intervals consciously; some tune intuitively, or according to the ergonomics of finger placement. Nakai explains how all of the individually-crafted instruments he has owned have had their own idiosyncrasies “depending upon choices of the individual maker. Many problems of discerning pitch, pitch range, fingering patterns, embouchure, etc., beset me as I attempted to develop
a technique that would adequately serve me in playing any Native American flute by any maker... needless to say, my early flute days included a fair amount of consternation and frustration in having to memorize a number of separate and seemingly unrelated finger patterns and scales” (2-3). Nakai even believed for a time that some of the incompatible scales he was coming across must have been “wrong,” since he did not yet realize the fallacy of the assumption that there had to be a single “correct” tuning out there amidst all the modern, historically inauthentic ones. In truth, the search for such a master tuning, one that could completely represent the melodic structures of native music across the continent, is about as futile and misdirected as looking for the “one true language” of Native North America. Such a thing simply does not exist.

Robert Gatliff, author of the most comprehensive essay on the history of NAF tunings I have come across, points out that “researchers have tried to find a consistent tuning for the historic flutes with no success.” He argues that these instruments do not appear to be tuned in the modern sense, but that “we occasionally find flutes that approximate a portion of a modern scale,” and call the tuning by the name of that scale, eventually forgetting that the original maker had not intended it as a rule. Our musical preconceptions force us to think in terms of standardized pitches and scales with predefined intervals, and this distorts our perception of musical systems other than our own—especially when they do not appear to amount to “systems” to begin with—because we tend to describe them in terms of what they most closely resemble in the music theory of the predominant European system, rather than engaging them on their own terms. When the Native American flute started to become commercially popular, modern flute makers responded to the market pressures of selling to the general public and musicians, meaning that concert-tuned flutes soon became the norm. Gatliff contends that it is because of the popularity of minor
pentatonic flutes (currently more common than any other tuning) that there is now a modern myth that Native American flutes have always been minor pentatonic. “Whether it’s pentatonic mode plus a note, or Dorian mode minus a note, or the six note Raga Mahohari mode, such labels are attempts to contemporize the Native American flute,” he writes. “So flutes that are promoted as concert tuned, pentatonic, diatonic, or chromatic are modern tuned instruments.”

The trend of crafting instruments that utilize the basic form and sound mechanism of the NAF, but which are tuned to the standard of European pitch, is not a bad thing in itself; a flute designed to play in tune with the ubiquitous western instruments we find around us (like the guitar, bass and piano) is a more versatile instrument. But this practice of “contemporizing” NAF tuning obscures the fact that the intervals being used now often are not an integral part of historical Native flute design in the same way as the bore and fipple construction are, and that the traditional intervals that would have been used with that same design are not necessarily known. In fact, it might be more accurate not to speak of “traditional intervals” at all. It may not even be quite as accurate to say that we have such a thing as “traditional tunings” as it would to say that we have a broad sampling of many individual, pre-colonial instruments, all of which are uniquely tuned. Any consistency to the intervals used is due mainly to consistency between the flute makers’ body measurements—for we know that this is primarily how they did tune their instruments.

In Frances Densmore’s study of the flute, she observed that Native Americans in all tribes questioned “say that the fingerholes in a flute are spaced in a manner convenient to the player’s hand, not by any fixed rule” (97). This means they are arranged for ergonomics and ease of playing: the system by which Native people tuned their flutes was literally a “rule of thumb,” leaving room for natural variation according to the way a maker/player’s digits tend to fall on the wood. This is one of
the methods that I use—tapping my finger tips on the flute body a few times to loosen up the muscles in my fingers, and try to let them fall into a natural arrangement on their own without looking directly down at them. This keeps me from unconsciously positioning them to line up with a previously-calculated finger hole spacing I already had marked off on the flute. The difference between the earlier predicted spacing and the more comfortable spacing is then recorded by looking at where my fingertips naturally fall in several repetitions of this “blind” test, and marking them in pencil as well. Fingerholes can now be moved vertically up and down to accommodate for more comfortable positioning, but only within a certain range that is limited by hole sizes. For a hole to be moved down and remain at the same pitch, it must be made larger, while a hole moved up would have to be correspondingly smaller. If a hole is made too large it will become hard to cover the whole thing with the pads of the fingers to make an airtight seal; too small, and it can become equally uncomfortable to play when a finger starts to have trouble finding it by sense of touch alone. Since the pitch produced by an open finger hole is co-determined by its distance from the foot and its diameter, only a limited range of pitches can be obtained from a hole at any given position, or desired size. This is because a player’s fingers can only reach so far, tend to comfortably arrange themselves in a fairly restricted shape on the flute body, and can only cover so large a hole without letting air escape. And due to the acoustic properties of the instrument, finger holes also fail to produce a tone at all beyond certain parameters of size and position—e.g., holes made too big or placed too close to the fipple will shorten the effective bore length to a point outside of its playable range. These restrictions generally prevent the maker from tuning to musical scales with intervals too close together or too far apart, for these translate directly into uncomfortable finger spacings that are too narrow or too wide—while to space them more comfortably would mean to alter their size beyond the practical range.
The scales that can be most easily produced with the least deviation from the acoustical and ergonomic guidelines for tone hole placement, then, are the pentatonics. The intervals used have never had any exact and universal consistency to them: interestingly, they have been postulated to derive in part from the vocal music traditions of each tribe, and depending on the geographical region, even the number of finger holes can vary all the way from four up to seven (Spotted Eagle 27). But generally, the number would have been five or six, and their most straightforward arrangement would dictate intervals that translate into something close to one of our modern pentatonic scales, with all notes placed (approximately) either two or three semitones apart from each other on the chromatic scale. There are a number of different ways to arrange intervals like this (many of which simply choose a different fundamental note within the same repeating sequence), but nearly all arrangements fit the criteria for the sense of “pentatonic” that implies five notes spaced fairly evenly across the octave, with no notes closer together than a whole tone.

In fact, it has been suggested that the pentatonic style of tuning actually found its origin in music from the unpremeditated act of making or picking up a hollow tube and cutting holes where the fingers of one hand happened to fall to make it sing in different voices. Hazrat Inayat Khan, the Sufi mystic and master musician, asserted that the power of things derived directly from nature in this way is much greater than things that have been significantly influenced by human beings to bring them into align with a conceptual structure. He applied this philosophy to music, and I find it echoed in my “minimalist” approach to flute design. Indeed, there is something mysterious about the intrinsic power and expressiveness of the pentatonic scale to the human ear, especially considered in light of its spontaneous birth in the very contours of the human hand when placed on a resonating tube. “Some say that the origin of the scale of four notes or five notes lies in the natural instinct
that man shows in his discovery of instruments,” writes Khan. “It seems natural that man took a piece of reed from the forest and made in the heart of that reed four holes in places where he could easily put the tips of his fingers – the distances of the holes corresponding to the distances between the finger tips – and then one hole below… this scale of five notes comes naturally when a man places his hand on the reed” (61).

It had been discovered by Native American flute makers that another method of determining the “natural” hole placement to consistently produce the same type of scale was to develop a system of measurements using their own hands. From what I have consistently heard, the most typical systems seem to involve cutting the whole flute to arm length, starting the holes a fist width away from the fipple, and then placing each of them a thumb width apart. There are many variations on this method. In Nakai’s account, “combinations of arm length with or without palm and/or finger length, the width or length of the hand, thumb width, digit width or the lengths of any other fingers of the hand contribute to the template of each flute maker, thereby making each flute a personally crafted and arbitrarily keyed instrument” (10). A general preference was also for finger holes to be of equal size and aligned in a straight line, equal distances apart. It should be noted here that, while these measurement systems established a degree of standardization in the flute tuning process, the standard was not an external one of pitch, as in Western music, but an internal regularity particular to each flute maker. As a largely solo instrument, the NAF was not tuned to any external standard of “concert pitch” until very recently, and could typically be described as tuned to itself, dependent more upon the organic qualities of the branch and maker’s body than upon conceptual and mathematical calculation of intervals. Tuning was more a physical activity than mental—simply another part of the visceral experience of working a piece of wood to produce sound. Even to the extent that modern acoustical science and woodworking technology allow much
greater theoretical precision in the calculation of hole spacing and size for the desired intervals, naturally fluctuating variables such as air pressure and temperature prevent the maker from ever gaining absolute control over the final outcome. This has provoked Nakai’s observation, “No two flutes work exactly alike, even those made by the same maker” (10). I can confirm this in my own experiences with attempting to discover the trick to making my flutes work alike; and even those makers whose craft is more refined than mine would surely say the same thing. Tuning remains, inescapably, an organic process.

Modern instrument making offers not only the tools to tune roughly to predetermined frequencies, but also a set of standardized frequencies to tune to for accompanied play, found in the twelve note equal-tempered system of the piano. This presents a choice to the contemporary NAF maker: to stay true to the more intuitive processes of crafting a solo instrument in the traditional manner, or make a standardized product that can be played with other equal-tempered modern instruments. In fact, Gatliff classifies three general approaches to the problem: “The traditionals try to respect the uniform spacing and size of holes, although some notes may only be approximate. The moderns try to support an extended scale that is much closer tuned to the modern ear. The easies try to make flutes that are easy to play, although this may sacrifice the range of notes possible… flute makers struggle to find their place between these three extremes.” All three have a certain marketability and appeal, though it can be difficult to balance them. In terms of which may be considered the most “authentic,” my feeling is that as long as you know why you’re doing it the way you are and fully understand the alternatives, that is the most authentic approach for you at this moment, regardless of how close it may be to any external tradition or standard.

Given the multiplicity of tunings possible in the modern sense, and more fundamentally, the organic nature of the tuning process itself that
makes each instrument unique, Carlos Nakai eventually realized that he had to abandon the idea of a single, authentic tuning for the NAF, and began to think of it as simply “a uniquely crafted and arbitrarily-keyed sound sculpture that shares its basic configuration with the most primitive and most technically developed flutes throughout the world” (3). This is much in line with my own thinking on the subject. Without any disrespect towards Native American flute tradition, I honor the ingenuity of its sound mechanism and design, while using its basic form as a vehicle to explore the variety of tuning options the world of music has to offer. Up to this point, I have tuned flutes in minor pentatonic, major pentatonic, the Japanese hirajoshi scale, a five note version of the mixolydian mode, a few other pentatonic scales I have no name for, and a variety of the above in just intonation rather than equal temperament. My interest in such “alternative tunings” is somewhat on the fringe in the NAF making community, but it is in part through exploring this interest that I have been developing my own sense of authenticity and originality as an instrument maker.

Nakai’s realization that the NAF is essentially just a sound sculpture without universal standards for tuning and construction provoked a larger realization about the nature of native music: “the flute forced me to confront my heretofore highly idealized self and the farce of enforcing strict conformity and inflexible rules (perhaps I’d been infected with the same colonial attitude that confused early ethnographers in their attempts to legitimize the wide spectrum of indigenous native music in North America)” (3). The “colonial” mindset referred to is that of looking at an indigenous culture from the standpoint of an industrialized society that values standardization and methodical understanding, so that viewing its music through the lens of the highly-elaborated, rule-based European system, the ethnomusicologist (whose philosophical bias is betrayed by the title alone) looks for the rules in the new forms of music he encounters—indeed, tacitly assuming that there should be
consistency, and devaluing those forms which appear not to have it. Unfortunately, this devaluing usually extended so far as criticizing songs that could not be coherently expressed in the conventions of European musical notation and equal tempered tuning (so pervasive by then that it was scarcely perceived anymore as one alternative among many), even if the songs in question followed their own internal logic outside of these conventions. For most traditional NAF music to be expressed in “standard form,” the notation would have to be modified, for as Nakai notes, the natural scale of each flute is totally outside the system of European diatonic major scales (14). By way of comparison, the same is said to be true of the traditional shakuhachi repertoire, which is neither metric nor rhythmic, and breaks Western tonal rules by having in-between notes or microtones (Seldin 43). Parallel attempts of ethnomusicologists to precisely notate shakuhachi music have been characterized as “Seeking to enumerate the exceptions to a non-existent rule” (Mayers 1976).

Corporeal vs. Abstract: Two Ways of Knowing

We have begun to see, as Frances Densmore puts it, “The theories of civilization cannot catch the native element in the music of primitive peoples,” expressing through her work the refreshing hope for Native American music to be studied “as an expression different from our own music,” and an early argument for its unique aspects to be considered more essential than mere comparison to the familiar system (145). Yet even within a single musical tradition, the ability of theory to “catch” and fully record a musical expression remains questionable. We are all familiar with the experience of listening to a cover of a classic tune in which the sequence of notes is identical to the original, the timing is perfect, and yet something still seems to be missing. No matter how refined our systems of notation get and how many variables we manage to define, description always falls short of complete expression. This is the beauty of musical interpretation. Harry Partch, an American avant-
garde composer, instrument inventor and music theorist, was interested in such questions regarding the relationship between documentation and the lived experience of music, such as how much we can know about ancient music which has been reliably documented, yet which we ourselves can never experience in its full and original form and context. “What was the music of vanished civilizations like in terms of actual reactions?” he asks. “It is quite impossible for us Westerners to imagine what ancient Greek music was really like, even after we know the salient facts about it. The Greeks could not use phrases that would convey absolute meaning to us” (7).

“Absolute meaning” then is taken to be something that is delivered only in the subjective moment of experiencing a piece of music, an actual moment of our life, rather than something received through a piece of writing that might originate before our birth and continue to be passed on long after we are gone (or, as Partch suggests, is seemingly meant to transcend time altogether). Written music can have the practical virtue of preserving compositions for posterity in a universally recognized format, for teaching and circulating among peers and contemporaries without need of being physically present, or simply for jotting down musical improvisations for future reference. Yet in any case it is clear that the written form of music is not an end in itself, but rather exists wholly for those rich moments of full aural experience, when the inert lines on the staff paper give way to corresponding physical gestures, vibrations and rhythms, presently engaging the senses of a living human audience. The written element of a piece that purports to be the musical essence connecting one performance to another would be characterized by Partch as “abstract,” while the performances themselves should be called “corporeal”—a distinction which can be used to understand the difference between Native American music as an experience and the early attempts by European commentators to apprehend and describe it systematically. “For the essentially vocal and verbal music of the
individual,” Partch writes, “the word Corporeal may be used, since it is a music that is vital to a time and a place, a here and now... Corporeal music is emotionally ‘tactile.’ It does not grow from the root of ‘pure form’... The word Abstract, on the other hand, may be used to denote a mass expression... neither here nor now, but transcending both” (8).

A systematic intellectual approach is not needed to “know” Native music. As meaning in music is essentially “tactile,” all one needs is a body, and to be present. The meaning will reveal itself directly, without any need for interpretation or elaboration. On the contrary, it can be detrimental to the true understanding and transmission of music to place it within a conceptual frame, as we shall see shortly in the case of transcribing Native American songs in European notation to be played in the Western system of tuning. Corporeal music cannot, by its very nature, be represented by abstract means and still remain corporeal in that form. Just as we can know something of the music of ancient Greece with our minds through textual evidence, but never concretely with our bodies, when one culture writes down the music of another through its own, independently developed schema, there is likely to be something lost in translation. This “something” is the aural-emotional feeling of the original music as it enters and pulses through our nervous system, the experience itself which no method of documentation can carry away with it or reproduce. On the abstract level, it is the “same piece” of music that is drafted, re-written, performed, tape recorded, transcribed, published, learned, practiced, arranged, and performed many times over again. Corporeally, music is an ongoing and ever-changing process that takes place in the bodies of living subjects; having no beginning nor ending, the same piece is never played twice. Harry Partch’s interest in this ineffable side of music led to frustration with the standard offerings of music theory, the “widespread emphasis on skills at an instrument, emphasis on the ‘technique’ of playing and composing music... all too rarely did I find consideration of intrinsic content by either author or
teacher. Various degrees of intrinsic content were simply accepted, having long ago been determined for us” (4).

I believe that by *intrinsic content* Partch has in mind things like the intonational systems all standard Western instruments are designed to accommodate (discussed in greater detail shortly), the series of intervals that define the basic scale and its seven modes, the physical gestures associated with particular instruments, and conventions of harmony and tonality—fundamentals of theory that *are* addressed in traditional music education, but rarely questioned at the root. Yet I think he also has in mind something more fundamental still: the bodily and emotional experience produced in us by a flow of sounds, considered in its own right. The intrinsic content of music *is* this experience of self-contained “meaning” about which little or nothing can be said, since of course, any words added on to it are no longer *intrinsic* to the experience itself. In fact, once we are perceiving the world in such a way that a sound is just itself, with nothing added on, any words that *are* added will simply have this same quality, such that *their* intrinsic meaning reveals itself in the same way—that is, rather than grasping at them with the intellect, words are allowed to be what they are while they last, existing more as sense perceptions than as logical signs and springboards for the rational mind.

In *The Spell of the Sensuous*, philosopher David Abram presents a theory of meaning that summarizes this point very well, contrasting the assumption that words point to transcendent meanings *beyond* themselves with the view that meaning originates *within* the word as an auditory experience, anchored to a particular corporeal event rather than an abstract and universal essence. Speech then is “a vocal gesticulation wherein the meaning is inseparable from the sound, the shape, and the rhythm of the words,” says Abram. “Meaning sprouts in the very depths of the sensory world... it is this direct, felt significance—the *taste* of a word or phrase, the way it influences or modulates the body—that provides the fertile, polyvalent source for all the more refined and rarefied
meanings which that term may come to have for us” (74-5). While today we are told by specialists that as much as 38% of all communication derives from our tone of voice (with as little as 7% attributed to verbal content alone, the rest coming from body language), Harry Partch would stipulate the importance of the *tonality* and harmony of vocal expression, which may be analyzed in actual musical terms (Mehrabian 1971). Writing music on the basis of harmonized spoken words, which to him epitomized the ideal of corporeal music, Partch focused his efforts on crafting an ensemble of new instruments with new scales to serve this purpose (6). And while Partch begins to think of music in terms of speech, Abram conversely writes of speech in musical terms, calling it a “melodic singing... carrying the bulk of communication” where “the explicit meanings of the actual words ride on the surface of this depth like waves on the surface of the sea” (81). The “depth” referred to here is the common foundation of meaning from which both music and speech derive like waves from the ocean, although it could be said that music remains closer to this source.

The convergence of musical expression and the vocal, verbal expression of the individual can be approached from both sides, whether artistically or theoretically. Harry Partch combined the two in his elaborate theatrical art pieces, deeming them inseparable aspects of each other and of drama, as he asserts the Greeks did. Hazrat Inayat Khan thinks of music as the primordial language of life, evidence of which “can be found even now in the language of the animals and birds, who express their emotions and passions to one another without words, only in sounds... music in all ages will stand on the highest pedestal for the expression of what is deepest in oneself” (47). Again we encounter the theme that music and language derive from the same source, while music remains more fundamental, a purer expression of emotion. For another example we might take the case of tonal languages, those that use tone to distinguish words – e.g., Chinese is a tonal language proper
because altering the pitch of a single syllable can change the literal dictionary meaning of the word. English is not a tonal language in that changes of pitch and intonation during speech will not change the definition of a word; yet it is tonal in the sense that such changes will influence the emotional nuance of what is being expressed. In that sense we might say that every language is tonal, insofar as language at its root is the communication of emotion through pitch. Music, then, would be language at the root: a completely tonal, completely non-verbal language that is devoid of content at the same time as it is full of meaning. Khan, a Sufi practitioner of the mysticism of sound, maintains that out of all the arts, not only is music the best suited to communicate our innermost feeling, articulating what neither painting nor poetry can suggest in images and words, but also “in fact music excels religion, for music raises the soul of man even higher than the so-called external form of religion” (6, 4).

It is interesting that music both expresses what is inmost and raises the soul for Khan. This touches on two ways of thinking about music as contemplative practice introduced in this section. The idea that music draws on the same source for meaning as speech, with the advantage of being closer to that source, suggests that the intrinsic emotional content of speech can sometimes be better expressed when the words themselves are shed in favor of a direct translation of the nuances of emotion into sound. Similarly, the concept that music can “raise the soul higher” than other, external forms of religion indicates that we are often more receptive to energetic messages delivered through the preverbal medium of pure sound than we might be to more traditional religious texts and rituals whose outward forms have lost some of their efficacy for us. So music can act both as a means to express the most basic emotions of our life, and as an object of focused awareness from which to receive transmissions of uplifting energetic content. When someone plays an instrument in such a concentrated, receptive state
(acting as both a composer and a listener), these two modes of practice are united to produce a kind of positive feedback loop: soon the emotion expressed becomes the emotion experienced, which in turn comes out in a new expression. This flow of emotions, felt almost as it is being articulated in sound, is continually refined by the player to generate the most potently beneficial result. The purest expressions of self found in music may lead to a corresponding purification of self by allowing the musician to observe more clearly the shifting emotional states of the mind and to cultivate their most positive manifestation.

In such applications, the wooden flute might come closest out of all the instruments to a reproduction of the sheer tonal expressiveness of the voice, in part for its close connection to the breath. The shakuhachi here epitomizes the simplicity that allows primitive flutes to transform every subtlety of user input through the breath into a full-bodied extension of the player’s voice. In the hands of a master, this is said to result in a “vocal, though non-verbal, expression of the ineffable essence of Zen enlightenment” (Sanford 412). Already comfortable divesting itself of reliance on the verbal aspect of transmission, Zen may still have access to the utmost precision in conveying its teachings through the pure being of sound (e.g., the vocal) alone. “The flexibility and freedom of the shakuhachi mimic the human voice,” says virtuoso player Christopher Yohmei Blasdel. “Shakuhachi tones bend, elongate and waver like the best of human voices... the shakuhachi must be ‘sung’.” (155-6).

Similarly, although it does not possess quite the flexibility and range of its Japanese counterpart, the Native American flute (like Native North American music in general) is far from being confined to strict tonal demarcations like the discreet intervals on a piano. Its simple structure allows, through variations in air pressure and half-holing techniques, a significant degree of pitch bending and flexibility within the basic configuration of its scale, offering players a freedom of expression
analogous to that of the “sung” shakuhachi outlined above. In fact, whereas most Native American music is vocal, flute pieces are among the only ones that are often purely instrumental. This is because flute pieces “can also be sung,” or, put another way, they are actually vocal pieces that are playable on the flute, lending support to the notion that the instrument’s scale was perhaps sometimes defined by a vocal melody, or at least that it was considered to have an expressive quality equal to that of the voice (Herndon 31). The NAF has been called “an instrument primarily related to emotional expression, both in contemporary and traditional times,” as it was used in the past by the young men of a tribe to reveal their true feelings to a potential lover, and is still known today as an emotionally evocative instrument (Spotted Eagle 27).

To return to the question of traditional tuning for a moment, an issue that now presents itself is whether the colonial musicologists who first studied Native American music failed to recognize its sophistication because of a fundamental difference in method which perhaps neither culture could have perceived at first. I have already emphasized how analyzing one culture’s music through the established theoretical lens of another—an abstract method—is not as accurate and complete a way of knowing about it as simply experiencing it with one’s own body without preconceptions, comparisons, or analysis. I have also suggested how in the case at hand, the hegemony of a heavily rule-based European musical system imposes its own values on the smaller, decentralized network of indigenous musics on the North American continent by criticizing its lack of consistency and conformity to predefined abstract notions of harmony, rhythm and tonality, for example. We might now generalize that the form of Native American music springs from its voice, or intrinsic corporeal nature, while the voice of European music is derived from and secondary to its form, placing its method firmly in the category of the abstract.
The early-recorded fact that “comparison with a standardized pitch is unknown among the Indians and they find pleasure in sounds which are not pleasing to our ears” may be due to this essential difference between *voice before form* and *form before voice* (Densmore, qtd. in Spotted Eagle 104). To illustrate this possibility, the technical question of intonation may be broached. The space between a pitch and its double (say, A-440 and A-880), conventionally called an octave, need not be divided into eight discreet intervals as implied by the name (though we still use the term, “octave” is a misnomer even in modern Western music, as we have used the standard of twelve tones per octave for quite some time). More importantly, the pitch *ratios* between the various intervals and the root note of the octave are hardly fixed and immovable values. Limitless variations on these ratios are possible, though our ear can be trained to become more or less familiar and comfortable with the standard “set” of a particular culture (this is also how we learn to associate the signature tones of an exotic scale with its corresponding region on the earth). The ratios chosen for a particular instrument or musical system could be said to describe its *intonation*—used here in a broader sense than what is normally implied by that term, namely a player’s ability to conform to a set of *pre*-defined intervals. I mean intonation in the more fundamental sense of the initial definition of the set of intervals itself, for a player’s “realization of pitch accuracy” cannot be known until we first determine whether we are approaching it from the same frame of reference or not.

Thus there are no *inherently* right or wrong ratios in an intonational system. What we might call “natural intonation,” however, despite the high degree of flexibility and variety still possible under that heading, is distinct from more complex systems in that it derives entirely from the voice and the ear. The starting note of a scale, like every musical sound, contains a series of naturally occurring overtones or higher frequencies of resonance within it which could be described as
proportional to the fundamental pitch. Although this proportionality can be visualized by looking at the locations of natural harmonics along a vibrating string—1/2 of its total length, 1/3, 1/5, etc.—it is inherently a type of proportion that can be perceived by the ear. Although normally overtones are relatively subdued and perceived mainly as part of the timbre of the starting pitch, they can be accentuated by using their defining frequencies as subsequent notes in the scale. A great effect is had by sustaining the fundamental underneath a sequence of such notes based on its overtone series, strengthening the bodily feeling of resonance—this effect is called harmony, and is the basis of natural intonation. And as Densmore points out, Native American music possesses a “structure suggesting a consciousness of the overtones of a fundamental,” or a “subconscious sense of harmony... the line of least resistance for the Indian voice appeared to be the upper partials (overtones) of a fundamental” (144, 131).

That the “line of least resistance” for any voice, in the task of establishing a scale to please the ear, is to locate some of the notes already implicit in the starting frequency should be self-evident. The fact that the presence of these naturally occurring notes is often very subtle and hard to detect should be testament to the depth of awareness of any singer who succeeds in rendering them. Yet for many European observers, Native American music that made use of this method of natural intonation was regarded as having “good” intonation only part of the time, while certain notes in their scales were not as “accurate.” According to the conventions of European standardized pitch, “it is found that the octave and the fifth above that tone are [produced] with the best intonation, the major third is usually given with clearness, the fourth and seventh are often variable in intonation, and the semitone is the most variable in pitch” (Densmore 133).

I would propose that the reason for such interpretations, claiming inconsistent “accuracy” among the various tones in Native American
scales, may have been the dominating influence of the European intonational system called equal temperament, a concept of ideal tuning to which nearly all contemporary Western instruments would have conformed. This system evolved in response to a demand for the ability to shift or modulate between keys on a single instrument without retuning: an instrument can only be tuned perfectly in one key at a time, since pitches calibrated to resonate well with a given fundamental note always sound less harmonious when played in relation to a different starting note. With each potential starting note designating its own set of ideal intervals (not evenly spaced throughout the octave, but following the proportions of the overtone series unique to that note), all twelve of these sets can never be made to overlap each other completely; one must be chosen over the others. Equal temperament gets around this problem by spacing the notes out evenly across the octave, making the interval between them an interchangeable, standardized unit. It acts as a kind of “compromise” by making all of the keys “equally out of tune,” sacrificing a little bit of harmonic perfection in each so as to make them all playable on the same instrument. Every note in the system can now be played in the context of twelve different keys, taking on these multiple roles without sounding significantly out of tune. As Harry Partch defines it, equal temperament “involves the varying degree of flatting or sharping of the acoustically correct ratios so that any tone of the temperament can serve in several senses... and still convey the ‘impression’ of correct intonation” (70).

This method represents an elegant and mathematically ingenious solution to the problem of modulating between keys which has allowed instruments to become more versatile and compatible with one another. Yet Western culture has gotten so accustomed to this solution that it is no longer commonly perceived as one alternative among many, but as a standard by which to measure all music. Note that the intervals in equal temperament that remain closest to the natural intonation of an
untrained voice—the octave, the perfect fourth and fifth—are the only ones identified in Densmore’s analysis above as being rendered accurately by Native singers, while those she calls the “most variable” are precisely the intervals in vocal intonation that should vary more widely from their equal tempered counterparts. Thus even in the 1920s, the intrinsically corporeal and vocal music of Native America is being measured by the abstract yardstick of equal temperament; and the situation is not much better today. Harry Partch’s observation in 1949 could almost still describe the current state of mainstream music education: most of what we are exposed to “contains the implication, if not the positive assertion, that it is futile and irreverent to look for anything better than the present Equal Temperament” (96).

There are, of course, good reasons to look beyond the current system “which deliberately robs its intervals of their purity in order to implement the idea of every-tone-in-several-senses” (Partch 74). The versatility of modern instruments may not be considered worth the corresponding compromise of their harmony in some contexts. Partch had his own reasons for abandoning them in favor of creating his own family of instruments, tuned to play with each other in purer intervals. As the Native American flute is mainly a solo instrument for me, its compatibility with other instruments is not of primary importance, and I follow Partch in exploring harmonic tunings for my instruments that lie outside of the dominant system. Moreover, there are several ways in which natural harmony pertains to flute playing as meditation practice, which I will now turn to.

Concepts of Harmony, Musical and Mystical

Every musical sound is, of course, actually a vibrational wave or oscillation of pressure that travels through the air at a given frequency. This frequency is measured by the SI unit Hertz (Hz, defined as the number of cycles per second) and is perceived by the human ear as pitch. Every musical instrument, then, has its own way of exciting a
vibration in the surrounding air pressure. In the case of the Native American flute, a built-in fipple serves to mechanically condense the player’s air into a narrow stream and direct it across a 45° angle splitting edge to produce the tone. Called an edgetone, this sound comes about when minute pressure fluctuations cause the majority of the air to split first to one side of the edge, then more to the other, in rapid succession. The small pressure buildups on either side deflect the air stream back on itself, back and forth across the edge in a series of quick pulses that disturb the surrounding air in a regular wave pattern, which we subsequently perceive as a tone (Hopkin 62-3).

The frequency of these pulsations (and the pitch we hear as a result) is determined by a multitude of factors in the flute’s design, not the least of which are variables pertaining to the dimensions of the fipple and the air stream, but most significantly the length of the tube into which half of the air is flowing. Longer, wider tubes produce slower frequencies of air currents and thus a lower pitch. The length of the tube can effectively be modified by opening up the finger holes and closing them, changing the frequency of pulsations emitting from the sound hole to produce different pitches.
A drone flute is essentially two flutes attached side by side horizontally, usually two vertical chambers in the same piece of wood separated by a dividing wall, one with finger holes and the other without. The tubes are cut to the same length, and therefore play the same pitch with all finger holes closed. Opening the finger holes on this kind of flute adds another dimension to the sound by allowing two pitches to be produced simultaneously. Varying the frequency of one vibration while the other remains constant (the ‘drone’ note) creates a sensation of harmony, and strengthens that of tonality in the listener. It is in the case of the drone flutes that the question of intonation becomes particularly relevant to me, because the ear becomes all the more sensitive to frequency ratios between melody notes and the fundamental when heard directly in relation to a drone note.

The method of “natural” intonation described above is known formally in music as just intonation, defined as any musical tuning in which the frequencies of notes are related by small ratios of whole numbers, so that all notes are members of the same harmonic series. As Harry Partch puts it, it is simply “a system in which interval- and scale-building is based on the criterion of the ear and consequently a system and procedure limited to small-number ratios; the initial interval in Just Intonation is 2/1, and stemming from this are the wealth of musical intervals inherent in small-number tonal relationships” (71). In other words, just intonation in and of itself is not a specific scale defined by a finite sequence of intervals, but rather a method used to make many scales. The number of scales possible, like the number of whole number ratios possible between 1/1 and 2/1, is restricted only by the upper limit one chooses to impose on the complexity of the ratios (e.g., “11-limit just intonation” implies that no prime number larger than 11 will be used in the ratios of the system). While ratios of very large numbers, such as the 729/512 ratio of Pythagorean tuning, can technically be called just, in practice only ratios using much smaller numbers are typically used. For
the smaller the numbers in the ratio, the more consonant the tone will sound with the fundamental.

As the accuracy of human hearing in discerning small differences in pitch increases when two pitches are played simultaneously, this consonance found in smaller number ratios is the reason I specifically choose to tune drone flutes in small-limit just intonation. The feeling of consonance (Latin consonare, “sounding together”) applies to a harmonizing of two tones that may be described variously as somehow stable, powerful, pure, strong, or clear. Although various attempts have been made to demonstrate an objective (physical or physiological) basis for consonance, it is still commonly acknowledged that the best definition we may yet have for the phenomenon is simply those sounds which are pleasing to the ear. The harmony of a small number ratio like 3 to 2 always carries an unmistakable, if unnamable quality—Partch notes that “whatever adjectives are used to describe the sensation, we know that it is different from the sensation created by a large-number proportion of, say, 23 to 20, which to the ear may be strident, confused, discordant”—i.e., different from the opposite subjective quality known as musical dissonance (86-7). In the same way that small and large are relative distinctions in classifying ratios, no real line exists between consonant and dissonant intervals; still, I can always tell the difference between a drone flute tuned in just intonation and one tuned in equal temperament.

Although the possibilities for tuning are boundless (and I hope to push my own arbitrary boundaries more and more), I mainly choose to tune my flutes to a just intonation version of the minor pentatonic scale that has come to be associated with a Native American aesthetic. I have also tried justly tuned versions of a mixolydian pentatonic and major pentatonic, but I fell in love with the just minor pentatonic from the first time that I tried it (this also enables my flutes to allude to the Japanese
tuning of the shakuhachi). The frequency ratios I use in order to achieve this tuning are as follows:

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\begin{array}{cccccc}
1/1 & 6/5 & 4/3 & 3/2 & 9/5 & 2/1
\end{array}
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These numbers can be multiplied by the starting pitch of the scale (e.g., F# at 369.99 Hz) to derive Hertz values for the rest of the frequencies, which can then be plugged in to an algorithm with other variables to predict the locations of finger holes relative to the bore length (rather than doing all the computations myself, I use a very intuitive and free HTML program by Edward Kort called NAFlutomat 34). The frequencies can then also be converted into the units of standard notation for ease of use with a typical chromatic tuner that only gives pitch readouts in cents (1/100\textsuperscript{th} of a semitone in equal temperament). The frequencies are now expressed as approximate cent values relative to the nearest equal tempered note (A+16 cents, B-2, E+18, etc).

Yet if, like Partch, I claim to prefer the harmonic flavor of just intervals out of a commitment to corporeal over abstract music and methods, a conviction in the primacy of the body (the voice and ear) in rendering natural intonation over the intellect, is it not a contradiction to employ such calculative means to get there? And if the tuning stage of flute construction is not to be viewed as an interruption of meditation, but rather an integral part of the practice as a whole, is it still legitimate to
analyze, quantify and arrange things with the conceptual, discriminating mind we are purportedly trying to free ourselves of during contemplation?

With regard to “corporeal vs. abstract” methods of tuning, an interesting distinction arises between instruments tuned by the body (for example, with organic finger and hand measurements, catering towards the natural fall of the hand on a wooden cylinder), and instruments tuned for the body—i.e., tuned in just intervals to give the ear the pleasing sense of acoustically perfect harmony it desires. To tune an instrument deliberately in just intonation may at first seem as wholly abstract as tuning it deliberately in equal temperament, as it will typically require the use of electronic tuners, mathematical conversion of ideal tonal ratios into hertz values, and calculation of finger hole locations to match those values—in short, goal-oriented mental operations that make more use of the rational, categorizing mind than of the body and the intuitive faculties. Whereas, to tune using only body measurements and the ear itself is to use the body as the primary means of knowing and perceiving harmony over the intellect—coming to an unrefined result without first formulating any goal, and seeming to render this latter method more in line with a philosophical commitment to corporeal music. But I would hold that this is a false dichotomy. Not only because it is possible to combine both methods—for example, one might plot out the tone holes in precisely determined locations (abstract), while doing the physical fine-tuning of the intervals by ear (corporeal)—but also because, upon closer first-hand investigation of the whole process, it becomes clearer that there is no ultimate division between strategic thinking and somatic processing in this shared endeavor: the ‘mind’ and ‘body’ elements of the method seem to blend together in their own sort of harmony, inextricably bound to each other in a give-and-take relationship of mutual dependency and complementarity.
Harry Partch believed that musical intonational systems using just intervals were those best suited to convey the corporeal richness and nuance of human speech, as dictated from time immemorial by the native harmonic sensibilities of the ear. This approach is theoretically opposed to tempered systems which artificially homogenize the spacing of intervals according to an intellectual preference for tonal versatility, allowing each tone to play several harmonic roles interchangeably (occupying up to twelve different tonal positions in the scale depending on the starting pitch)—a result only arrived at through careful placement in a conceptual scheme, a rational “conquering” of the spectrum of sound contained in an octave. The paradox is that, although the culminating achievement of this “Western,” logo-centric method can be summarized by a single numerical rule to represent the constant ratio between two adjacent semitones, $\sqrt[12]{2}$, so also can the alternative systems of just tuning be expressed by simple, whole number ratios relating the notes of the scale to its fundamental, the only difference being that each of these ratios is unique and must not contain a radical. In other words, mathematical definitions of each type of system are equally possible, and, we might say, equally abstract, leading us to question what distinguishes them in that respect. Despite his emphasis on corporeality in music, Partch himself knew about and used extensively the somewhat cerebral principle of whole number ratios in his instrument design—a seeming double standard.

Yet the mathematical and conceptual formulations of this latter approach to tuning spring only from an original perception of its resultant harmony, unmediated by concepts. Indeed, even equal temperament, as an instrument designer’s mathematical attempt to capture harmonic relationships in a grid and bend them to his will, was simply an elaboration on earlier systems of tuning based on natural harmony, which can themselves ultimately be traced back to the bodily
act of bringing two adjustable frequencies into a relationship of consonance within the human ear. “Tempering” an instrument is a rational afterthought—an attempt to keep its tones harmonious across a range of possible keys, by stretching the limits of acceptable consonance within each—but these modifications are still made with the common goal of pleasing the ear. Similarly, Harry Partch’s decision to part ways with the established temperament of his culture did not stem from a scholarly disagreement with the modified formulas being used to determine its ratios, but rather from his dissatisfaction with the experience of listening to it. “Call it intuitive,” he wrote. “For it was not the result of any intellectual desire to pick up lost or obscure historical threads. For better or for worse, it was an emotional decision. After all, like other American musicians of my day, I was trained to regard Abstraction and all its appurtenances as noble” (5).

Partch did tune some of his just instruments entirely by ear to prove the primacy of the body in arriving at the final result, but he was equally fascinated by the undeniable and mysterious correlation between the places in the sound spectrum where, relative to the same fundamental note, the ear finds harmony and the intellect finds small whole number ratios between the frequencies. While “the ear consciously or unconsciously classifies intervals according to their comparative consonance or comparative dissonance,” he muses, “this faculty in turn stems directly from the comparative smallness or comparative largeness of the numbers of the vibrational ratio” (87). He holds that knowledge of this direct correspondence as a musical and mathematical principle is “as ancient as almost any precept of man,” with its formal discovery first attributed to Pythagoras, but possibly having been in use from up to 3,000 years earlier. (151). In other words, the idea of measuring and relating musical sounds by simple ratios has occurred to human beings for almost as long as they have placed value on harmony: the direct experience and theoretical reflection upon it seem to go hand in hand.
I myself cannot tune a flute by ear and body measurements alone, as I would not completely trust myself to find the most satisfying intervals that I have known from previous experience. My fingers can show me their own most comfortable positions easily enough, along with comfortable hole-sizes, but not where the overall pattern should be placed to produce the notes my ear wants. My ear can discern tiny differences between a note in perfect consonance and one that is slightly off, but does not have the necessary training to definitively recognize either one by itself, without hearing both alternatives in sequence. My mind feels lit up by a perception of perfect harmony, and knows the feeling all the better when it has just experienced a nearby dissonance; yet I am often hard pressed to tell whether a slightly dissonant note needs to be raised or lowered (and by how much) to achieve this desired result. Concentration on consonance, and honing the mind’s ability to distinguish subtle variations in it, can become a profound contemplative practice in itself; yet that is not to deny the initial usefulness of a calculative approach in getting as close to the harmonic ratios as possible. In reaching a deeper meditative state, the appropriate use of goal-oriented thought can be a powerful instrument that guides us along the way, so long as it does not overstep its bounds.

Without working with our hands at least as much as our head, we find that the quantitative, conceptual aspect of instrument tuning is not very useful in itself alone. Calculations performed in a vacuum, without any prior experience of what kind of hertz ratios will produce harmony, cannot yield pleasing intervals, for that depends on experience gained by listening, first to the results of our own trial and error, and secondarily to the advise of others who went through the process before us. While the ear itself remains the origin, calculated models can subsequently become a tool in service of the ear. I would note here that although following the instructions of another can save us much time and frustration in this craft, overemphasizing the goal of achieving their prescribed result takes
us further away from the ear and our own experience, and closer to a kind of heedless calculation for its own sake. This is to be avoided in contemplative woodworking, which is anchored in the immediacy of the present situation, keenly perceptive of what is happening in the moment and ready at any time to let go of preconceived goals when experience and intuition reveal a better way. It is possible to carry this type of mindfulness both through the mental process of calculation and measuring that designates objectives, as well as the straightforward physical acts that carry them out, gradually replacing one objective with a slightly better one, and simultaneously developing a feel for the physical technique that generates the best results. The result is a craft that continually refines itself, relying less and less on calculation as it works its way into our muscle memory. The more I make flutes and play them, the better my methods become, as knowledge that started out on the intellectual level is steadily being integrated into a richer, more holistic awareness of instrument form and function that incorporates both mind and body.

In the midst of this natural process of refinement of craft, there must be a constant exchange between the craftsman and his object. If we are to find out how best to produce an edgetone from a piece of wood, for example, we cannot do this on the first try by staring at an uncut board while performing mental calculations, but must dive in and work it in such a way that the wood itself shows us the best way, revealing all its secrets through its interaction with us. We do not impose our preconceptions upon the material – for then we would be unable to learn anything from it – but rather yield to it, observing the way it behaves in our hands and with our tools. Johnson observes, “the caring craftsman experiences a reciprocity with the wood in which it is no longer decidable who is speaking and who listening” (68). Listening to the wood, we do not overly impose ourselves, but still we must put ourselves into the work somewhat in order to accomplish anything at all (we too must “speak”). It
is when our speaking follows in perfect reply to the wood that we know we have found its ideal function. This will be different for each individual piece of wood, so that our focused listening must remain a continuous process; we must “interrogate” the wood “with the same wonder and attention that the sculptor studies the stone before the first chiseling... in order that the wood itself may speak” (67).

In his manual on shakuhachi construction, Monty Levenson suggests that the most important tool in flute making is *playing* the instrument regularly. “There are certain insights into the craft which lie quite beyond the province of logical explanation and technics,” he says. “Much of the work on my flutes is done deliberately yet swiftly without measuring or testing. There is no mystery or metaphysics involved here... It *feels* right or wrong. Playing provides one with this sensibility as no instructions, diagrams or specifications can” (3). He speaks of an identification with the instrument, which through the hands-on activities of construction and playing, grants a type of intimate knowledge about the way it works that hands-off reading and calculating cannot, even if it is still possible to verbally represent these new insights to oneself in more specific ways afterwards. The verbal explanations act as a valuable summary of experience, but can never replace it as an instrument of learning. We *learn by doing*, and by gradually merging our consciousness with the *doing* of the craft, we ultimately learn most effectively in those exceptional moments of pure awareness that feel, in retrospect, as if we had been one with the activity of the moment, leaving no trace of ourselves to interfere.

In traditional Japanese Zen culture, every craft can be practiced as a *-do*, or way, by means of which it is possible to realize oneself by *forgetting* the self in these moments of complete identification with the activity of the craft. The freedom of such total absorption in a task is seen as a more vital accomplishment than forcing an advancement to any particular skill level—for through it, true learning is facilitated just
as the natural \textit{growth} of plants is brought about by the vital influence of water and sunlight. The student of a craft must first learn to “have the attitude of the tree—the attitude of purposeless growth in which there are no short cuts because every stage of the way is both beginning and end” (Watts 176). With no sense of separate self remaining to define a goal or distinguish between the subject and object of the doing, learning is carried out by itself, as a natural unfolding of activity. It often feels that far greater progress is made in these moments of purposeless action than during much of the time we spend as a subject engaged in exerting control over the object of our craft, consciously planning out how we are going to manipulate things to achieve a desired end.

Of course, calculative thinking will always have its place in learning as well—in the case at hand, it would probably be very difficult for me to teach myself to tune flutes in just intonation without the use of the concepts and tools previously mentioned. I am certainly not yet at the point Levenson describes in relation to his own craft, where flute tuning could be done “deliberately yet swiftly, without measuring or testing.” Perhaps as my own craft grows within me I will eventually become comfortable enough to let go of calculations and measurements, relying on my intuition and ear alone—but if not, I have no problem with continuing on the way I am. As Alan Watts commented on the nature of crafts as meditation practice, “for Zen there is no duality, no conflict between the natural element of chance and the human element of control... for who controls the controller?” (174, 197). Even while meditation seeks the repose that comes with letting go of goal-oriented thinking, most techniques taught for entering such a state necessarily involve some initial formulation of goals (e.g., instructing oneself to bring the attention back to the breath every time it wanders off)—and this poses no contradiction or problem at all for the meditator who already rests in a deeper state of awareness because of it. Moreover, in experiencing the essential unity of self and action during meditative
absorption in a physical task, it becomes clear to us that this unity does not go away at other times simply because it is pushed to the periphery of awareness: even when the mind is occupied with calculation and planning in relation to some posited external object, we know that there is ultimately no self separate from this very activity that functions independently of it as “controller.” Far from being contradictory to the spirit of meditation, I feel that logical, means-to-ends thinking finds its most appropriate application in the service of working out the mechanics of a physical task. Although it might seem at times that that the woodworker takes on the hyper-rational role of “the geometrician par excellence” in his careful utilization of geometrical concepts and exact measurements, “ultimately it will not be the geometry that triumphs, but the forms of the human body and our lives together,” says Galen Johnson. “In woodworking, our ‘language of means’ may be geometry and its tools, but the ‘language of ends’ comes from the forms and life of the human beings that will inhabit our houses, sit in our chairs, and eat at our tables” (69). For me it is the active, living element of flesh and wood on the other end of the calculations that separates the math we apply to woodworking from the textbook variety, although the computations may be the same. Figuring out how something works is the natural activity of the human being, a pursuit that satisfies the intrinsic urges and curiosities of both mind and body. As a philosophy student, I find that theoretical reasoning becomes detached all too easily from practical undertakings in the world; so using the rational part of myself to meet the tangible goals of instrument making is something I find highly satisfying in contrast. Ideally, we learn and get things accomplished most successfully through a proper balance of mental and physical exertion, allowing the goal-oriented mental energy to give way to a physical action done for its own sake, resolving itself by relinquishing control over the situation. Thereby, thought can be applied meaningfully to a process that transcends thinking.
Having established that a calculative approach to achieving just intonation does not undermine the corporeal method, nor the stage of tuning as part and parcel of contemplative flute making—but rather, acts as a provisional and necessary guide to our action in the service of enriching both—let us turn to how the perception of consonance itself can be used as an object of meditation. In one historical attempt to define the nature of the phenomenon, Galileo wrote that “agreeable consonances are pairs of tones which strike the ear with a certain regularity; this regularity consists in the fact that the pulses delivered by the two tones, in the same interval of time, shall be commensurable in number, so as not to keep the eardrum in perpetual torment, bending in two different directions in order to yield to the ever-discordant impulses” (qtd. in Partch 138). This may offer the beginning of an explanation as to why the frequencies of pairs of harmonized tones are always found to be related by small whole number ratios. That is, pulsations from each tone enter the ear at rates of hundreds of times each second to contact the vibrating membrane of the tympanum, and are “commensurable in number” insofar as they contact it together with regularity. For example, an E note of 660 cycles per second and a standard A note of 440 cycles per second resonate in the simple ratio of 3 to 2, a perfect fifth. Every third pulse of the E note corresponds exactly to a second pulse of the lower A note, and in this proportion they contact the eardrum simultaneously every 0.0045 seconds. When visually represented as sine waves, the two tones are in “like phase” every three waves of the upper tone to every two waves of the lower one, and the cycle repeats (Partch 143). If, however, the frequencies were not related by ratios of small whole numbers (e.g., if the E note was raised to 667 Hz, resulting in an irreducible fraction of 667/440), the wave patterns of the two tones would be out of alignment much of the time, bombarding the eardrum with irregular pulsations almost continuously. This is probably what
Galileo meant by the tympanum’s bending “in two different directions” as it accepts an uninterrupted stream of impulses that never coincide.

When the pulsations of two different tones strike the ear simultaneously and at regular intervals, the two strengthen and reinforce each other, hinting at their underlying unity in the fundamental. The smaller the interval, the more emphatically the tones reinforce each other through persistent simultaneous pulsations to produce a clear, pure sound. When the vibrational pulses of two tones are completely out of synch, however, they become musically discordant, clashing with or “covering” each other through the effect of beating, a jarring or grating acoustical disturbance that could be described as a kind of eerie “quivering” in the sound. Partch defines beating as “a phenomenon of alternate strengthening and lessening of tone produced by a very narrow interval in a simultaneous sounding, or by out-of-tuneness in... an interval intended as a small-number proportion.” Anyone who knows how to tune a set of guitar strings to each other is familiar with this sensation, as the goal is to diminish and eventually stop the beating that is produced between them when certain intervals are played simultaneously: “as a very narrow interval approaches unison, or as an out-of-tune interval approaches a small-number proportion the beats become slower” (69). Eliminating the beating by ear takes concentration and practice at recognizing harmonic purity in the midst of transitions between near-perfect intervals.

Tuning an instrument, or even playing one whose harmonic ratios are naturally fluid and variable rather than set in stone (like the Native American flute), becomes an interesting meditation practice when the consonance of two notes is used as the central focal point of awareness. In attempting to hear harmony, our ear itself “looks for” the point at which two tones fall into accord and the effect of beating is reduced to zero. When the sensations of the eardrum are brought into sharper focus in the mind, it becomes easier to locate those places along the
continuum of sound wherein feelings of musical tension are resolved, for these are where the erratic and conflicting patterns of pulsation that chafe and tickle the eardrum are brought into an alignment that feels more like a warm bath or a massage. As the combined frequencies of two sound waves approach a small whole number proportion, the sensation of agitated vibration that exists between them is gradually reduced from an outright quivering through a phase of rapid trembling, to a slow throbbing, wavering on a final note of prolonged gentle pulses before merging back into the harmonic union in which no beats are heard.

In playing two tones on a wind instrument whose pitch is especially sensitive to air pressure (a single note on the NAF capable of being varied by as much as a semitone up and down before jumping to the next octave), the player will find that she has the ability to exert a significant degree of control over the relative consonance or dissonance of the two tones simply by making slight modifications in the amount of air pressure used, and may learn to consciously exercise this control to manifest ever subtler degrees of musical tension and resolution. In the midst of training one’s mind and ear to focus on perceiving minute differences in consonance that result from varying air pressure in that moment, the player begins to experience a curious sensation of merging consciousness with the tones themselves—an identification in which the tones teach the player how to achieve harmony, since they seem already naturally disposed to “find” the meeting point wherein their tension is dissolved. The tones “want” to “go home,” to resolve into unison or small-number proportion with each other. Identification with the tone in this way allows the player to relinquish self-conscious control as the inherent qualities of the sound emerge to articulate themselves more clearly. As Monty Levenson noted in connection to the importance of playing shakuhachi to learn the inner workings of its construction, in such moments when one becomes the instrument, “insight dawns in the flash of self-recognition” (3). In tuning a flute to a just intonation scale that is
played over a drone note of the fundamental, I find such identification and concentration on the sound helpful to make the ideal pitch relationships come out naturally when using a stable and consistent stream of air pressure. It is equally useful in varying the air pressure while playing to intentionally weave in and out of harmonic purity, creating movements from the dramatic suspension of harmony to its climactic return.

The more completely one is able to become one with the perception of sound, the more fully one is able to recognize the occurrence of harmony between tones, by removing oneself from the picture and letting the tones themselves do the recognizing. Access to fine distinctions in the quality of the sound becomes less restricted when the one who seeks it steps out of his own way, letting go of thoughts and opening himself fully into awareness of the moment. Abandoning the classical epistemological divisions that treat mind (subject), perception, and the object of perception as separate things or reference points, each with their own sphere, the mind that is truly opened to reality experiences itself and these other reference points as interconnected manifestations of a higher unitary or universal self. Although we normally are tempted to say that Consciousness A “lacks full access” to some other Reference Point B—that the perception remains an incomplete representation of the “thing in itself”—when the mind of no distinctions actually perceives something in the world of nondual openness, such as a sound, these categories lose their meaning: subject, object, and perception all collapse into one, and the question of access no longer arises. Access from which point on the continuum of awareness to which other point? Who is asking the question but just one of the many fleeting reference points in an ever-flowing river of consciousness? When a sound is experienced from a place of oneness with the universal self, it exists only as self experiencing self. The paradox is that even while the question of access no longer arises from the mind which experiences no distinction between subject
and object, we might say in a more conventional sense that access is actually *heightened* by virtue of this very state of awareness. Thus we become more sensitive to harmony when we lose ourselves in the sound. Just as, in focusing on an external perception of sound, we let it fully ‘enter’ our body to become internal, realizing our own essential unity with it; so also do the harmonized tones that drift through our awareness seem to realize their own kind of unity *through* us, with an accuracy that could never be achieved by the more removed state of awareness of a subject trying to gain access to some object existing outside of it.

All of this points to a connection between the musical concept of harmony and a wider, mystical sense of the term. This more profound “harmony of life” that is hinted at and given creative expression through musical harmony is described by Hazrat Inayat Kahn. His concept mirrors the fundamentals of the musical theory harmony at its a point of departure: “one sound helps another, harmonizes with another, and one sound differs from another, or covers it” (25). Yet he goes on to expand his notion of sound itself from that of a discrete entity, existing independently from other sounds and observers of sounds, to encompass much wider territory as an indivisible aspect or manifestation of the universal self that infuses every sound and every observer. Therefore “sound is the perceptible activity of the all pervading life,” he writes. “Different sounds differ in their outer expression, but within it is one and the same activity which directs all sounds... the deeper we penetrate into the mystery of sound, the more we are able to trace the link that connects all sounds. This link is what the musician calls harmony, and it is in harmony that is hidden the secret to joy and peace” (24).

Paradoxically, even those sounds that appear on the surface to cover or conflict with each other are still essentially harmonious on a deeper level, for they ultimately derive from the same source. It is merely one’s unilateral perception from a single, relative standpoint that makes them seem like contradictory forces, but actually when we “trace” them back to
the unbroken line of activity that guides them, they appear simply as differing outward manifestations of the universal life itself.

Similarly, the events of life that seem to conflict with each other in a moral sense, appearing on the surface as injustice, should ultimately be understood as deriving from this common source of perfection in the same way. Someone who appreciates the unity of things at the root, however, will naturally live in recognition of this fact by revering life in all of its forms, caring for all outward manifestations of his larger self by bringing them into outward relationships of harmony. For although the inner harmony remains ever intact, realizing its outer form is like a tribute one instinctually desires to pay once one has seen it. Or more accurately, the harmony of the world expresses itself through us in our most natural state, and this is what Inayat Kahn refers to as living the musical life. When we trace what attracts us in all of the beauty we find around us, he says, we find that it is a sense of movement, rhythm, and intrinsic harmony. “All forms of nature, the flowers so perfectly formed and coloured, the planets and stars, the earth – all give the idea of harmony, of music... that all things and all beings are living one perfect life. And the sign of life that this living beauty gives is music” (3). Just as nature itself gives us signs everywhere of the intrinsic harmony by which everything in the universe is connected, so also do we give signs, through the musical, personalized expression of our own harmony, that we have received the message. If music is often considered an ode to God, let it also be considered an expression through God; as a gift of creation given from the universe to itself. Music is life’s celebration of life.

Being a musician ultimately means that we develop music in our whole personality, bringing a harmonizing influence to all aspects of our life. “The true use of music is to become musical in one’s thoughts, words and actions,” writes Kahn. “One should be able to give the harmony for which the soul yearns and longs for every moment. All the tragedy in the world, in the individual and in the multitude, comes from
lack of harmony, and harmony is best given by producing it in one’s own life” (8). For him, the musician takes on a role of vital significance, nothing short of one who works to restore the world to its natural state through his selfless action for the good of all beings. The work of restoring harmony to the world comes about as a function of the work of creating harmony within oneself. The more conscious the musician becomes of his mission in life, then, “the greater service he can render to humanity,” for “the world today needs harmony more than ever before... if the musician understands this, his customer will be the whole world” (7). The musician is perhaps the paragon of the artist who can lift the world’s burdens onto herself, and transform them by her own practiced ability to radiate harmony from the center of her own life. Yet more than being merely metaphorical, the connection between the musical and moral senses of harmony can become manifest as a literal exercise in saving the world through music: the sense of energy inherent in justly tuned harmonic ratios is transferred to the realm of positive, revitalizing human energy when it meets our eardrums in a flowing arrangement of tones.

It is now possible to give slightly more specific content to the idea introduced earlier of music as a means to convey a kind of preverbal energetic meaning. We had established that musical instruments, particularly those like the simple flutes with a special ability to mimic the human voice, can produce a nuanced vocal expression without words that nevertheless gets closer to the source of meaning itself. This expression is then continually refined and crafted by the musician to generate the most positive transmission of emotion. Particular musical phrases are constructed in such a way as to get the energies of the body and mind moving along with them. Sequences of tones contain their own energetic flow that can be transmitted to the listener in the form of pulses of emotion, or even a feeling of renewed physical energy. Music has the power on its own to bring the mind into such a focused and
relaxed state that it draws or manifests a greater amount of energy from the body than would have been produced otherwise. Physiologically, it can stimulate us in ways that make us feel substantially healthier and happier. When the body becomes electrified by the pulses of sound coming in through the eardrums, when the neural, circulatory and respiratory pathways are truly open and free flowing, we feel more alive.

Melodic phrases carry their emotional meaning in relation to a fundamental. This means that the tonality and harmony of a phrase are essential to its purpose as a transmission of energy in a certain direction. The fundamental note defines this direction, as it is the reference point for both tonality and harmony. Tonality is the listener’s feeling that a scale “wants” to resolve to a particular note or notes somewhere in its sequence; we could call it a kind of attraction of the other notes to that point. Harmony, of course, only increases that attraction insofar as all of the notes of the scale are in just proportion to the fundamental, especially when they are played over it as a drone. Harry Partch refers to the fundamental note as the “unity” to which the other tones are attracted through our listening, and gives an interesting account of the psychology of tonality. A tonal attraction involves three perceived factors, he says: “first, perfection; second, departure, or an imperfection which is strong in relation to a desired perfection; third, the perfection implied by the second factor, whether the original perfection or another one” (182). Normally the note we begin to sense as the unity or fundamental of a given scale is the note that a performance starts on, though not always—it need only be a note that is especially emphasized (e.g., repeated often, at the end of every phrase before a pause, etc). As soon as the fundamental has been perceived, all octaves of this note within the instrument’s range become places of perfection or resolution, while already the notes in between are perceived as transitory departures from these places. Partch also calls the octaves of the unity magnets, “which draw the tonal vibrations down or up to themselves... those ratios
clustering around each magnet for the brief moment of the prevailing tonality are temporarily magnetized tones... and tend merely to enhance the perfection of the magnets” (182).

The urge for resolution is inherent in arrangements of temporarily magnetized tones, for we hear in them an implicit attraction to the unity that they surround. The unity is like “the sun in its cosmos”—the heaviest object that lies at the center, exerting a gravitational pull on all nearby satellites (182). Gravity and magnetism are good examples of the type of principle in nature we can evoke to characterize the feeling of psychological “pull” we experience in a series of tones towards their fundamental. This may also be the reason for the ancient philosophical and astronomical concept of the “music of the spheres,” which regards proportions in the movements of celestial bodies as a kind of music: we cannot help but sense a kind of kinship or parallel structure between the arrangement of our solar system and the resonances of natural harmony. The closer a planet lies to the center, the stronger the gravitational influence on its orbit; and indeed the distances of the “spheres” were even believed at one time to be related by whole-number ratios. As Partch says, the intensity of the urge for resolution in a satellite, or magnetized tone, “is in direct proportion to the proximity of the temporarily magnetized tone to the magnet... it is harder to deny the urge of those magnetized tones closest to a magnet.” The intensity of the urge of a magnetized tone also corresponds directly to “the smallness of the numbers of its ratio to the unity of the desired perfection” (182, 183). For example, aside from the unity and its octave (1/1 and 2/1), the smallest-numbered ratio in the just minor pentatonic scale is 3/2, an interval of a perfect fifth that falls near the middle of the scale. The high degree of consonance inherent in this interval when played with a drone gives it a kind of perfection of its own, a purity exceeding that of all other notes in the scale, by virtue of its closeness to the unity through its small vibrational ratio. When the 3/2 note is bent up or down into a
relationship of relative dissonance with the unity, a kind of dramatic resolution of tension is achieved simply by returning to the consonant interval.

In the same way, the notes in our minor pentatonic scale that lie adjacent to the unity (and whose ratios to it include the highest numbers)—such as 6/5, the second note following 1/1, and 9/5, the second to last before 2/1—are slightly more insistent in their urge for resolution, since they are the least consonant intervals. The greatest senses of musical tension available in the scale can be achieved by bending these notes up or down to create a very narrow interval with the drone note. When playing one of my drone flutes tuned to this scale, I often enjoy the effect of half-covering the finger hole of the low 6/5 note and slowly closing the gap until the beating has decelerated to a slow crawl, finally evening out into the clear tone of the unity. This has the powerful effect of a slow build in tension that is drawn out and steadily diminished until it is no longer perceptible as tension; a seamless transition into resolution almost like the auditory version of casting a stone into a pond and watching as the ripples gradually elongate and dissipate into the smooth, calm surface of the water again.

The content of the meaning inherent in the transitions between tones in a harmonized scale, then, consists in the ebb and flow of shifting intensity in the urge for resolution, as well as the resolution itself. We have been discussing this meaning in relation to movements of the particular notes in the minor pentatonic scale of the Native American flute and of the shakuhachi. In the case of the Native style flutes, we have seen how sequences of these notes rendered in harmony over a drone can seem to say something by means of their progressions to and from the unity in degrees of consonance, merging and blending into and out of stable tonal relationships. With the shakuhachi, on the other hand, we find an already established Japanese musical aesthetic and theory of tonality that centers around balancing the forces of tension and
resolution in its scale. Each tone takes on its own particular meaning in relation to the mother tone, and these meanings take on more refined flavors in relation to one another. Ronnie Seldin relates how “there is a special symbolism attached to the basic notes of the shakuhachi’s pentatonic scale; ro, tsu, re, chi, and ri. Re and ro represent the mother and father, or female and male energy; yin and yang. Ri is considered the child. These three notes are the strongest in the shakuhachi scale. Ro, the female, is the foundation; the male re is a very strong sound, but tends to resolve into a ro releasing its tension by coming home. Ri, the child, resolves mostly to ro, the mother, but sometimes to re, the father... the continuum of sound may be considered as strong-soft, positive-negative, aggressive-receptive” (88, 89).

The ‘father’ re note corresponds to the 3/2 ratio, or perfect fifth. As just noted above, this interval has a sense of strength or purity of its own in the scale. Contained within its 3/2 ratio is a distinct flavor of the fundamental, plus something extra. It has the feeling of an assertive, yang energy (which contains yin within it, but also moves beyond it). A return from here to the ro note which defines the tonality of the whole scale carries the feeling of a yielding or resting back into the yin energy. A song that emphasizes re can feel very energizing and exciting, while one that emphasizes ro will feel more mellow and contemplative. Just as we seek a proper equilibrium between our assertiveness and restfulness in life, the most engaging pieces of music likewise draw us in by striking a balance between these energies. Carl Abbott writes of the relationship between the musical balance and the life balance as one of training. Again the musicality of the musician is something extended from her practice on a particular instrument to the whole of her life: meditation is essentially a rehearsal in the kind of watchfulness or presence that we must strive to bring to everything we do. Buddhist shakuhachi music “is a splendid medium for training this watchfulness,” Abbott writes. “This music embodies a microcosm of life, from the passive ‘yin’, to the active
‘yang’. Sensing and balancing these poles musically helps balance them in daily life. The sound is a mantra directing you towards that silence of watchfulness that lies beyond... these opposites” (5).

It is interesting that he refers to watchfulness as a silence here, as the longer I've been playing the Native American flute—and the more open and comfortable I am able to become during any particular performance—the more I come to use silence in my improvisations. When my mind is crowded and in a hurry to get somewhere, there is little rest between musical phrases, and the rhythm feels forced. When the mind begins to empty itself, however, and feels no need to accomplish anything or go anywhere in particular, the silence naturally begins to deepen as part of the music, a freeform natural rhythm takes over, and the sounds become as unstructured and aimless as the slow pattering of raindrops. Paradoxically, such artless unfolding of spontaneous action becomes the true “accomplishment.” As the music begins to take effect in quieting the mind, a renewed clarity of mind steps in to quiet the music. In the increasing silences between the notes, a focus is found which allows both for the previous phrase to be fully absorbed, and for the subsequent phrase to be formed, almost of its own volition, as a complement in energetic meaning. In shakuhachi music this phenomenon of silence is referred to as ma, an absence of sound which is regarded as “a very important, integral part of the composition. How one sound ends and the next begins determines the experience of ma in between,” Ronnie Seldin explains. “A very profound feeling is obtained by ‘playing the ma,’ focusing on the silence in a certain way,” in which “’nothing’ is an important thing in itself” (47). The sound reflects the clarity of the mind that directs it, such that the pause and the flow between one sequence of tones and another should both sound unhurried, and almost as effortless as if the sounds had directed themselves. To return to a point made earlier, “The sound gives you feedback; it mirrors your mind. So, as the mind is, so the sound will be. This permits you to search for and use
those qualities of mind that you want to develop. Your ears will tell you when you’re on track,” when you are developing that balance of mental energies you wish to cultivate in your everyday life (Abbott 5).

These observations on the use of Zen Buddhist music as practice in cultivating watchfulness, and in balancing positive and negative energies as voiced by the shakuhachi, can of course be applied equally to the Native American style flute. While Native American culture seems to assign no overt function to the flute as an instrument of meditation, past and present uses certainly seem to suggest an affinity to the shakuhachi in this respect for many people. Frances Densmore discusses several ways in which traditional culture seems to have attributed a special power to the flute and reserved it for use in ceremonial contexts: while young men used it mainly to express their innermost feelings of love and longing for a mate, it was also used by shamans or “magicians when giving exhibitions of their power,” by doctors when treating the sick, by warriors, or as a warning signal during war to protect the village against approaching danger, and in some rituals such as the Sioux Sun dance (95). All of these applications treat the flute with a certain reverence and respect, and while music did also serve as an everyday source of pleasure for Native American peoples, “music to them, in its highest sense, is connected with power and with communication with the mysterious forces that control all human life... They had their songs with games, dances, legends, and folk stories but those phases of music were apart from its chief function—their communication with the supernatural, through which they believed that they could secure aid in every undertaking” (Densmore, qtd. in Spotted Eagle 110).

It would be easy enough to see some rough parallels and draw connections between these descriptions of native music and some of the points I have been making about flute playing as meditation practice—e.g., the “forces that control all human life” could be interpreted as an alternate expression of the concept of an all-pervasive universal self,
while communication with these supernatural forces through music to “secure aid” in our activities is another way we might naturally come to conceive of the shift in awareness that allows us to observe the mind through the medium of sound, listening carefully for those mental qualities which will help us “in every undertaking.” Such comparisons could be illuminating, yet part of me resists carrying them out any further; specific explanations of the way the flute functions as a tool in bringing about meditative awareness do not feel like the style of either Native American music or spirituality. In these traditions, it seems more like it is simply enough for the experience of something to speak for itself, without a lot of words to get in the way. In Carlos Nakai’s experiences of the role of music in Native life, he says that it “provides more than simple pleasure and entertainment and also serves to preserve... the integrity of experience based oral traditions. The individuals, often ceremonial singers, who personalize and interpret the spiritual and philosophic lifeways use music as a foundation to reinforce cultural concepts” (4).

Native American culture, then, including its spirituality, philosophy, and way of life as a whole, is transmitted not so much through extrinsic verbal traditions as it is through the immediacy of experience itself, using expressive means such as music to convey a more experiential picture of the overriding spirit of the culture.

Leaving Native American flute music as something to be experienced rather than analyzed, with its meditative component allowed to remain simply whatever it has always been intrinsically, there is more to be gained from further examination of the shakuhachi and its own cultural legacy. While much of the same rule applies—that only so much information is available (or even communicable) short of intensive initiation into the tradition—much of what has been expressed about the Zen practice of suizen on the shakuhachi is valuable to look into for its possible applications to the Native American flute, and other similar instruments.
Shakuhachi: History and Construction

The shakuhachi is an end-blown pentatonic flute like the NAF, though it is traditionally only made from bamboo, has four finger holes and one thumb hole, and is played by blowing directly against a sharp edge at the top, similar to the way one would blow across the top of a bottle. Unlike many world flutes, it has no stoppers at either end or anywhere in the middle, but is a completely hollow tube. Its predecessor came from Egypt to China, and then on to Korea and Japan. The Japanese instrument currently known as shakuhachi is distinct from its mainland predecessors though, having evolved independently on the islands for hundreds of years. There it has been used for both music and meditation, and has been a tool for Zen Buddhist meditation practice for about 750 years (Seldin 14). The name shakuhachi literally means “1.8 foot,” and comes from the most common instrument length, one shaku (an archaic Japanese unit for length, 0.994 of the English foot) and eight sun (tenths of a shaku), or 21½ inches in our system of measurement. This corresponds to the key of D above middle C on a piano. Although this is the most common key and length, shakuhachis can vary from about 1.3 to 3.3 shaku and still be referred to generically as shakuhachi; as with the NAF, the fundamental pitch becomes lower with the addition of length. Despite their structural differences, the two flutes are also very similar in the mechanics of their tuning.

Traditionally, shakuhachi were made by their players, and the flutes that belonged to solitary monks for solo play did not have to be tuned to the exact standard pitch that would be needed for ensemble playing. A monk would just cut a piece of bamboo to a desired length and drill holes in it, so that each flute would have its own pitch (Seldin 29). Some people still do this today, although much is known about the technical aspects of flute construction to allow for very precisely calculated tuning to concert pitch (recalling the distinction between corporeal and abstract methods of tuning in relation to meditation, it is
telling to note that a solitary monk will more often simply use his body for a quick and decisive tuning without measuring, though of course not always—even when standard pitch is unnecessary, it is important for the tonal ratios of the scale to be internally consistent). The flute is typically made from the stalk of a large bamboo and incorporates three major segments divided by the nodes, which must be cut through, and the inside of the bore made smooth. The bamboo is cut slightly below ground level so that a portion of its root will form the bell of the flute. After the bore has been shaped, sanded, and lacquered to allow the smoothest possible flow of air, the finger holes are precisely placed in relation to the nodal joints and to each other, and the mouthpiece is notched in at an angle from the top down towards the front finger holes, leaving the thinnest possible splitting edge on the inside portion (Sanford 428).

On some flutes, this mouthpiece, or embouchure, is strengthened by the insertion of a small trapezoidal inlay called an *utaguchi*, traditionally made out of a piece of horn or ivory. The sharp edge of the embouchure “gives greater control of flexibility in pitch and intonation than would be possible in an instrument containing a built-in fipple... There is a tremendous range in subtlety from flute to flute” (Seldin 30-1). Pressing the bottom of the mouthpiece into the space between the chin and the bottom lip, the opening of the player’s mouth is now directly aligned with the splitting edge, meaning that he now has much greater control over the shape, angle and velocity of the air stream than would be possible on a more complicated instrument like the NAF. It is the shakuhachi’s very simplicity that makes its tone the most versatile and sensitive to human input. Dan Mayers points out the strangeness of the fact that the shakuhachi actually has a greater flexibility of expression than the western flute, since most primitive instruments tend to be less flexible than their modern western counterparts—thus, the shakuhachi “might be termed an exceedingly sophisticated primitive instrument.” Its sophistication arises from its simplicity and its reliance upon human
dexterity on the mouthpiece end. Incorporating the organic, changeable qualities of the human mouth and breath into the embouchure, and thus the very structure of the flute, allows for much more development and refinement of playing technique. Not only do shakuhachi players often collect multiple flutes of the same length and key because of subtle differences in the tonal quality of the embouchure, but even the same flute will sound very different in the hands of another player, whose facial muscles will form the other half of the embouchure.

The literal open-endedness of the shakuhachi, combined with the technical and vocal sophistication of the human body-mind—its sensitivity to nuance in tonal meaning, and ability to manifest that through muscular dexterity in the fingers, mouth and diaphragm—make for an incredible clarity and depth of sound which seems to directly reflect the subtlety of the mind that is producing it. There is much truth to descriptions of the shakuhachi as an “empty vessel”—the hollow tube of bamboo merely serves as a thin intermediary between the mind of the player and the vibration it wishes to bring forth into the world. The emptiness of the vessel is precisely what allows it to be filled so deeply and with such variety of tone; though that emptiness must be present in order to hear anything at all. “Lacking the numerous keys and mechanical sophistication which characterize western woodwind instruments,” says Mayers, the shakuhachi “possesses a rare immediacy. The first resonant note which the student achieves—the sensation of the air column and bamboo body vibrating at his fingertips—is a remarkable experience.” Producing a tone on the shakuhachi is indeed remarkable, not only for the uniqueness of the feeling but also for the difficulty of the playing technique. Getting a sound out of the instrument at all is the beginner’s first feeling of accomplishment, as it usually takes several days or even weeks of practice to be able to do even this. Even from the outset, the shakuhachi requires patience and concentration, and thereby reveals its usefulness as a tool for meditation in the form of body
awareness that monitors posture, hand and arm positions, head and lips, and especially the angle between the flute and the chin. Finding and maintaining just the right angle is the crucial variable for obtaining sound. Carl Abbott points out that even “the small lip muscles around the opening of the lips... are an important link between the sound and the mind.” Strengthening these muscles and having the presence of mind to consciously “roll the fleshy moist and smooth part of the inner lip very slightly outward towards the blowing edge” will result in a greater fluidity of control over the sound that corresponds directly to the quality of awareness in a player (9).

The “empty vessel” communicates a state of mind even before the first note is played. The first way in which playing shakuhachi functions as meditation comes in the process of mastering a technique for a particular instrument, becoming so intimately familiar with the physical being and inner workings of the object that we begin to sense it as a part or extension of the body, capable of being felt with the same quality of awareness as any other part. Just as the embouchure leaves room for a human element in its design, some kind of intrinsic “flute element” is created within the inner workings of the human body when it acquires the sophisticated muscle memory associated with shakuhachi practice. The separation between self and flute is dissolved, and the bamboo interface between the mind and its outward expression becomes seamless. While it can take a year of playing a given flute before the player comes to fully know it in this way, Ronnie Seldin assures us that “eventually, the self-flute duality is lost; it is a part of you, and the music comes from a union of hands, mouth, breathing apparatus, flute and spirit” (37).

A similar transformation occurs in crafting Native American flutes and in playing some of the same instruments over a period of years. The flutes which have been with me the longest seem almost to have molded themselves to me, so that playing them comes as an effortless and
natural activity for my body, the tonal meanings of their scales infused directly into my fingertips. Knowing exactly where and how to find each note with hand gestures that have become second nature, there is no longer any obstacle or lag time between the sounds my mind wishes to produce and my fingers’ ability to respond. Douglas Spotted Eagle indicates a parallel tendency in Native American thinking that considers the flute to be one with the self, worthy of the owner’s respect and identification if it is to play properly. He reminds us that the NAF is always “an extension of the person playing it... without care you will never bring forth the emotions contained within either instrument or the owner. This instrument is born from a living being, a tree, and therefore should be respected as any other thing on this earth” (38). Complete identification with a particular flute, which experiences self and instrument as tangible extensions of one another, becomes a way of expressing a larger identification with the universal life that is the root of both self and flute alike. The woodworker-musician, feeling an identity at the core of his being with the life of the trees he encounters in the forest, experiencing renewal and sustenance through each breath taken in their presence, expresses his reverence by turning the death of a tree into an occasion for the crafting of beautiful instruments. As Johnson puts it, “trees are the most eternal living things in the universe, and it is a privilege and responsibility to give second life to these majestic creatures” (73). The circle is complete when human life comes together with the life of a tree in its new form as a flute, and the two harmonize for a brief moment in time as their lives cross paths. The flute maker becomes one with the wood more and more completely throughout its time in his hands, from finding it in the forest and the start of construction through his mastery of technique on the finished instrument—at which time the identification has become a complete actualization of the oneness he had sensed from the beginning, in which part of the forest is actually now experienced as a part of his body.
As for the shakuhachi, a sense of oneness with nature is thought to arise from the particular sounds and rhythms that imitate aspects of nature. The naturalness of these sounds in turn is fostered by a state of mind that is already one with the physical structure of the bamboo as an extension of the body, as well as the natural elements one is seeking to depict. Carl Abbott identifies asymmetry and nuance as the essential features of Zen Buddhist compositions for the shakuhachi, as opposed to music with a regular rhythm and symmetrical structures to suggest a sense of progression through time. Buddhist music is only loosely based in time, he says, so that with “no foot stomping beat or melodious aesthetic to heed[,] these fluid compositions parallel the unaffected qualities of nature,” and carry a sense of aimless spontaneity like the sounds of gurgling water, rustling leaves or pounding surf (1, 5, 20).

Carol Lem relates some of her experiences of learning shakuhachi from a master whose teaching “focuses on shaping the sound to the music’s content” as a reflection of nature (103). He would explain to her that “each note, each phrase has a shape,” like a leaf or a root (100). The shape is like a type of arc in the sound, a natural form it takes on due to the waxing and waning of the breath over time. A sound played using the sasabuki note form swells and then gets small, imitating the shape of a sasa or bamboo leaf; while the kusabibuki note form has a funnel shape, beginning large and ending in silence (Seldin 46). Practicing these shapes and attempting to merge her consciousness with them to realize their ideal form, there eventually came times in Lem’s practice “that I feel like a windswept tree, or like falling leaves. When these moments come and my entire being resonates through the bamboo, the shakuhachi is a projection of self. And the you who walked into the practice room an hour before is not the you blowing Sagariha. In fact, there is no you. There is only the practice room (dojo), the shakuhachi, and the playing” (105).

The tone of the shakuhachi in Zen practice is intended to make us lose ourselves in the same way that we do in our natural encounters with
falling leaves or gurgling streams. The power of sound had long been recognized by Japanese Buddhists in their pursuits of liberation, the most famous example of which is found in the story of Dogen, the founder of the Soto school of Zen, who attained enlightenment, it is said, “at the cry of the nightingale and the sound of bamboo splitting in the forest” (Blasdel 43). Yet the shakuhachi ultimately became the only melodic instrument ever incorporated into Zen Buddhism as a part of its formal religious practice to foster the floating, timeless sense that is achieved in meditation. This must be partly due to its uniquely flexible embouchure which allows for so much depth and subtlety in the tonal color, and so much versatility in the player’s expression through the refinement of technique; and as noted before, the very rigor of the techniques themselves also likely played a role in the shakuhachi’s adoption as an instrument of meditation. Music that was especially effective in promoting meditative states for player and listener alike developed and evolved in monasteries throughout Japan, and was passed down through direct transmissions from master to student without ever being written down. For this reason pieces were easily lost during periods of social upheaval throughout the centuries, and many compositions and musical lineages died with their masters before they were able to take on enough students to continue the tradition. The repertoire of Buddhist shakuhachi pieces known today is but a small fraction of what once existed, and was largely recovered by the pioneering work of Jin Nyodo, a musicologist who traveled throughout Japan in the early 20th century to learn and transcribe as many of the compositions as he could from the remaining schools.

In listening to recordings of them now, these pieces seem not to have lost any of their freshness over the centuries, but retain the sense of timelessness which they originally evoked in a moment of spontaneity. We can almost trace the sounds back through the generations to the enlightened minds that first produced them, feeling that the quality of
enlightenment itself has been retained as well. And despite the
traditional emphasis on exact repetitions from teacher to student, new
tones produced in spontaneity by modern shakuhachi players can also
exhibit this quality, when mind, body and bamboo are united as a single,
perfect unit. In 1974, well known shakuhachi master Kurahashi Yodo
said, “When the pure qualities of the bamboo become infused with the
breath of the living, human soul—Heaven and Earth become one—a tone
rich in the essence of nature flows forth” (qtd. in Seldin 124).

**Komuso: Emptiness Monks**

The shakuhachi came to prominence in Japan during its medieval
period, with the advent of the Fuke sect of Zen Buddhism in the 11th or
12th century. *Fuke-shu* represents the oldest Zen style of shakuhachi
playing, and they were the first to use the flute as a primary means for
attaining and expressing enlightenment. The sect is named after its
alleged founder, Fuke-Zenji, a Chinese master who lived around the
ninth century. He was known for going around and ringing a small hand
bell, hitting students over the head in an attempt to cause instant
enlightenment, and then running off into the hills, “in the age-old
honored tradition of the crazy Zen monk” (Seldin 24). Although Fuke-
Zenji did not play a flute himself, he is considered the originator of the
meditative flute tradition because his bell-ringing is said to have provided
the inspiration for the first composition. A disciple named Zhang-Bo
attempted to capture the profound essence of the bell sound in a melody
he composed on his Chinese *tung x’iao* flute, a piece which he called
*Kyotaku* (“hollow bell” or “empty bell”) out of his frustration at being
unable to fully capture the enlightened essence of Fuke-Zenji. Later, a
16th generation descendent of Zhang-Bo named Zhang-Can was still
playing *Kyotaku* and carrying on the tradition of flute playing as
meditation practice. He taught everything he knew to Kakushin, a
Japanese pilgrim who came to China in 1249 to study the religious use
of the shakuhachi, and returned to Japan in 1254 with four disciples
who all used the flute as part of their practice. Kakushin was thus the founder of the Fuke sect in Japan, said to be the continuation of a direct lineage which could be traced back 400 years to a monk living in China. One of Kakushin’s later students, Kichiku, would become the next important figure in the sect, introducing the practice of playing shakuhachi exclusively while begging, while doing away with other rituals such as ringing a bell and chanting religious verses (Seldin 23, 20).

The monks of this sect were initially called *komoso*, or “straw mat monks,” for the bedrolls they traditionally carried. Later this changed to *komuso*, “monks of emptiness,” a term more evocative of Zen practice said to come from a monk who took the religious name of *komu* (“empty nothingness”) and wore a basket on his head (Seldin 59, 21). The image of a man wearing a tengai basket that covers his face down to the chin, and playing a shakuhachi underneath, has been the one most associated with the komuso ever since. The basket was said to preserve anonymity, symbolize detachment from the world, and suppress the sense of individual ego. Kyomu, a descendent in Kichiku’s line, declared that it was to be irreverent for a komuso to remove his basket-hat when meeting with others, the idea being to assume a life of seclusion even in town. Komuso were also supposed to refrain as much as possible from talking, communicating their intentions by their actions. If asked where they were going, they were to reply cryptically “Whatever direction or quarter,” or “There is no place wherein to dwell” (Seldin 59). Their lives of aimless wandering were always shrouded with mystery, anonymity, and secrecy. If asked who he was, a komuso would only reveal his religious name and the name of his temple. If pressed further on these lines of questioning, he was to respond, “What can you ask of one who consists of voidness wrapped up in the form of a body, and who carries the shakuhachi of infinite emptiness?” (Sanford 426). If one of them died on the road, his body was simply to be rolled up in his bedroll along with his shakuhachi.
and other possessions, then buried under his *kekon-bari* “Heaven and Earth” placard as a grave marker, which bore only the words “Non-Born, Non-Dying” and his religious name (Seldin 60).

Obviously the komuso had a very solitary and lonely existence. But their apparently religious austerities and removal from the world served a dual purpose: from the time of their early history, travel around Japan was severely restricted by the ruling power of the Shogun, but the Fuke-shu managed to gain exemption from these restrictions by arguing that their spiritual practice required them to travel from place to place, begging for alms and playing the shakuhachi. They were granted exclusive rights to carry their instrument and the freedom to move wherever they pleased in exchange for becoming spies for the shogunate, which some portion of them did. The anonymity afforded by their dress and antisocial customs was very helpful in making the spies blend in. However, ordination as a komuso monk quickly became an appealing option for those who had other reasons to travel. Ex-samurai had traditionally faced few options other than retiring to a life of solitary contemplation as a monk, but now the life of a wandering komuso presented itself as an alternative with a few key features and freedoms that made it more desirable (Seldin 21). Due to a large influx of former samurai, spies, and other counterfeit members who sought a free-and-easy lifestyle in the role, komuso monks developed “a reputation for extreme belligerency,” violence, disregard of danger, and “a disregard for conventional personal hygiene practices” (Sanford 412, Seldin 61). When swords were banned, the shakuhachi became heavier, elongated to the traditional length of the samurai short sword, and used as a club with the thick root end of the bamboo as its base.

The juxtaposition of such gruff, dubious men, who used the komuso’s distinctive garb for primarily personal ends, with the serious aspirants of the sect who still earnestly sought liberation through music, is comical. Yet despite the advantages of free travel, even the initially-
insincere members of the Fuke-shu found themselves living a lonely, rootless life which isolated them from other people; and many of them took up shakuhachi as a serious practice for comfort and entertainment. As Christopher Blasdel notes, “not having a physical place to call home strengthens the need to create a home in the music” (x). And while their original claims to Zen status were largely artificial, James Sanford explains, as time went on and as the insincere members began to absorb genuine Zen attitudes and ideals through osmosis, “a process of actual Zen assimilation took place” (429). Members who had been committed to the sect all along, “sincerely drawn by its developing Zen theology and perhaps more specifically by its utilization of music as a means to enlightenment,” were meanwhile concerned with purifying it, hoping that “the whole movement might eventually be made to take on the serious purpose which they themselves had already embraced” (414). This meant reforming or weeding out imposters, and ritualized, nonverbal greetings were developed for use when komuso encountered each other outside of the temple, including a call and response technique on the shakuhachi: one komuso would play a phrase called *Yori Dake*, and the second would respond with *Uki Dake*. Anyone dressed as a komuso but unable to play this piece was exposed as an imposter or spy (Seldin 63). Punishments for this could be rather severe, just as they were for playing secular, folk music on the shakuhachi within the monasteries. These popular, lighter pieces were viewed as another contaminant that was diluting the spiritual essence of the Fuke tradition, as they had already been mixed into the repertoire of some schools and given misleading titles that resembled those of the classical compositions. To counteract this, the schools resisted allowing the original Zen pieces to be simplified or popularized in any way by making them either easier to play or to listen to; some in fact favored “less accessible versions which involved technical difficulties requiring very disciplined, almost yogic, concentration and control of breathing” (Sanford 444).
The religious pieces are called *honkyoku*, “the original pieces,” while secular pieces are known collectively as *gaikyoku*, where *hon* means “original,” and *gai* means “outside.” The importance of keeping the original Zen repertoire intact and separate from the other pieces is that it is viewed as the Fuke-shu’s legacy, tracing all the way back to Fuke-Zenji himself in the ninth century. Fuke went around ringing his bell in an expression of pure enlightenment; Zhang-Bo imitated it on his flute to produce *Kyotaku*, a piece later known as *Kyorei*. *Kyorei* was considered to have slowly evolved so far away from *Kyotaku* over time that at some point it was decided that it was no longer the same piece, and that the original was lost. Just as Zhang-Bo could not capture the essence of Fuke and his bell, *Kyorei* is believed to have lost the purity of *Kyotaku*, and together they are both “yearning for the bell” as inadequate representations of the enlightened state. (All subsequent Reibo style pieces in the repertoire are said to share this frustrated sense of longing for that which was lost or perhaps never attained.) Nevertheless, *Kyorei* is “the closest thing we have to the origin for all the other *honkyoku*,” and therefore “embodies the foundation, the fundamental quality of all *honkyoku*” (Seldin 81).

The next two pieces added to the repertoire are held in high esteem along with *Kyorei*. Kichiku, student of the monk Kakushin who brought the Fuke sect to Japan, had just set off on a pilgrimage to teach *Kyorei* to everyone he met, when he fell asleep on the top of a mountain and had two separate dreams in which he heard two additional pieces. The first dream finds Kichiku floating in a boat, with the mist blocking the moon, and the sound of a flute coming from the empty sky, “a remote, mysterious melody, beyond the power of speech to describe” which issues forth from the depths of the surrounding mist, according to the descriptions of a historical document called *Kyotaku Denki* (qtd. in Sanford 430). The melody ends and the second dream begins with the mist congealing into a “solid lump,” from which a second melody is born,
“a strange, wondrous melody unlike any ever heard on this earth.”

Awaking suddenly with the strong desire to capture these two melodies on his own flute, Kichiku discovers that their essence is still with him and returns directly to his temple to receive permission to transmit these newly revealed pieces along with Kyorei. When Kakushin heard the melodies he said “These are truly gifts from the Buddha,” and thus the second and third honkyoku, Koku (Flute in an Empty Sky) and Mukaiji (Flute in a Misty Sea) were canonized (431). Together with Kyorei, these pieces are known as the “‘San Koten,’ the three classical, oldest honkyoku and the most original and sacred music in the shakuhachi repertoire” (Seldin 77).

Based on this foundation, pieces continued to been added over the years in like fashion to the repertoire of genuine, original Zen compositions. The problem with all of this from the modern perspective is that the Kyotaku Denki which traces the history and origin of the Fuke sect and its honkyoku back to Fuke-Zenji, despite the appeal of the story it weaves and the steadfast belief of so many generations of komuso, has been proven historically inaccurate and a forgery. Near the time of the Fuke-shu’s inception, komuso leaders needed a way to legitimize their sect to secure the support and recognition of the Shogun that would grant them free travel, and at the same time defend them against accusations of getting a free ride on the coattails of Zen without actually taking part in a serious religious organization. This involved producing evidence of the deep roots and long history of the sect, connecting it by direct lineage to recognized figures of Chinese and Japanese Zen (Sanford 415). Fuke-Zenji did exist, but it is unlikely that any of his disciples actually played the shakuhachi; the origin of Kyotaku itself may very well be a fabrication, along with Kichiku and his dream melodies. The Fuke sect had more humble beginnings than the fallacious document implies, and the traditional history it constructs “was, in fact, a fantasy forged and disseminated in the middle of the Tokugawa period.
by komuso leaders who were engaged in a quite conscious program of self-legitimization,” says Sanford. “Prior to this process of rationalization, the komuso had been no more than a guild of begging musicians whose only connection with religion was a very nominal claim to the status of Buddhist lay-brother, a status that functioned primarily to justify their practice of begging for alms” (412-3).

This revelation takes much of the mystique away from the komuso, and comes as a disappointment to any shakuhachi player who has felt a connection to their story as told by the *Kyotaku Denki*, which seemed not only to codify and make solid the relationship between shakuhachi and the pursuit of enlightenment, but also to provide a solid basis for the *honkyoku*. Blasdel confesses that when he first read the document, “I wanted very much to believe in it, even though I knew it to be myth.” The story has all the right elements: “the crazy monk Fuke ringing a bell while strolling around temple courtyards and city streets... the disciple so eager to learn that he imitated his master with a flute,” and the spiritual pilgrimage of Kichiku, “who goes out to find his own enlightenment, experiences a grand, seductive epiphany on a mountaintop and then returns just in time to receive the final blessing of his guru” (40). The universal appeal of the story reinforces its efficacy as myth, however. The historical inaccuracy of the *Kyotaku Denki*, though admittedly due to a blatant forgery, might still be compared to the historical inaccuracy of the flute origin myths of Native American tribes, which we do not feel so compelled to dismiss as fiction, as we recognize a different kind of validity or truth in them. We know that these kind of legends serve a different purpose in their cultures than that of strict historical accuracy, but rather function as stories through which a tradition and one’s place in it can be understood. Although the *Kyotaku Denki* did misrepresent itself as literal truth, perhaps its authors ultimately intended it to serve this secondary kind of purpose for members of the sect after the initial benefits of recognition were secured.
As Blasdel says, “it does retain validity as a myth reaffirming the shakuhachi’s connection with meditation and the role of sound and music in seeking spiritual enlightenment” (40).

**Suizen: Attaining Buddhahood in a Single Tone**

With the historical foundation of the three original pieces stripped out from under us, and therefore without a legitimate historical precedent to turn to, how can we reliably distinguish between true *honkyoku* and the others? Ronnie Seldin notes that the term *honinkyoku* is sometimes used as well, meaning not just “original music,” but “music of the original self” (39). So in looking for authentic *honkyoku* we need not look only for documentation of the alleged origin of a piece, but more fundamentally for something that comes from one’s own origin. This is something we can sense or intuit directly simply by listening to a piece, since the original self of the player is the same as the original self of the listener. Perhaps there is something to be read into the accounts of the San Kote*n* as stories, if not in their accuracy as facts—there is something of significance in the idea that Kichiku’s *honkyoku* melodies came to him in the form of dreams.

We find a similar concept of “dream songs” in Native American culture, which “are not composed but are said to come to the mind of the Indian when he has placed himself in a receptive attitude” (Francis Densmore, qtd. in Spotted Eagle 110). While Kichiku received his songs in actual dreams, the term “dream” has a wider meaning in Native American culture than just the experiences that occur during natural sleep, and “implies an acute awareness of something mysterious” that can occur even while awake. Songs *can* come to the native person during REM sleep “if his mind is conditioned to such an experience, but the first important dream comes to a young man in a fasting vigil. He is alone some silent place, and his mind is passive, as he hopes for an impression to come to him from a mysterious source. The silence becomes vibrant, it becomes rhythmic, and a melody comes to his mind. This is his ‘dream
song,’ his most individual possession” (111). A dream song in this sense is essentially something that we experience as received, rather than given by ourselves. The melody seems to come into one’s mind from an unknown or mysterious source, as if from outside of oneself; dreaming is the act of becoming attentive to this mysterious source. One must be in a receptive, focused state of awareness to experience the dream song arising in us of its own accord without imposing any of our preconceptions on the melody. Without any conscious endeavor on our part, it simply springs forth from the bottom of everything, penetrating through the silence to enter our minds spontaneously.

Perhaps the “mysterious source” of dream songs is experientially akin to the original self referred to in Zen. The “music of the original self” implied by the term honinkyoku would then be songs that are received, not composed, in an attentive frame of mind—a more beautiful and rare experience than mere compositions in which the player retains some sense of conscious control, the music of the original self abandons all control and removes all sense of individual self and of ownership from the act of creation. This is why the oldest songs are often the most revered in both Native American and Japanese Buddhist cultures, passed down from one generation to the next—they are viewed as ancient and sacred gifts. It is said that “all the old songs were ‘received in dreams’ while modern songs are ‘composed’,” causing them to be more highly valued by the Native Americans, while according to the Japanese myth, Kichiku and Kakushin considered the young monk’s dream songs to be gifts from the Buddha (106). The religious connotations of honkyoku make it appropriate to think of them as revelations, especially the three oldest pieces (San Koten) for which we have such stories. And indeed, Sanford observes of Kyotaku, Koku and Mukaiji that “these classics were considered more products of revelation than of composition” (430). It was more important to preserve the original integrity of the music received in such rare experiences than to focus on
trying to create something of one’s own; hence the emphasis on memorization and repetition of the pieces of the classical repertoire, through which one could eventually experience the mind of the original self attained by the players of these sacred pieces when they were first received.

Of course, this is not to say that later pieces added to the honkyoku repertoire are not equally respected and thought of as revelations, although the frequency of new additions has diminished over time. Jin Nyodo’s 20th century piece Daiwagaku is among the most recent, and he did not call this a composition. “He believed that good music cannot be created through the intentions of a single individual,” explains Seldin. “Rather the creative process of the universe manifests itself momentarily in one human being so that the piece is not composed... but is born” (134). The defining feature of honkyoku from this perspective seems to be the quality of arising from a creative spontaneity that has nothing to do with the intentions or will of the individual, but consists in actively focusing the attention on the activity of the sound itself to uncover its natural direction for that moment. The most powerful and dynamic improvisational tool available to the musician is actually the cultivation of her own awareness, for the nature of that awareness itself is the student’s best teacher. The more pure the awareness of sound, the more free it is from thoughts, preconceptions and a sense of self as performer, the more uninhibitedly clear, strong and beautiful the melody can become, as if we were drawing it from some ancient and primordial source. One shakuhachi master, Miyajima Sensei, gives the following instruction: “Listening carefully to the tone, where or how does it move and in what direction? When you discover the answer, the tone itself will reveal many directions. Do not try to control it yourself!” (Yoshizawa 107).

This notion of creative spontaneity is an important aspect of the komuso’s overall program of meditation practices that utilize the
shakuhachi, called *suizen* or blowing meditation. The term *zen* comes from the Chinese word for meditation (*chan*), while *sui* is the Japanese word for blowing. So just as *zazen* is described as “just sitting,” where the posture itself is the meditation and the enlightenment, *suizen* becomes the practice of “just blowing” through which the clarity of pure awareness arises within the posture and breathing of flute playing, and enlightenment takes place in the very activity of producing a tone. Taking up the posture itself—slowly raising the shakuhachi from the lap to the lips, eyes cast down, back straight—triggers a state of meditation that is also a readiness to begin playing (Lem 104). The posture’s effect on attention is primarily under the influence of the lower brain stem, according to Carl Abbott: “This area is lifeless, when the chin tilts up, the jaw sags down and the thoracic cavity caves in. This, in turn, disrupts the vitality of the entire spine” (8). To correct for this blockage and open up the chest and spine to a free flow of activity again, he recommends visualizing a string connecting the back of the head and the base of the neck on a straight line up to the sky, lifting them upward and pulling slightly backward. Standing against a wall and pressing the neck flat against it is also helpful for getting a sense of the proper alignment of the upper spine for practice in everyday life. It is best to make a habit out of keeping the spine extending upward, for “meditation is most effective when it’s continuous, and not just a ritual held at certain times... maintaining this spinal lift helps you remember watchfulness and natural breathing” (8).

When the most beneficial posture has become second nature, so will the increased levels of mental alertness that go along with it. The body should feel like it is sinking down into and rooted in the earth, letting go into gravity as it is supported by the structure of the skeleton, with only the spine rising straight upwards. Therefore relaxation of all parts of the body uninvolved with the playing is also important, bringing awareness to the areas where tension has unconsciously or habitually
built up, and releasing that tension (9). This should remind us of standing like a tree, and the theory behind related chi kung postures which involve relaxing as much of the body as possible around the stability of the spine. And indeed, we often see depictions of peripatetic komuso standing in a very similar position while playing their shakuhachi, to facilitate the free and easy movement of the breath through the body. The posture more commonly used indoors for the same purpose is a variation of the yoga posture called virasana – sitting on the heels of the feet in a kneeling position, with spine straight.

In practicing suizen, the breath which we try to open up comes from the hara, the stomach-center of the body known as the tan t’ien in Chinese and located just below the navel. It is considered at once our center of gravity and the major energetic hub that regulates the flow of chi throughout our body (and thus in some ways, the seat of consciousness as well). Holding our inner reservoir of energy, it can especially be felt with the expansion of the abdomen in deep, diaphragmatic breathing (the Japanese term hara also literally means simply “belly”). This “Ocean of Chi” functions at its best when all of the smaller rivers and tributaries that lead away from it are unobstructed. Thus shakuhachi practice tries to retain such an unobstructed state in the physical posture, and “two traditionally acceptable positions that ‘free the hara’ are either standing, or sitting seiza style [virasana] by kneeling with legs folded under the body, and the feet either forming a V, or with one foot on top of the other” (Seldin 36).

Although the instructions appear very explicit, variations on these poses and most other meditation postures are also fine; the important things are the straightness of the spine and the openness and relaxation of the belly. The posture has to allow fast, yet full contractions of the diaphragm while playing to achieve the maximum intake of air over the shortest interval of time on the inhalation; as well as smooth flowing movements of the diaphragm on the exhalation that avoid any vibrations
or jerkiness in the tone due to running out of breath too quickly (Abbott 8, 18). Obviously, the player must also cultivate a greater awareness and control over the diaphragm muscle, which along with the lips and tongue, defines the timbre and expression of the tone and allows the creation of some of the most complex sounds – a fact of playing the NAF as well as the shakuhachi (Spotted Eagle 52). The next challenge for the shakuhachi player after producing sound is in strengthening and controlling it, and running out of breath too quickly is said to be a problem for a few months (one that I have not yet surmounted in my dabbling with the shakuhachi) until one has toned the muscles of the lips and diaphragm (Abbott 7). Nevertheless, the foundation of proper abdominal functioning is good posture, and it is difficult to overstate the importance of the erect spine which in itself allows full, even breathing to come more naturally, in contrast to slumped postures which prevent the diaphragm from moving air efficiently and constrict its route of passage out of the body. Good posture, efficient breathing, and the energy of attentiveness all reinforce one another, and “after you establish good playing posture, your playing improves because your breathing improves,” says Abbott (8).

The breath in suizen is the emptying of chi from the hara into the bamboo – the conversion of human energy into the more tangible energy of sound for all to perceive. The feeling of chi in playing shakuhachi “is most easily experienced when a sudden expulsion of breath occurs... which produces an explosive combination of breath and tone,” suggests Seldin (19). The release of energy normally experienced with natural exhalation is now extended with the addition of a flute, and has become mingled with the expression of a feeling, the transmission of energetic meaning to the ear. Invigorated by this ongoing exchange of breath-energy and the gradually increasing emotional energy of tonal meaning, I find that my best flute playing sessions have a tendency to facilitate the building up of great reserves of physical energy and lung capacity that I
am using to play. While the first few breaths expire more quickly, I find by the end of the session that I am consistently able to amaze myself at the capacity of one breath. “You may feel that you are pushing your body beyond the limits of its endurance,” comments Lam Kam Chuen. “At first, the effort seems entirely physical. Then you begin to perceive that it is the entire field of your body/mind that is being transformed” (47). The emotional heights of the musical experience actually seem to feed into the capacity of our reservoir of chi in some way, mysteriously extending the air flow longer than was expected. Komuso practitioners of the esoteric Neza-Sa-Ha style of suizen employ vigorous applications of an unusual breathing technique of rhythmic panting called komibuki (crowded breath) in playing the honkyoku, which bring them far beyond the normally-perceived limits of human energy. This technique is “associated with the esoteric practices of mind-body discipline in which the religious adept controls body temperature to the extent that one is able to sit in the snow and melt a circle” (Seldin 107).

There are many reasons that playing the shakuhachi as a spiritual practice was termed “blowing meditation” and came to be identified primarily with the activity of the breath, although this aspect of suizen is easy to overlook at first. The mechanics of playing dictate that one breath be equal to one melodic line. Modern transcriptions of the honkyoku even notate them in terms of numbers of breaths, indicating when to take an inhalation, such that there will be a pre-established number of notes one is supposed to hit with each breath to complete its phrase. Given that the player spends so much time breathing out, it is advisable to inhale promptly every chance he gets, during breaks in the rhythm and pauses between one melodic phrase and the next. He should take quick deep breaths which he exhales slowly and steadily, avoiding playing too long on one breath by planning them out ahead of time (Abbott 18). Each breath is then manipulated in various ways, literally bending the air stream into different pitches with the fingers by modifying the length of
the tube it is blown into, and thus of the resonating air body; also extending the breath, controlling its force, and refining it to a steady stream are all practices whose success we can gauge by their audible aspect, though they have an inner aspect as well that is related to their influence on the flow of energy within the body. The fact that these practices are carried out for the music is interesting, for the mind-body effects that end up resulting would be quite profound in their own right, as benefits of a set of breathing exercises that could be performed with or without the presence of a flute.

On its own, the breathing of suizen practice would be something like a long series of alternating quick inhalations and slow, extended exhalations. Yet often, breathing exercises on their own can be distracting or confusing for the student of meditation. Chi kung texts will stress that the natural rhythm of the diaphragm that is deep, even and slow is not something to be attained by conscious effort or forcing the breath to be a certain way; rather, the natural rhythm gradually comes about on its own when we simply observe the breath as it already is. Conscious effort to make the breath conform to some particular, preconceived pattern is likely to make matters worse by removing it from its natural course. “Thought given to the breath becomes a weight upon it and naturally holds it longer in its movement, altering it from what it would otherwise naturally be,” says Inayat Khan, who suggests that “following” the rhythm of the breath and keeping it uniform will bring better results than concentration on attaining some external pattern (ML, 217). Similarly, attempting to “inhale short, exhale long” in the style of shakuhachi playing without the flute would likely prove a more artificial endeavor than simply attaining this rhythm as a natural function of producing the tones. “When you tell a person to concentrate on a certain object, the very act of trying to concentrate makes his mind more disturbed,” he says. “But music, which attracts the soul, keeps the mind concentrated,” and seems to naturally develop our capacity for
concentration more readily than other methods by holding our attention through a sensory experience (MSM, 64).

There seems to be something about having an outer gauge of the states of our inner energies that lends itself to facilitating their organization into a smooth and even flow, simply by increasing our awareness of them. Many chi kung exercises involve moving the hands along different arcs around the body along with the pace of the inhalation or exhalation, providing the practitioner with a visual sense of its length. Paying attention to the rhythm and flow of these hand movements will naturally regulate them somewhat, and the breath along with them – the natural state of the breath is automatically perceived and moved towards when we experience how much longer or shorter we are trying to make the hand movements. In the same way, the sound of the shakuhachi provides an external measure of the breath with its own goals of rhythm and content, and focusing on the sound (paradoxically, and quite fortuitously) brings about the most efficient and beneficial form of breathing for that application.

In general, breathing is one of the strongest links between our body and our mind. The close neurological connection between the brain and respiration causes a loss of natural breathing rhythm and depth in people under stress. Too preoccupied to notice the shallow depth and irregular rhythm, the mind is thinking of one thing while the body is doing another, and body and mind are not unified. Luckily, the connection works both ways, and by bringing awareness back to our breathing again, Thich Nhat Hanh advises, “we bring body and mind back together, and become whole again... when we breathe consciously we recover ourselves completely and encounter life in the present moment” (9). Playing shakuhachi exercises the diaphragm and chest, restores the natural depth and evenness of respiration, and soothes the nervous system by removing tension – with practice, “the lungs work less and at a pace that quiets the mind” (Abbot 5). Awareness of breath in
any form leads us out of stress and into health. The practice that brings
the physical and psychological benefits of quieting the mind, and that
allows us to “recover ourselves completely,” will ultimately lead to
*forgetting* the self completely. Zen master Shunryu Suzuki once said,

> When we practice zazen our mind always follows our breathing. When we
inhale, the air comes into the inner world. When we exhale, the air goes out to the outer world. The inner world is limitless, and the outer world is also limitless. We say ‘inner world’ or ‘outer world,’ but actually there is just one whole world. In this limitless world, our throat is like a swinging door. The air comes in and goes out like someone passing through a swinging door. If you think, ‘I breathe,’ the ‘I’ is extra... what we call ‘I’ is just a swinging door which moves when we inhale and when we exhale (29).

From the perspective of the unity of the inner world and the outer world, there is actually no separate self that is breathing, since the breath does not pass from the world of that self into some other world, but moves freely in the unbounded territory of non-self. The next important feature of *suizen* is the ability of the meditative state to obliterate the distinction between inner and outer, self and other, by merging one’s consciousness with the sound that pours forth from the very source of one’s being out into the universe—*i.e.*, following the breath from the *hara* through bodies of flesh and bamboo to the outside, where it becomes audible vibration that merges into the infinite. The sound connects inner and outer as much as the breath, and serves to indicate a seamless continuity between the two, for here the sound is the outer *form* of the breath which re-enters the body through the ears as soon as it has left through the mouth.

If breathing is one of the most fundamental rhythms of the body, Alan Watts speculates, “it is also the process in which control and spontaneity, voluntary and involuntary action, find their most obvious identity,” for it can be carried out either consciously or unconsciously, and the shades of experience in between sometimes make it hard to tell the difference (198). As the tone of the shakuhachi is the outer
expression of the breath, then, it also must have this quality of indeterminacy with respect to how much control the player ultimately has over the expression and how much of it can simply be seen as the activity of the universal life itself, which lies beyond all individual control and intentions – in Suzuki’s terms, “the immense activity of being itself.” Of course, from a certain perspective, all voluntary action can be seen as part of this universal activity that transcends individual volition, and the very spontaneity of the technique of suizen lies in giving up all pretense of control over it, trusting the expression of the original self to be complete unto itself. “When you do something,” says Suzuki, “if you fix your mind on the activity with some confidence, the quality of your state of mind is the activity itself. When you are concentrated on the quality of your being, you are prepared for the activity” (105). When engaged in suizen meditation, the subjective “quality” of our state of awareness holds nothing more than the being of the tone itself, while our “confidence” in it is like the recognition that this tone is nothing other than the spontaneous expression of the immense activity of life in that moment.

Concentration on sound, whether self-produced in flute meditation or coming from an external source, in either case “leads one into a realm where there is no distinction between the listener and the sound itself,” for “the act of listening brings the world of outer sounds inside,” and conversely, “sounds lull and beckon forth the consciousness from the body” (Blasdel 42, 43). Realizing our own unity with everything in the immediacy of the experience of sound, tones begin to feel like they have entered our body, merging with us – or else we have moved beyond the body into the sounds of the outer world: “once we have allowed our consciousness to roam through the vehicle of sound, we discover, newer, finer worlds, until the entire universe seems to consist only of vibration and sound” (43). Losing all sense of direction or reference point to distinguish between inner and outer, the individual self also becomes
lost somewhere within the framework of universal being that we now seem to be experiencing directly, without any feeling of personal boundaries between self and not-self. This is the experience of enlightenment.

Kinko Kurasawa was among the most prolific of the shakuhachi masters, founder of the Kinko school of honkyoku in the 1700’s and famous for the saying ichi’on jobutsu, “Attaining Buddhahood through a single sound.” By this he meant it only takes one moment of pure awareness of the note one is playing in the present to become fully awake, as described above – awake to the basic perfection and unity of reality in which there is no sense of separate self, all manifest within that one note. This tone fills our entire being, becoming something complete unto itself, a “microcosmic existence” that leaves no room for anything else and fills the whole universe of our experience: “if we learn to search out the profundity even one tone can hold, it means we have found within ourselves the richness that is reflected in the tone” (Blasdel 45, 49). The more fully we can become present to the moment of experience we are in, the more richness of detail we find unfolding from one second to the next within the tone. In shakuhachi music, nothing is more profound than a single tone, and “what is the most meaningful is also the most simple and available,” as in the Zen saying, “The shining jewel lies in your own hand” (ix).

Recalling that the tone of the shakuhachi is viewed as a reflection of our quality of awareness – a “mirror of the player’s soul,” and considering that it only takes one tone to realize enlightenment, the komusuo’s goal is not to get it to “sound right” by conforming to an external standard, but rather to realize the state of oneness with the tone within his own awareness. In the very effort to get it right, the player risks losing the meditative function of the honkyoku to self-consciousness and performance desires. As opposed to the emphasis in Western music on properly executed technique, rhythm, etc., in suizen
“one is not conscious of playing well but is aware of following the tone, trying to become at one with that tone” (Yoshizawa 110). The player of a flute acts as both a listener and a creator, but the most important thing is to listen to oneself. As a tool of meditation, the shakuhachi helps the practitioner to look within, identifying mental disturbances by disturbances in the sound. “If I feel somewhat scattered or exhausted by the day’s events, my playing will reflect that,” Carol Lem tells us. “So I will blow ro, low D, for ten minutes. When I find thoughts entering my mind, I let them fall away... bringing my attention back to my blowing until I hear my sound (my soul) clarify itself” (104). This is something I will often do with my Native American flutes – when my playing becomes unfocused and I can sense my attention wandering by the hurried, careless sound of the melody, I slow the rhythm to a crawl and shift my focus to a single note, usually the low note in the scale played with a subtle drone, and wait for my mind to slow down as well. This is a process which can almost tangibly be heard in the sound when the mind becomes reunited with it, and the added depth of awareness seems to enhance the experience for other listeners as well.

Ronnie Seldin relates the paradox that the simplest piece in the honkyoku repertoire is also commonly the last one for students to master, as “it’s difficult to play a simple sound perfectly... like being spiritually naked. There’s nothing to hide behind” (81). He refers repeatedly to the idea that the most difficult thing to do is to play a single, perfect sound. It seems that the perfection of that sound must lie in the awareness, since to some extent “no one but the player knows how watchful he is being or whether he’s just relying on skill,” and ultimately “skill is irrelevant. With a watchful mind you’re always a beginner” (Abbott 20). The most difficult thing is therefore refining one’s internal awareness of a perfection that pervades all sound. In reference to the accessibility of the pentatonic scale, I have heard NAF players speak casually of how “you can’t play a wrong note,” or “every sound is a good
sound,” in encouraging beginners to get over their self-consciousness and play. There seems to be a similar sentiment in this community that recognizes the principle that playing actually improves with the loss of self-consciousness.

Paradoxically, the more one forgets concern with the quality of the playing (or its reflection of the quality of awareness), the better the playing becomes, so that there is some intuitively discernible difference for the listener between an enlightened tone and one still that retains a sense of ownership by the player. When we really become present to the tone, playing flute gives us the opportunity to observe the quality of our awareness and really refine the content of the emotion being experienced and expressed in the music to make it the most positive transmission of energy possible, for player and listener alike. Indeed, one of the most remarkable aspects of this process is its potential for healing not just oneself, but other people as well. The emotional charge of enlightenment itself is said to be conveyed through the sound it produces, touching all who hear it. The komuso played shakuhachi both as a means to realize, and to express liberation. They viewed themselves in the role of the bodhisattva who would wander around playing the flute to obtain food, but also to “take on the ills” of places they visited, transforming the bad karma there by expressing an enlightened state of awareness through music. When passing his rice bowl for alms, the komuso was asking for not only coins or rice, but also that his listeners put their sorrows and sufferings in the bowl, so that he could take them upon himself (Seldin 51).

I have tried “taking on the ills” of the places I play flute, often anonymously. On more than one occasion I have succeeded in transforming any negative energies or emotions of the place I am in into positive ones. Among the greatest signs of appreciation I have received from an audience has been their complete silence; other times, unknown people who were obviously agitated became silenced. Even if the effect is
only temporary, playing from a genuine heart of compassion seems to actually get the point across emotionally, and can profoundly change the mood of a situation. Kurahashi Yodo used to say that his goal was “to play the one perfect sound that would cause world peace,” to become a true bodhisattva who would wait until the rest of the world was saved before entering nirvana himself (Seldin 48). The purest use I have found for my own flutes has been playing them in this role. Whatever freedom and truth I find within the simplicity of their tone, attaining Buddhahood through a single sound, can be expressed and shared with others for the benefit of humanity.
Bibliography


