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The Role of Tone-colour in Japanese Shakuhachi Music

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Tone-colour has historically played a remarkably important role in Japanese music, often taking priority over precision in pitch. Though pitch / melodic flow and tone-colour both play important roles, the emphasis on the latter is often marked to an extent that warrants specific attention from musicians coming from a perspective that gives emphasis to pitch-precision. For example, a Jazz musician who is accustomed to "wrong" notes for the sake of expression may feel more at home when listening, while someone trained to hear classical European harmonies may perceive more dissonance. In both instances musicians will gain a deeper connection with the music described below by intentionally adjusting their field of expectation away from pitch-precision and melodic flow and towards a specific appreciation of tone-colour.

While more pronounced in comparison to traditional European music, the emphasis on tone-colour exists on a spectrum within Japanese music as well. Within ensemble music, pitch and melody play a prominent role; the same is true for modern Japanese music, especially towards the beginning of the Meiji era (after 1868) when traditional aesthetics began mixing and interacting with newly – introduced Western cultures. In previous eras, with genres such as solo and religious music, tone-colour was increasingly pronounced. This is especially true in the case of the shakuhachi, a traditionally solo instrument that developed within a religious meditative context.

The shakuhachi is a five-holed upright bamboo flute, originally played by the monks of the Fuke Zen Buddhist sect in Japan during the Edo era (1603-1868). Presently, the flute appears in ensemble music as well as pop and jazz. During the Edo era, the shakuhachi was limited to the classical repertoire of *honkyoku* pieces, known for their simple, austere character, that were used in a form of meditation. The melodies of these pieces are given life and personality through their tone-colours. Without their tone-colours, these pieces would grow quite bland, and lose their meditative quality. Consequently, and especially in older playing styles, tone-colour takes precedence over precision in pitch. Additionally, most of these pieces lack a "melody" as defined in European music.[1]

However, this is not to say that Europe has ignored tone-colour. Oswald Spengler called Bach's organ playing an "analysis of a strange and vast tone-world," (Spengler 1918:62) in which Bach's religious inclinations are also notable. Again, the unique tone-colours created by the Latin language in Gregorian chants lend unparalleled depth to ostensibly simple melodies. Generally speaking, however, the emphases of Japanese and European musical sensibilities have developed differently. In the West, melody is generally given more attention. Thus, music is viewed as the "art of time" where melodies combine pitches, dynamics, rhythms and tempi to form a temporal musical unit that exists on its own, yet independently from the instrument that is being played or the musician playing it. With the

development of harmony in Europe, melodies were also structured "vertically" to give them depth and texture. For composers and musicians, tones, pitches, rhythms, dynamics and harmony became sound "objects" to be strategically organized for the pleasure of the ear.

Historically, European musicians and philosophers were largely interested in tones that can be formalized into melodies, with tone-colour generally existing on the periphery of composition. In fact, the use of the term "timbre" dates from around the Renaissance in France.[2] While tone-colour still plays an important role in these pieces, pitch and melody are less negotiable. On the other hand, traditional Japanese music's greater reliance on tone-colour often requires the presence of a specific instrument, thus lending to a greater flexibility to pitch and melody, which is most visible in the case of the shakuhachi.
The Edo-era honkyoku solo pieces for the shakuhachi have a rudimentary succession of tones, with free rhythm and phrasing interspersed with silent breaths. These pieces are shakuhachi-specific, to the extent that they are not playable on a piano or transverse flute due to their unique tone-colour techniques. It is only after Japan opened its borders to the West in the latter half of the 19th century that we begin to see a promulgation of shakuhachi music with distinct rhythms and melodies such as folk songs and ensemble pieces.

Below, the two authors elucidate the historical, religious, philosophical, cultural, and musical principles underlying the traditional Japanese viewpoint on sound and music – a viewpoint that is found as much in the playing as in the making of traditional musical instruments. Traditionally, the tone-colour of a musical sound is given priority over pitch-precision; honkyoku compositions for the shakuhachi as well as some unison ensemble pieces might even be considered "tone-colour melodies." A concurrent shift of the attention toward tone-colour, especially for many shakuhachi players, will prove helpful in experiencing and playing these traditional works.

Tone-colour and Religion

The history crafted by shakuhachi monks places origins in the bell-ringing of a Zen priest in the Tang Dynasty (800's C.E.) China (Kowata 1981:67–72). In this particular religious context, bells were often associated with healing or religious awakening (Zhuhong 2011:261–271). In this case, Zen priest Fuke would walk through the town's streets, ringing his bell and chanting a poem designed to awaken hearers to their true selves. According to a myth that was popular among (and created by) Japanese shakuhachi monks, a flautist named Cho-haku, aspiring to Fuke's "great virtue," crafted a bamboo flute to imitate the sound of the bell. His playing was passed down through generations, eventually reaching Japan (Kowata 1981:73). As it is often the case in the Zen world, genealogy is mostly fiction, and *honkyoku* pieces actually have their roots somewhere around the 17th century in Japan rather than the 9th century in China. But this fiction serves to convey something more important: the spiritual and sonic inclinations of many shakuhachi players.

For many monks, the *honkyoku* pieces composed throughout the Edo era were used in place of sutra chanting (the Fuke Zen sect would play shakuhachi together, whereas other Zen sects had traditions of unison sutra chanting) and as a mean of meditation similar in breathing style to *zazen*, a form of silent, seated meditation employed in Zen sects. Shakuhachi meditation, like sutra chanting, incorporates an element of sound, whose role is described in the aphorism *ichi-on-jo-butsu* (enlightenment in a single tone), recalling the ringing of a bell whose "single tone" invites hearing ears into the metaphysical magic of the mundane. Relatedly, sutra chanting in Japanese Buddhist sects is performed by vocalizing Chinese sutras as is, using a simplified form of their Chinese pronunciation. Most Japanese will intone them more for their sonic effect than for their meaning. Arguably, the shift from sensing the vocal overtones created in sutra chanting to the harmonic layers of shakuhachi playing was not a drastic one. During the 2018 World Shakuhachi Festival, shakuhachi player and Buddhist nun Shuho Suto hosted a seminar detailing the link between Buddhist sutra chanting and shakuhachi honkyoku pieces. There, the shakuhachi's intent was explicitly religious, rather than recreational. According to Fuke shakuhachi master Deiko Toya, the religious conception of the flute's tone is likely derived from the *Vimalakirti Nirdesa Sutra* (Toya 1984:20), whose Chinese translation *Wéimójié Suǒshuō Jīng* is the following: "The Buddha expounds the dharma with a single tone [or "voice"], and all living beings, according to their kind [i.e., their capacity], attain understanding." Toya goes on to explain how the Buddha was said to have a very low, resonant voice – a unique tone-colour with which he expressed himself. Likewise, Fuke shakuhachi players (ideally) express their mind through their unique tone-colour, drawing those who might be listening out of their worldly concerns and into a world of truth.

The single enlightened shakuhachi tone is a continuation of this tradition; the player's entire being – their body, their mind, their breath – amalgamates into a single tone on the shakuhachi. The capacity of a single piece, then, is virtually limitless. Acoustically speaking, a single tone will be unique in tone-colour, and will be affected by variables such as air volume and pressure, the shape of the lips, mouth, and throat, heart rate, muscle tension in the upper body, chest, and abdomen (diaphragm), posture, and so on. Many of these aspects are not subject to conscious control, so that their interaction with the shakuhachi produces a tone-colouring that is indicative of the player's unconscious state. This is the "truth" that Fuke players aim for: an "as is" expression of their mental and physical state, expressed without any artificial striving on the part of the player. Those who take this perspective will often sacrifice an expected pitch for this "honest" tone-colour, as the former often entails a specific, conscious effort on the part of the player, while the latter naturally changes depending on the player's state of mind and body.

Thus the already present emphasis on tone-colour found in Japanese music is taken to another level in the shakuhachi. Even during the Edo era, there existed players (especially in the Kinko tradition, which over time became more and more distant from the Fuke tradition described here) whose purposes were perhaps more aesthetic than religious, teaching pieces to laypeople with a more musical intent (i.e., for entertainment). Kinko

master Aoki Reibo stated the difference concisely: "Fuke shakuhachi players pursue truth, while Kinko players pursue beauty" (Akita-ken 2017:12). Both approaches emphasize tone-colour in their playing, but the emphasis is more pronounced in the traditional Fuke school, which represents a meditative aesthetic for the sake of religious truth rather than public performance or entertainment. This difference persists today; while Kinko honkyoku players often have some degree of spiritual intent, their music is designed to be performed, and thus gives greater attention to pitch precision. Some Fuke players go as far as to consider it abject to create an intentionally beautiful sound (Wallmark 2012). Even if the resulting sound is not necessarily ugly; the emphasis is on allowing for an "uncrafted" sound, which may or may not be aesthetically pleasing.

Shakuhachi Construction and Shifting Values

Construction methods for the shakuhachi have shifted over time along with Japanese cultural values. Almost all shakuhachi made during the Edo era had a raw natural bore rather than a polished one. They used finger hole position calculation methods termed *to-wari* or *kyu-han wari* (literally "divided by ten" or "divided by 9.5") wherein the spacing between each of the four finger holes on the front of the flute is set at 1/10 or 1/9.5 of the total length of the flute. The result is ergonomically pleasing, but the notes are not precisely in tune according to a scale or a mode. Rather, some are a bit low, others are a bit high, and due to the natural bore shape, octaves are slightly off. The assumption is that the tones will be adjusted with the breath, according to the player's aims. Edo-era shakuhachi also feature smaller, undercut finger holes, which affects the timbre of "hitting" sounds wherein a hole is struck from above (Toya 1987:115). The resulting "pop," recalling the striking of a bell, is much less distinct or even absent on modern instruments. Along with smaller end holes (in comparison with modern shakuhachi), this feature also makes for a sound that is quieter yet richer in tone-colour (ibid.). Again, the "imperfections" in natural bamboo bores effect unique harmonic blends, giving each flute a distinct tone-colour.

In the Meiji era (1868-1912), after Japan opened itself to Western influence, musical values began to shift in a more pronounced fashion. We see the increase of professional shakuhachi makers; during the Edo era the majority of komusō made their own flutes. As the Meiji era progressed, the majority of shakuhachi made included *ji* (a plaster-like substance) inside, allowing the bore to be built up and polished to have a precise, gradually tapered shape whose cross section at any point is a near-perfect circle. As a result, these *jiari* shakuhachi, as they are called, can be made to sound nearly identical to one another. No longer subject to the variety in natural bamboo bore diameters and textures, they can also be more precisely tuned. The to-wari hole calculation method was gradually abandoned in favour of staggering the holes and modifying traditional lengths, so that each shakuhachi would be more precisely in tune with Western pitches. Finger- and end-hole sizes were gradually increased, causing an increase in the instrument's volume (necessary for public performances) while simultaneously reducing its "hollow" sound, sacrificing tone-colour in favour of volume. As the hole sizes increase, a greater volume of vibrating

air is allowed to escape, resulting in a louder sound with clearer and more uniform harmonics. Smaller holes, however, dampen certain harmonics and create more resonance inside the flute, similar to a glass jug, when blown across its relatively small opening, creates a resonant "hollow" sound. Larger openings (relative to the volume of air inside) decrease this effect. This was a necessary concession at the end of the 19th century for two reasons. First, the shakuhachi was used increasingly for solo performances rather than meditation. Second, it gained a formal position in ensemble music, such as *sankyoku* (music for three instruments), replacing the *kokyu* (the Japanese fiddle). The goal in the modern construction style is to produce a beautiful and tuned sound for the sake of entertainment, even in honkyoku playing, which means that factors like pitch-precision (especially for the faster rhythms of many solo and ensemble pieces) and volume (to be heard among other instruments in performance venues) become more important.

Tone-colour in Japanese Music

According to Japanese composer Torū Takemitsu, Japanese people have developed a sensitivity to tone-colour over centuries, thus paying more attention to the particular quality of sounds–something he sometimes calls "beautiful noise"–than to their resulting pitch (Burt 2001:238). Their attention and focus while listening is sense-oriented, rather than abstracted. As some shakuhachi teachers told to both authors during classes, Japanese melodies of the solo pieces for shakuhachi should not be conceived primarily as a succession of melodious tones, but as shifting sequences of tone-colours which are perceived as expressive forms. These pieces of course have pitches as well as melodic lines, but the tone-colours take precedence. Nick Bellando, when a beginner, was initially criticized by his teacher Barry Daido Ho-un Weiss, a Zen monk: "You're still playing 'music.'" Nick was, at the time, looking to play the piece as a melody – as a succession of pitches – rather than a succession of tone-colours. Traditionally, Japanese listeners would learn to pay attention to the quality of a sound, which is usually rough, thick or dense, before recognizing and categorizing it as a tone, a musical sound, a voice or a noise.[3]

Nick grew more aware of this during lessons with Suiko Takahashi, a Fuke shakuhachi teacher who plays as part of a spiritual practice. Suiko taught in a traditional embodied style, with teacher and student simply playing together with little or no verbal explanation concerning techniques; the student learns by watching, listening, sensing, and playing. Initially, Nick was confused by the fact that while Suiko had a good sense of pitch, he would often play using pitches that seemed to be inaccurate, often microtonally higher than the pitch expected. Even if something about these "wrong" pitches still seemed "correct." Later, an encounter with Atsuya Okuda, an accomplished jazz musician and shakuhachi player, helped understanding. Atsuya also has a musician's sense of pitch, yet his shakuhachi playing often includes "wrong" pitches. As Nick began inquiring about the role of tone-colour, he learned from Atsuya and other musicians that tone-colour is given priority over precision in pitch. Pitch is still important, of course, but the player need not to strain to achieve it. In the case of shakuhachi, the player first attains tone-colour that is comfortable to play, and only if desired, then adjusts the pitch, as long as this can be

achieved without introducing undue tension into the body. Again, pitches that are "off," when played intentionally, serve to expand the range of emotional expression.

Another example of sound quality having priority is seen in a traditional chamber music ensemble called sankyoku, involving *koto*, *shamisen* and shakuhachi.[4] The pieces in these repertoires are heterophonic: the three instruments basically play the same melody, but each instrument colours the melody with its respective particularities. During a music therapy conference in Aomori, Japan in 2019, Nick learned from one of the presenters that many such musicians, when playing in unison, will go as far as to intentionally lower their pitch slightly, allowing for what could be perceived as a degree of dissonance, so as to emphasize the timbral distinctiveness of their instrument. The particular appeal of this music is not so much in its melodic line (though there obviously is one), but rather in the tone-colour interplay between the three instruments. At key moments in a piece, the particular sound of one instrument will be given prominence – a motive or a phrase on the shamisen, a short rhythmic phrase on the koto, or one particular note on the shakuhachi – while the others remain in the background. At times, there are *kake-ai*, short motivic responses between two instruments. At other moments, no particular instrument will be predominant. The musical appeal of these pieces is in the tone-colour textures created between the three instruments.

This sensitivity to tone-colour is not present merely in music being played and listened to; it also plays a prominent role in the making of the instruments themselves. Most if not all Japanese musical instruments are made in such a way as to produce specific, often noise-related tone-colours. One particular instrument in this respect is the shamisen (the Japanese three-string lute). Some schools, or *ryū,*[5] make these instruments with sonorities that purposefully distinguish them from other schools. The first musicians to experiment with the shamisen were the *biwa* (Japanese lute) players. The original shamisen, coming to Japan from China, employed a one-finger plectrum; the biwa players preferred their much larger plectrum, called a *bachi*, which they adapted to the shamisen. The bachi's "hitting" techniques produce a pulsing noise that is especially characteristic on the *Tsugaru jamisen*, an iteration of the instrument originating in Aomori that has recently gained global popularity.

As for the biwa, one thing that is common to all models is the *sawari*, a sonic effect produced by the contact of an open string with the surface of a fret or the joint of the neck and the peg-box. The effect exists largely due to the instrument's large frets. The sawari is regulated by carving the tops of the frets and the surface of the upper bridge, and is produced when the strings "rattle" over the frets. On some models, the sawari can also be regulated by inserting a strip of bamboo between the strings and the frets. The player can also hit the soundboard with the plectrum to produce a percussive sound, either on its own or in concert with one or more string being plucked. Additionally, the player can produce different tone-colours by "rubbing" the bachi on the strings, creating a murky and

mysterious effect, by bouncing the bachi over the strings, producing arpeggios or tremolos, or by inserting the bachi between the strings to rattle them (de Ferranti 2000:79-87).[6]

Tone-colour Techniques on the Shakuhachi

The prominent position given to tone-colour is found in many playing techniques of the shakuhachi. Here we also include techniques that are also common to more recent schools of honkyoku, such as the Yokoyama school, which inherited many Fuke shakuhachi techniques as well as developing new ones. Among the diverse tone-colours that can be produced, the most characteristic are as follows (in no particular order):[7]

- *Muraiki*: Meaning "erratic breath," this technique refers to a forceful and sudden breath. It is used in three different ways: *sorane*, which is softer; muraiki, forceful but not intense; and *kazaiki*, most forceful. It is used differently depending on the school, the style or the player. It is a breathy sound, capturing the sound of wind, and takes place at the beginning or at the end of a tone or a phrase. Its usage has been largely developed in the 20th century (it is not used in traditional honkyoku pieces).
- *Korokoro*: a type of fast trill that is produced by balancing the forefinger and ring finger of the lower hand over the two lowest holes.[8] The forefinger starts from an open position and then closes the second hole from the bottom, while the ring finger remains on the first hole. The ring finger is then raised to open and close the first hole, while the forefinger stays on its hole; the process repeats so to produce a fast trill, generating a kind of fluttering sound that is unique to the shakuhachi.[9] While the two bottom holes are alternatingly opened and closed, the uppermost (back/fifth) hole is either left open, or the uppermost two holes (fourth and fifth) are both partially shaded. Though the technique will often naturally lead into a more distinctive pitch, the effect itself is composed of several rapidly-changing pitches that are heard as tone-colour rather than a melodic pattern.
- *Nayashi*: Indicates a downward and then upward movement of the head while producing a sound. This technique is usually executed in three ways, though more exist. When it appears before a tone, it is called a *kamuri*. Here, the sound of the tone starts about a half-tone lower and then moves up to pitch with a slight glissando. When it occurs during a sustained sound, the tone starts in its normal position, followed by a downward head movement, lowering it about half a tone, and then a return upward. When by itself at the beginning of a phrase, without a note, the last note of the previous phrase is played with a kamuri. When written several times in succession, it takes the form of a wide vibrato. The "nodding" movement of the head begins slowly and gradually accelerates. In some schools, a muraiki can be applied during the lowered part.

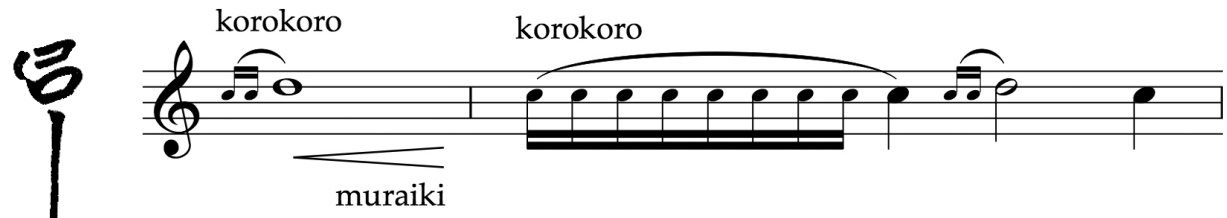

Figure 1. Example of korokoro and muraiki. The first korokoro alternates the fingers on holes 1 and 2 to go directly to the fingering *ro* (D in the case of a standard modern shakuhachi) which ends with a strong muraiki that is not indicated on the score. The second one is longer, followed by a sustained note and another short korokoro, and finally ending on two sustained notes. The duration of the korokoro and these notes is up to the musician. Although this transcription gives the same note, the tone-colour changes with the alternating of the fingers while producing a sort of bubbling trill. (The two first phrases of the piece *Koden sugomori*, Yokoyama school of shakuhachi. Used with permission.)

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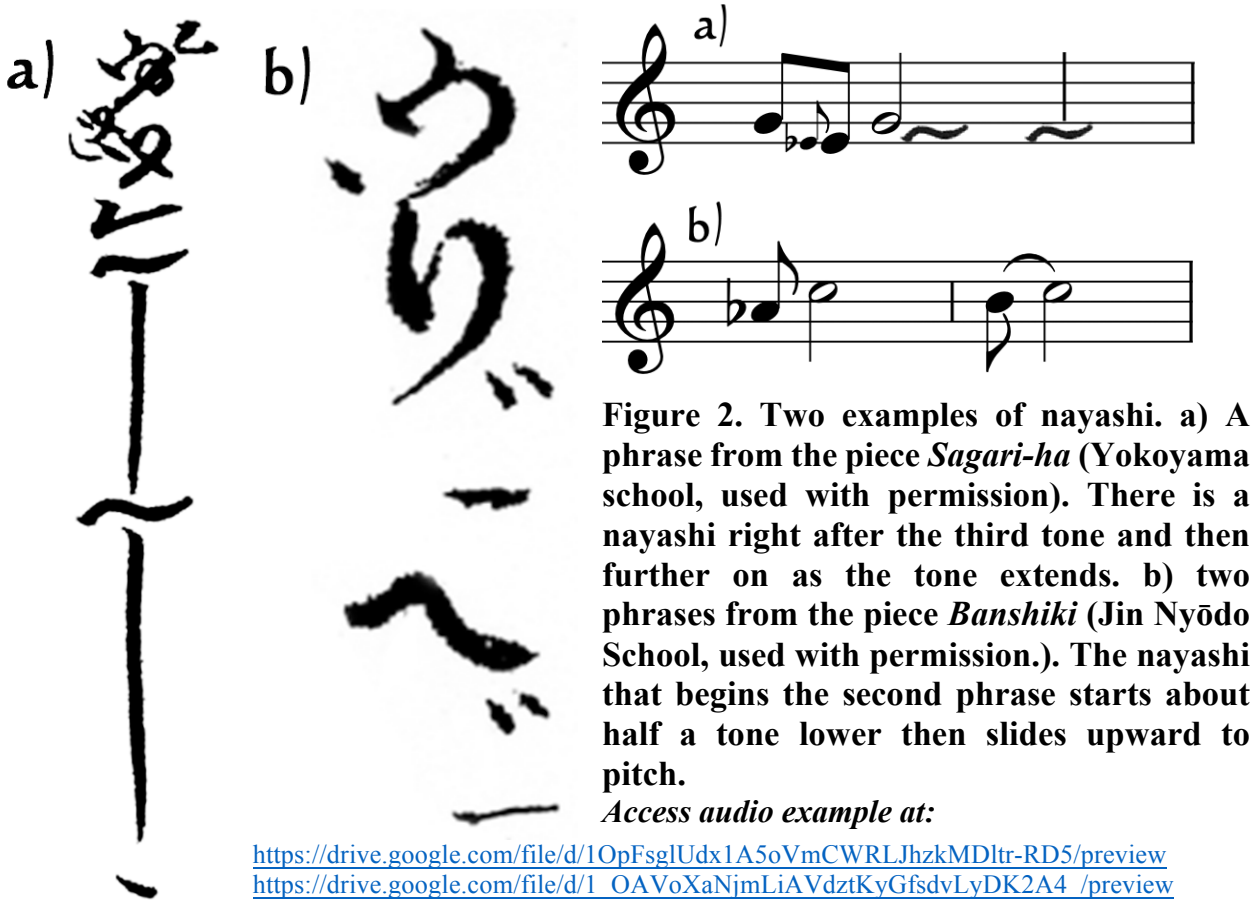

Figure 2. Two examples of nayashi. a) A phrase from the piece *Sagari-ha* (Yokoyama school, used with permission). There is a nayashi right after the third tone and then further on as the tone extends. b) two phrases from the piece *Banshiki* (Jin Nyōdo School, used with permission.). The nayashi that begins the second phrase starts about half a tone lower then slides upward to pitch.

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• *Tamane* (flutter-tonguing): Similar to the flutter-tonguing used in transverse flutes, the tongue is used to create an effect similar to the trilled "r" that occurs in many Latin languages. There is also a variant called *tabane* that employs a guttural trill in the back of the throat, similar to the effect of the guttural ר in Hebrew or the "r" in French. Because this gutteral sound does not exist in the Japanese language, many players find this effect difficult.
• *Yuri* (vibrato): Shakuhachi players utilize five main types of vibrato. 1) *Yoko-yuri*: moving the head from side to side; 2) *Tate-yuri*: moving the head up and down, modulating pitch with a range between a half- or full tone; 3) *Mawashi-yuri*: rotating the head. The pitch can also vary up to a full tone; 4) *Tsuki-yuri*: pressing the flute quickly back and forth against the lips; and 5) *Hira-yuri*, sliding the lips laterally back and forth over one another while blowing. *Hira-yuri* and *Yoko-yuri* modulate the tone-colour of a sound, not its pitch. These vibratos are not always played evenly; the player may alter the speed while playing them.
• *Atari* (attack): This can refer to two different techniques: one using the breath and one using a finger. The former is produced with a forceful breath that could include a muraiki. With the latter, a finger strikes a hole causing the sound to "pop." There is a variation where the hole begins in a closed position, then is rapidly opened and closed.
• Some tones can be produced with different fingerings, each one having a different tone-colour. The characters used in shakuhachi notation refer to fingerings, not tones.[10] In some pieces, we find motives of two or three of the same tones with different fingerings, creating a pattern of tone-colours. For example, D in the second octave (on the regular 1.8 shakuhachi) is usually indicated with two different characters. The first one, *ro*, is produced by closing the 5 holes, while the second one, *i* (pronounced "ee") is produced by closing the first hole only. Some schools have additional fingerings to produce other distinctive tone-colours.

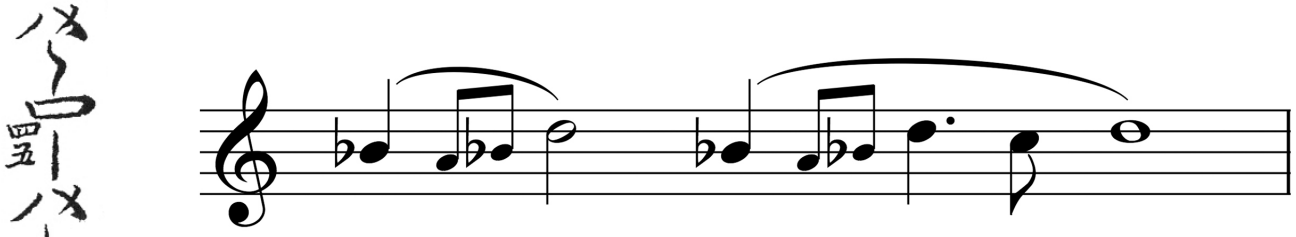

Figure 3. Example of a phrase with three different fingerings for a single note: D. The first D is produced by closing holes 1, 2 and 3, the second by closing hole 1, and the last by closing all the holes; each fingering produces its own tone-colour. The two curved lines (which produce A and Bb in both cases) are done with a nodding movement of the head on the fingering of the Bb. (This phrase is from shakuhachi master Okuda Atsuya's Zensabo version of *Tamuke* [*Offering*]. Used with permission.)
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> • When playing solo pieces, there is no need to be precisely in tune. Because the shakuhachi has only 5 holes, a good number of tones are produced using partial openings or by altering the angle and force of the breath, making it very difficult to play perfectly in tune according to the even tempered scale.[11] There is no set formula for the amplitude of the holes' openings; they vary from one tone to another as well as from flute to flute, be they of equal or different lengths.[12] A particularity of these tones is that some of them are much softer than those of equal pitch produced without partial openings or alterations to the breath. This difference in intensity has become part of the shakuhachi's aesthetic and characteristic tone-colour.
> • A final point worth mentioning is that the phrases of a piece are separated by an obligatory breath, creating purposeful silences within a melodic line. The duration of these pauses varies between musicians, schools, and even from one performance to another by the same individual, and are thus relative to the mental state of the player at the time of the performance. Though no sounds are produced, they are an integral part of the aesthetic character of honkyoku repertoires. These silences are not merely absences of sound; they are a form of tone-colour, a quietness anticipating the tones to come. It is up to the player to make these silences aesthetic.[13]

The name shakuhachi means one *shaku* eight *sun* (*hachi* being the number eight),[14] or more specifically 1.8 shaku, which is the standard length of the flute. It is possible to make flutes from one all the way to four shaku, though those three shaku and longer are physically difficult to play for most on account of the substantial distance between finger holes. All the tone-colour techniques we describe here can be executed on most lengths, some being difficult on longer flutes. The particularity of using flutes of different lengths is that each length tends to have its own timbre, shorter ones being brighter and the longer ones more sombre and softer in character. Timbres are influenced by the thickness of the bamboo, the size and shape of the bore, and the method of construction, i.e., traditional or modern. During the Edo era the komusō monks of the Fuke sect played primarily 1.8 shakuhachi. Today, by using shakuhachi of different lengths, a musician can choose a flute that best expresses what he or she envisions aesthetically and musically for a particular piece, a choice that is based primarily on tone-colour. Any two players may choose different lengths or types of shakuhachi to play the same piece. Again, some musicians might play on more than one flute of the same length, using them at different times for their distinct tone-colours. Even the way a musician trains his lips to produce a sound on the shakuhachi has an influence on the tone-colour of his flutes; the same flute may yield different tone-colours for different musicians.

Tone or Tone-colour?

Hearing as well as listening are social and cultural variables subject to prevailing historical ideologies. Sounds can become knowledge that defines players' relation to a source, as well as to other people within their shared environment. As much a signifier as a message,

any sound must have a communally shared meaning for everyone to recognize it and act upon it appropriately. If hearing a sound means to pay attention to it in a particular way, then the act of listening necessarily relates to predefined sounds that are intentionally used in and for social and cultural situations, codes of beliefs and ideologies. In this context, the heard sound is a type of icon, i.e., a codified representation of what it refers to, not for what it is, but for how a people will relate to it and each other concerning it (Erlmann 2004:3–9).

In European music, the musical sound is a culturally defined tone with a pitch from which melodies can be forged.[15] Although a sound is initially a perceptual datum and sensation, the tone is a codified determinant that allows the listener to define a sound as musical, to the point that it can be considered as an "object" distinct from the ears and mind that perceive it – that is, from a vision-like viewpoint (Erlmann 2010:9–27). Our recognition of any sound, whether a noise or a musical tone, is more a pre-perception than a perception as such. Our pre-perception – our (often unconscious) categories and definitions of what a sound should be – determines whether we hear a sound as being harmonious, dissonant, musical, noise, etc. The European encounter with Japan in the 16th century was mixed, with neither culture very much liking the music of the other (Danford 2014:236). Joseph Chamberlain later went as far as to doubt whether Japanese music could even be called as such, deriding it as a collection of "squeaks and squeals." (ibid.) This initial dissonance, however, was not present in all, likely changing first in those with a more flexible, or broader, pre-perception concerning music. We do not hear a sound for what it is, but for how it is culturally predefined. This pre-perception predetermines what and how we perceive any tone or melody, and furnishes the criteria for what we perceive as being musical, to the extent that we only "hear" what corroborates the said criteria.

In Japanese culture, people have traditionally appeared to pay attention to the quality of a sound prior to categorizing it as music or noise. The origin of this mode of thinking is not related to music or to acoustics, but to the manner in which Japanese people culturally relate to the sounds of nature and of their social environment. For example, it is common when walking through a Japanese garden to hear the run-off of an artificial stream or waterfall. In a garden, we can hear the sound of a *sōzu*, a fountain made of a rock from which we hear the clapping of a tube of bamboo fixed so as to pivot when filled with water. When walking in the streets of a town or a village, it is common to hear the tinkling of the *fūrin*, a small bell, to which a piece of paper is attached. The wind stirs it, causing it to ring. Again, the *suikinkutsu* greets temple visitors with calming, resonant dropping sounds as the water used to wash their hands in this shallow basin drips down into a large, hollow urn hidden beneath. The purpose of these devices lies not in the specific pitches they create, but in the impression they leave in people's minds.

These sounds are not appreciated as sounds in and of themselves; they are tone-colours, subtly enriching their environment. Their quality infuses the movements of everyday

social, cultural and even spiritual life with symbol and metaphor. In the examples above, it is the sensory quality rather than the objective source of a sound that makes it distinct. We do not mean to suggest that Japanese people hear sounds in a way that is fundamentally different from others; only that in many instances, Japan's traditional sonic environment has marked tone-colour as a particularly meaningful constituent of sound. This markedness often seeps into traditional music as well.

The shakuhachi was originally an instrument for meditation, not for performance. Shakuhachi music developed in an environment where tone-colours blended with and enriched the environments in which they were heard. When a shakuhachi player today plays a piece for shakuhachi in which a tone appears three times in a phrase using three different fingerings, he knows that he is playing the same tone with the same pitch, while the musical character of the phrase is in the melodious flow of the three tone-colours, not in the fact that it is the same tone.

Though during the Edo era most komusō monks were playing a single length of shakuhachi,[16] today's players take advantage of the fact that it can be made in different lengths. When playing a piece on flutes of various lengths, the pitches of the melodies will differ, while the intervallic form of each phrase and the piece remain the same. The aim in using flutes of different lengths is not to transpose a melody, but to choose a shakuhachi whose tone-colour will best express what the musician envisions. They might choose a flute with a softer or brighter tone, or a rougher or a purer sound. Though the majority of shakuhachi players today play the modern version (the jiari), which is brighter and more in tune with the tempered scale, there is a growing interest in the *Fuke shakuhachi*, the traditional version, which is still enjoyed by a minority of players. A major difference between these two types of shakuhachi is that the quality of all the jiari are similar in overall timbre, yet having some variance in tone-colour, while with the Fuke shakuhachi the differences in both timbre and tone-colour between flutes are quite pronounced, and they are less likely to be in tune with the tempered scale, though some makers are now making modernized iterations of such flutes that are more in tune, following demand from today's musicians. Moreover, there are no strict rules demanding that a player play a piece on a flute of a particular length, although there are few pieces that are played on specific lengths in some schools.[17]

In the Kinpu-ryū school from Northern Japan, as well as in some Fuke schools (from south-western Japan), the same piece will also exist in a transposed form wherein the same melody (usually with one or two minor adaptations for techniques that can't be played the same way on a different position on the flute) can be played employing a different mode. This enables two players with different lengths of shakuhachi to play in unison. As the same piece is played on two shakuhachi simultaneously, there are no harmonies – it is a unison performance. There are, however, what may be considered "tone-colour harmonies," wherein the same notes are played simultaneously but with different tone-

colours, and at times, by necessity, in different octaves on account of the limits imposed by the flutes' differing scales. Instead of creating polyphonic harmonies, they "harmonize" layers of tone-colours over a single pitch. These alternate modes can also be played solo, enabling a player to take advantage of different tone-colour combinations on a single flute (Uchiyama 1972:13–16). The "modes" are simply transpositions of a single scale to different starting points on the flute. Because of the transposition and the physical limitations of the flute, however, pieces composed in different modes tend to have a unique intervallic interplay, taking on a gradiantly brighter or darker feel, which is expressed in the names of some modes (*akebono*, meaning daybreak, or *yugure*, meaning twilight). Tokita notes that the terms "mode" and "scale" are often used interchangeably in Japanese music (Tokita 1996:1–3).

Another aspect that is indirectly connected to tone-colour, but which nevertheless plays a role in the way a sound is produced by a musician, has to do with the way musical instruments are traditionally taught and learned. American ethnomusicologist Jay Keister, who studied shamisen and *nagauta* (*kabuki* theatre "long songs"), gives us a good example. One of the first comments that his teacher gave him when he started his studies was not to worry about the pitch or the quality of the sound, but to produce it with the proper form, or *kata* (Keister 2004:42). A musician does not learn to simply produce a sound; he must first learn the proper kata, or more specifically, the proper way to move his arm, to hold the instrument, to hold his body, to hit the string, etc. The proper sound will come as the student learns his or her craft. In the Japanese way of thinking, doing something with the proper form is more important than obtaining the "right" result. In the end, the result will come if the form is right. Though Keister does not discuss tone-colour, we can infer that the learning of a musical instrument is not about mastering a technique as such, nor is it about producing the proper sounds, tones, or tone-colours. It is about how the musician embodies her artistry by incorporating the kata into her own person in order to produce the best sounds possible. Artists from all Japanese arts give a crucial importance to forms in producing their arts, which involve the entire body and mind as one unit. A technical knowledge is of course involved, but it is based on embodied learning rather than prior theoretical understanding, since it is the body that plays the instrument.[18]

In a similar vein, Kurahashi Yōdo II, a Japanese shakuhachi master from Kyōto with whom Bruno Deschênes studied, suggested during a master class[19] that he believes that during the Edo era, when students were learning the honkyoku pieces, they were not learning melodies, motives or phrases by rote, since an official notation appeared only around 1870, but were learning fingering patterns and sequences. In other words, they were learning with their hands and fingers, the result of which produced these melodies, tones and tone-colours. Reigetsu Uchiyama also emphasizes the importance of learning honkyoku from a teacher rather than just trying to learn from a score. Mimicking your teacher's fingering is of special importance, as this (rather than simply mimicking the tones) is what gives the pieces their unique tone-colour character. For example, the same pitch can be played either

with the bottom two holes open, or with the bottom hole and the third hole shaded. The former creates a loud tone with rich harmonics, where the latter is softer and rounded off. Embodied learning, then, can directly affect tone-colour (Uchiyama 1972:40).

Barry Daido Ho-un Weiss told Nick that more than "hearing music," he "feels vibrations" in the flute while he is playing.[20] As with other teachers, Nick noticed that some of the pitches Weiss played were not what he expected them to be musically, yet they still somehow sounded "right." Even with a pitch that is slightly off from what would be expected, a skilled player emotive intent will come through in the tone-colour of the sound. To an open listener, pitches that are played slightly off from a tempered musical scale in this way will gain an air of mystery. It is important to note here that there is still skill involved; mere "off-key" playing by an unskilled player will sound "wrong." It takes a good degree of skill and experience to be able to express oneself in this way, using tone-colours and microtones confidently.

Conclusion

Listeners naturally recognize what they hear played on musical instruments or sung by voices as music. They understand that the musician acquired the skills necessary to properly perform the music on her instrument and that she plays a melody. The focus of the music's aesthetic and the causes of any resulting auditory pleasure, however, are not purely in the melody; they exist equally in the quality of the tone-colours that give "flavour" to the music. As Tokumaru indicates, connoisseurs of nagauta and shamisen learn to distinguish the sawari effect of various schools. What the shakuhachi player is looking for in selecting a distinctive flute for a particular piece is a tone-colour that will best embody what he wants to express. In traditional Japanese music (especially premodern shakuhachi music), tone is neither the only nor the most prominent feature of a melody; tone-colour appears to be on equal footing, and sometimes even more important, as with the shakuhachi's honkyoku repertoires. In these pieces, melodies are divided into short phrases by obligatory breathing marks. These phrases do not necessarily follow "logically" or musically from one to the next. Tones or pitches in these broken and atypical melodic lines are not "asserted," but rather serve to carry their respective tone-colours; a tone will often vary in pitch in order to enhance tone-colour, rather than sacrificing tone-colour to maintain a "perfect" pitch. The focus is more on the expression of the player's mind, and the impressions that these sounds leave in listeners' minds and ears, than on a rule of conformity to a particular pitch or set of pitches. Although the honkyoku melodies of shakuhachi pieces are based on modes, they often serve only as a general melodic framework, whose boundaries are frequently broken. They do not constrain the entire piece. As we mentioned earlier, because of the way the shakuhachi is made, it is nearly impossible to play perfectly in tune (especially according to the tempered scale). The half-tones will never be precisely identical between iterations in a single piece or between pieces.

We would even go as far as to suggest that, being "inferred" by a tone-colour, a tone is a resonance, or more specifically a metaphor that is captured by both the musician's and the listener's sensitivity to sound. To the pre-modern Japanese ear, timbre and sound were not sound objects that could be abstracted; they were first and foremost perceptual or sense data. The Japanese term *hibiki* illustrates this well–it refers to the quality or feeling of something heard, or the emotion evoked by it. Musicians and practitioners of Zen-influenced arts learn to be attentive to the body's feeling in hearing a sound, rather than being led by the wanderings of the mind. In this line of thought, music is not an art of time or of melodious tones, but an "art of the present," sensing and participating in one's environment in the form of a single, shifting, nuanced tone.

When music lovers first hear shakuhachi honkyoku pieces, with their atonality and lack of regular rhythm or conventional melody, they often don't quite know what to make of them, especially if they are expecting something more conventionally musical. This also goes for the musician. A modern player may be tempted at first (as were Nick and Bruno) to try to make musical sense of the pieces in terms of pitch and rhythm, but this would betray the pieces' original intent, and would rob them of their unique appeal. Rather, we suggest that the pieces be understood as "tone-colour melodies," and both played and heard from the perspective of embodiment rather than mental analysis. As with Zen meditation, the player senses his or her body, breath, and state of mind, and lets them find expression in a particular quality of tone, at their own pace, as his or her body recites the patterns it has learned, rather than trying to mentally force the piece into a preconceived succession of precise tones. The resulting sounds, especially in terms of tone-colour and rhythm, are discovered as they come into being, rather than conforming precisely to a specific mental image. Likewise, the listener does well to avoid trying to hear a logical or linear succession of tones and rhythms; he should take a passive rather than an analytical posture, letting the quality of each sound he produces affect him first of all physically – letting the sound, as part of his environment, with all of its harmonic and tonal nuances, wash over and impact his ears and body, leaving impressions on his mind. When these pieces are played and heard as tone-colour melodies, the emphasis shifts from specific tones to the nuances that, for many, lend the music a uniquely "spiritual" or meditative quality.

Notes

[1] A minority of pieces do include more tangible melodies and rhythms.

[2] In English music dictionaries, "timbre" and "tone-colour" are synonyms. In this article, timbre refers to the distinctive sound quality of a musical instrument, while tone-colour refers to quality of a sound produced by any instrument.

[3] According to musicologist Yoshihiko Tokumaru, the attraction of Japanese musicians to Western instruments at the end of the 19th century was about tone-colours that were unknown to them (Tomukaru 1991:91-2). Similarly, Henry Burnett suggests that the importance of tone-colour in traditional Japanese music is such that a musicological analysis of a piece based on pitch does not have much meaning for traditional Japanese musicians (Burnett 1989:80).

[4] At its origin, the three instruments were the koto, the shamisen and the kokyu, a fiddle made similarly to the shamisen. It was replaced by the shakuhachi around the middle of the 19th century.
[5] Ryū is usually translated as school. Especially in modern times, these schools function more as guilds, each one having its own style of playing that distinguishes it from other ryū.
[6] The strings are counted from the bottom up.
[7] Though standard, the production of these techniques and their usage can vary from one school to another, from one musician to another, and sometimes from one shakuhachi to another or from one length of shakuhachi to another.
[8] The shakuhachi has five holes: four in front, one in back. The holes are counted from the bottom up.
[9] Simply alternating these two fingers will not produce the desired effect. Between opening and closing the two finger holes, there is a third position wherein both holes are closed, producing a fluttering effect including at least three differing tones.
[10] Although a standard notation developed sometime around the middle of the 19th century, different schools have adapted them to their various needs and styles. Some notations are quite elaborate and precise, while others are minimal.
[11] A number of contemporary musicians, both Japanese and non-Japanese, put a great deal of effort towards being in tune with Western instruments.
[12] Because no two pieces of bamboo are exactly the same in shape and thickness, the shakuhachi maker cannot necessarily make two flutes of the same length having exactly the same timbre.
[13] There exists an aesthetic principle in regard to silence in Japanese music, called *ma*. We do not discuss it here due to space constraints. Cf. Aya Sekoguchi (2016); Bruno Deschênes (2017).
[14] *Shaku* is a unit of measurement originally from China. *Sun* is the decimal division of the shaku.
[15] To put the Japanese viewpoint in context, we use European music as a basis for comparison. Our aim is to seek variants, not differences.
[16] Some of these monks were hermits living on mountainsides, using flutes of different lengths.
[17] For example, the piece *hachigaeshi* is usually played on a 1.8 shakuhachi. In the repertoire of the Kinpu-ryū school from the prefecture of Aomori, in Northern Japan, a piece with the same title is usually played on a slightly longer 2.0 flute, though this is not a strict rule.
[18] See in this regard the article that Bruno co-authored with Japanese ethnomusicologist Yuko Eguchi (2018).
[19] At his home in Kyōto on November 2nd, 2015.
[20] At his home in Tokyo, September, 2008.

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