Abstract

The Form of Healing Vibrations

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The focus of my research is the production of singing bowls to enhance my understanding of the healing art Reiki. By making singing bowls it is possible to form an awareness of non-visual energies that can be applied to beneficial practices, such as sound applied to healing. Additionally this concept is reinforced by exploring the roles of healer and smith through various mythologies.

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Introduction

For me, art is more than just objects to be looked at - it is the interactions we have with these objects. I believe that art is as much the making as the finished piece; for the viewer, being able to touch and hold the piece makes the art into something more. For this reason, my work focuses on making functional objects that provide the viewer with a more direct relationship to the pieces. Recently I began practicing the Japanese energy healing technique known as Reiki. In Reiki, the intention of the healer is to project energy through the hands to affect beneficial changes in themselves or others. It soon became clear to me that I needed to integrate my interest in Reiki with my art. The creation of singing bowls was a clear way to join my two passions. As both a vessel and instrument it draws the viewer to interact with the piece more fully. At the same time, the singing bowls are one of the traditional tools used by many energy healers. By making singing bowls it is possible to form an awareness of the power contained in non-visual energies that can be applied to beneficial practices, such as sound applied to healing. This body of work explores my desires for creating art that invites interaction.

The simplest definition of singing bowls is that they are a type of bell sometimes referred to as a standing bell. Whereas a typical bell must be suspended with the open rim pointing downward, the singing bowl rests on a surface with the rim pointing upward. A singing bowl can be played by striking it with a mallet, just like a traditional bell, but some can also be played by the friction caused by rubbing a cylindrical mallet around the rim. This friction causes the walls of the bowl to vibrate at a consistent frequency in the same manner as a wine glass when the rim is rubbed by a damp finger.

The Importance of Singing Bowls

With my metalwork I decided to create a bridge between the hand of the maker and the hand of the healer. To do this I make singing bowls to further my understanding of Reiki. As a healing method Reiki does not specify the use of any tools other than the hands, but as more people and cultures have taken up this practice it is recognized that various tools can help to focus or amplify the process. Additional tools utilized by different Reiki healers include, but are not limited to, stones and crystals, incense, oils, colored lighting, gongs, and bells, as well as singing bowls. These tools came to Reiki from other traditions such as Ayurveda, Shamanism, and Aroma Therapy.

Studying Reiki did bring singing bowls to the forefront of my awareness but my history in music also played a part in my desire to make this instrument. While I never had an interest in the music field as a career, it has remained a creative outlet. In school I played the tuba and piano. Around the same time I began learning about metal working and I wondered if it would be possible to create my own instruments. These early exercises never progressed, possibly due to my lack of experience with metalworking techniques and my assumption that I had to make something that I knew how to play. After leaving band and trying my hand at playing a few different instruments, I came to the realization that there are other types of instruments that I could create. It did not matter if I was not able to play them myself. This understanding has allowed me to consider the singing bowls from a more aesthetic mindset instead of focusing only on their function.

My research on singing bowls helped me move beyond thinking that an instrument must be perfect in every way. When played a singing bowl produces a series of resonant tones that meld

together to create an overall audible effect. The vibrations that build up in the rim and sides of the bowl are manipulated by the variations in the walls, creating the rich tones associated with this type of instrument. In a bowl hammered out of sheet metal, these variations might be the result of how much a particular portion happened to be hammered in comparison to another section. With cast bowls, tones are based on surface thickness and whether the walls are perfectly round.

Background of the Process

Vessels, such as bowls, serve as a perfect conduit between the hands of the artist and the viewer. For several years I focused on forging, but once introduced to sinking and raising I focused on making vessels. Sinking is a process that begins with a flat disk of metal that is hammered into a depression and stretched, much like a bubble, into a bowl form. In raising, the metal is hammered over a metal or wooden form known as a stake. The metal is placed over the stake and then hammered in a concentric pattern that radiates out from a central point, sometimes referred to as a kernel. This causes the piece to take the shape of a bowl (figure 1).

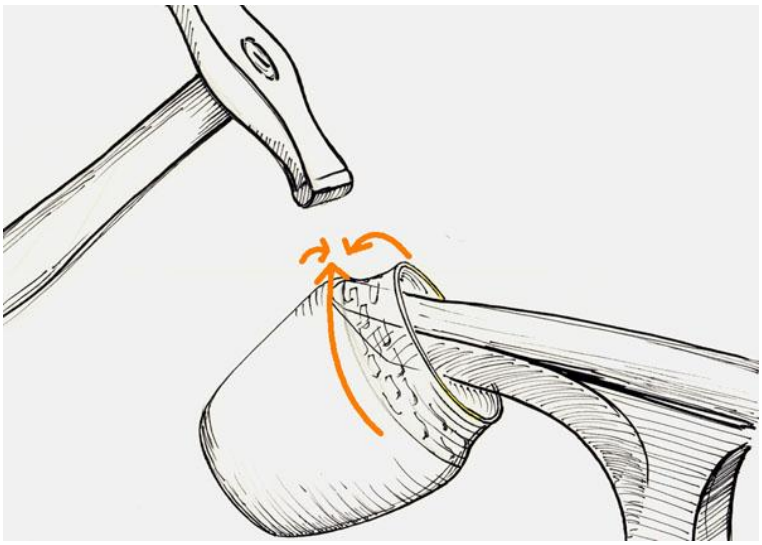

Figure 1
Raising a vessel

After practicing with these methods to create the singing bowls, I decided to see if I could cast the bowls to achieve a good resonant quality. The hammering compresses the molecules of the metal, creating a fine and tight grain. Casting allows the metal to remain porous, meaning that the molecules of metal are spread out as much as possible while still remaining cohesively bonded together. With some metals this causes the piece to have a dampened sound quality if

they are struck with a hammer or mallet. After making a few cast bowls, I determined that the inherent qualities of bronze helped to relieve any concerns about this porous quality of cast metals in relation to the sound achieved (figure 2).

Figure 2
Close-up: cast singing bowl

The Art of Bell Casting

In a bell foundry the artisans will begin with an idea of what tone and octave they wish to achieve in the finished product. Formulas allow them to determine how large the form needs to be when creating the mold so that the casting will be in the correct range when completed. In a modern foundry the newly cast bell is mounted on a lathe and material is slowly removed from the interior. This thinning allows the artisan to tune the bell. Every bell produces at least two tones. The artistry comes from the minute adjustments that are made to tune all of these tones into a harmonious progression. After a bell has been cast it is possible that even with all the careful calculations and precise measurements the note produced is simply not what the artisan expected. In this instance the only recourse is to tune it to the nearest note and try to achieve the desired note in another casting.

It is possible to catalogue the various features of a bell once it has been finished. However, there is no guarantee that the same form will create the same note in a new casting because of uncontrollable variables. A critical variable is the specific composition of the alloy throughout the entire batch of molten metal. Since each of the metals within the alloy melt at different temperatures they can create pockets that contain different ratios throughout the mix. After pouring the metal into a mold the speed at which it cools can also change the possible outcome. This is most likely due to the growth of the crystalline structure of the alloy on an atomic level. This causes the porosity of the molecular structure to vary which will influence how vibrations are able to pass through the bell resulting in tonal variations. The ability to cope with all of these variables is what makes a bell maker an artisan and not just another factory worker.

Aesthetics of Casting

While my drive to try casting was based on exploring this processes as it relates to tonality I discovered the variation in surface quality was more visually appealing. My work with raising had progressed through utilizing the malleability of the sheet metal and how it folds and ripples during the forming process. The problem with this very loose method of working was that those same folds and surface irregularities, that I find appealing on an aesthetic level, did not work as well for a bell. A bell needs a continuous and mostly smooth surface for the sound to resonate. At the same time, after raising several functional singing bowls, I wanted to create more visual interest than just hammer marks.

With casting, the problem of balancing function and aesthetics was solved by the process itself. At first a mold was created of a lathe turned wooden form, but the resulting surface remained plain and unappealing to me. When shaping the forms by hand out of clay, and eventually wax, greater control was gained over a variety of aspects: the thickness of the walls and rims of each piece, how perfect or warped the overall form was (figure 3).

Figure 3
First castings

The clay and wax forms allowed me to manipulate the surface textures of the bowls to achieve everything from a smooth to a rough surface. While shaping the forms I was reminded of the work of figure sculptors, specifically Rodin, who would form a model out of clay and then have it cast into bronze (figure 4).

Figure 4
Rodin's *Flying Figure*

Clay left a story within the surface of the final piece made up of the multitude of strokes and impressions made by the artist's fingers as he brought his clay forms to life. Some of the sculptures that Rodin created could "serve as illustrations for a manual on bronze-casting, so clearly do they document the procedures of formation" (Krauss 29). After these pieces were removed from the molds Rodin left all the marks from the process, "so that they are the visual evidence of the passage of the medium itself from one state to another" (Krauss 29). While he worked, Rodin simply left the marks instead of patching them. Shaping my forms by hand achieves a similar depth of texture, attention to detail, and personal connection to the work.

I experimented with surface effects by making a plaster mold of one of the wax forms. This manner of work is based on a more industrialized, production-based method of making. The model is first created in wax or clay and then covered in plaster to create a mold. After the plaster has dried the form is removed leaving a cavity in the plaster. Melted wax is then poured into this cavity, and as it sits the wax will begin to cool and solidify where it contacts the plaster.

Once the desired thickness has been achieved the excess wax is poured off. This leaves a replica of the original wax or clay form, with a few marks in the surface from the mold itself. I decided to try this method to experiment with the wall thickness of multiple pieces at the same time. By isolating this single variable I can determine just how much the tone and pitch can be modified in a particular design (figure 5).

Figure 5
Wall thickness test

Casting and *Wabi-Sabi*

I was drawn to the technique of casting, rather than forming, also because of its potential to embody the Japanese concept of *wabi-sabi*. Much like Rodin when he left the imperfections from the casting process, the basis of this aesthetic is that the imperfections within a piece are what make it beautiful. One of the easiest places to notice this detailing is on the rims and feet of the bowls (figure 6).

Figure 6
Japanese tea bowl

Often these areas of the bowls have a slumped or lopsided appearance that causes the rims to become uneven with varying high and low spots. There are a variety of ways a casting can "fail" echoing the concept of *wabi-sabi*. I feel it provides a unique sense of excitement when each piece is finally revealed. When the bronze is poured into the finished sand molds the final outcome can vary widely from piece to piece. This depends on a multitude of variables, ranging from the temperature of the molten metal being poured to the weather outside. This unknown quality during the pour and the initial reveal from the mold is as much a part of the making for

me as all of the careful planning that I put into the forms. Hours may be spent on planning but in seconds the poured bronze can transform the expected outcome. Therefore, I try to approach the pieces, when first revealed, without any preconceived expectations.

Each of the singing bowls is intended to serve an individual as a tool for healing. As such, I feel that it is important for each piece to possess as much character and individuality as the person who will use it. W*abi-sabi* allows people to be drawn to the particular singing bowl that is the best fit for them. A series of bowls created from the same plaster mold will possess their own unique qualities. I strive to see these variations not as "failures" but as a part of my making process (figure 7).

Figure 7
Detail: irregular cast rim

Presentation of the Bowls

To encourage viewer interaction with the work cedar stands were chosen to create a warm inviting feeling. The design of the stands is intended to reference joinery used in Japanese timber framing with the through tenons and wedges. Each stand also has a mallet presented alongside the bowls. Even with these modifications to the presentation it is hard to break the inculcation of our museum culture in which it is taboo to handle the work.

The choice of venue for my thesis show was intended to help encourage viewer interaction. From the hardwood flooring to the pale colored walls there is a warm quality to the atmosphere which combined with the small floor space is welcoming (figures 8 and 9).

Figure 8
Presentation view1

Figure 9
Presentation view 2

In traditional galleries, the white of the pedestals against the backdrop of the sterile white walls create a sensation that everything is separate from the viewer. The choice was made to overcome this separation so that as one moves through the space one can feel comfortable and leave with a renewed energy. Stands were arranged to create openness allowing viewers to move freely throughout the space without crowding the work or each other.

While convincing the viewer that the work needs to be interacted with to fully experience the piece is challenging in the gallery setting there are some distinct advantages. The most important is the presentation of the sound. Most gallery patrons tend to become quieter as they move through the space. This allows for a wonderful contrast between the quiet of the room and the

sound of the bowls each time one is played. Some new studies into physioacoustics consider this to have a healing effect on a person (Music Therapy and Medicine 9).

Healing with Sound

Western medicine has taken steps into the use sound as a healing energy. Sound has been used in the field of psychology. Psychologists focus on the idea of music and how the rhythm and movement can be used for both evaluating the psychological state of a person, and influencing that state (Music Therapy and Medicine 116). In the medical field there have been recent advances into the use of various tones and pitches to help promote healing in patients. This use in healing has caused doctors and scientists to develop elaborate setups to best facilitate the introduction of these sounds into the patient's body. The most common format used is a bed that has been built over a frame with speakers mounted to it (Music Therapy and Medicine 37). These sound beds can then be turned on with the patient lying on top and the different speakers can then be turned up or down to focus exactly where the sound can enter the body. This can have impressive results in the duration of convalescence of a patient after something like a surgery, sometimes taking days off of the estimated recovery time (Music Therapy and Medicine 34).

All too often, in our modern societies, we are surrounded by a cacophony of noise and any healing notes that may exist within this noise are lost amongst the dissonance and clamor of the rest. To help facilitate the use of sound as a means of healing we must consider where we encounter the beneficial sounds. This can be done with specialized equipment like "the physioacoustic recliner or bed" which has speakers placed in strategic locations along the patient's body, or as simple as a room with the door shut and curtains over the windows where the background noises can be diminished (Music Therapy and Medicine 35). This awareness of the various noises which surround us is an important factor when attempting healing since "just as with vision, hearing works best when there is contrast" (Healing Spaces 59).

Using Singing Bowls for Healing

Based on my studies of Reiki, I view singing bowls as a tool for amplifying and focusing the energy being used by a healer. Within Reiki there is a belief that all things possess life force energy; this is referred to in various cultures as Qi, Prana, Barakah, or Magic. While there have been no studies performed within Western Sciences that can directly measure any of these concepts it was an accepted idea within ancient and medieval sciences. These early scientists referred to this energy as the element known as Aether.

While Western science and medicine have moved away from these ideas many Eastern practices have not. Even with their differences, both styles still use some of the same terms with slightly altered meanings. The term which best demonstrates the difference in how the process of healing is approached is *disease*. It is defined by Merriam-Webster as:

> an impairment of the normal state of the living animal or plant body or one of its parts that interrupts or modifies the performance of the vital functions, is typically manifested by distinguishing signs and symptoms, and is a response to environmental factors (as malnutrition, industrial hazards, or climate), to specific infective agents (as worms, bacteria, or viruses), to inherent defects of the organism (as genetic anomalies), or to combinations of these factors.

This fits very well with the ideas of Western medicine in which treatment is intended to create a physical change inside the body to destroy or remove the harmful agent, which is viewed as the sickness. Most practitioners of energy healing consider that the body's life energy is in dis-ease making it unable to fight off these harmful agents. This approach is based around the idea that the sickness being displayed is in fact a symptom of the dis-ease. This is holistic healing, meaning that someone who is sick needs treatment which helps to heal their body, mind, and spirit. Some of the smaller singing bowls are displayed together based on this concept (figures 10 and 11).

Figure 10
Dis-ease arrangement

Figure 11
Detail: dis-ease arrangement

Many of the healing practices that still utilize this idea of life force have been developed in Eastern countries such China, India, and Japan. These traditions are often seen as being traditional or ancient. There are also several healing arts that were developed within Western cultures which I will refer to as modern to differentiate. Some of the traditional healing practices that can be found include Ayurveda, Reiki, Qi Gong, and Native American Shamanism. The modern practices include color therapy, aroma therapy, and homeopathy. While none of these healing arts have been proven to work, in a Western scientific method, people still practice them as valid and successful. Often the body is still treated by Western medicines, but something more is needed to treat the mind and spirit. To fulfill this on a personal level I began to practice the art of Reiki.

The Role of the Metalsmith

When considering how to integrate my practices of making and Reiki, I began to look at how metalworkers appeared in various mythologies. There are a number of examples. One of the most well-known smith deities is the Greek god Hephaestus, known as Vulcan to the Romans. In Celtic mythology a distinction is made based on the materials being worked; Goibniu was the patron of blacksmithing, while Credne ruled over the art of silversmithing. In Africa Ogun was not only an historical deity but is actually the subject of cult-worship throughout modern times.

Hephaestus was known for creating tools for the other Gods such as the armor of Achilles and the chariot of Helios, the sun. More important, from the perspective of my work, is the fact that Hephaestus was able to create life out of inert materials, such as man's consort Pandora. This ability to create life, while definitely well within the realm of deific powers, can be seen as an elaboration of the power held by smiths in the early Greek culture. Hephaestus was not the only smith who worked for the Olympian gods; there were also the Cyclopes who worked in his shop, creating things like the lightning bolt wielded by Zeus. In the varied accounts of these mythological characters the smith was an impressive figure. He was able to control powers that pass beyond the realm of a mere mortal. In his book, *The Greeks,* H.D.F. Kitto says:

> Of specialized trades we hear of only two, the trades of the smith and of the potter. These were "demiourgoi," men who worked for the populace, not themselves consuming the product of their own toil. The demiourgoi is the craftsman: in Plato the Creator: hence Demiurge in Shelley's *Prometheus Unbound*. It is interesting to notice that these two are the only crafts, which in Greek, have divine exponents. Hephaestus the smith and Prometheus, also a fire god, but in Attic cult the god of the potters. There is no god of shoemaking or farming or building. Obviously these things everybody knows how to do, but it is very different with elaborate metal work… 'How on earth is it done? Some god must have invented it.'

In Western Africa, the culture that arose surrounding the cult of their smith-god Ogun is a perfect example of this revered power. In Yoruba, Ogun was one of their Orisha these are spirits that represent one of the aspects of God. He lived on the earth among humans. Ogun was a powerful warrior in addition to governing smiths and craftsmen. Because of this association the smith's role in African society developed in an interesting manner. They did not belong to a specific community but instead traveled from place to place plying their trade. This traveling made them outsiders and their skills were feared by everyone. Yet, because of their need, they also had to be accepted by the community. This limbo granted them an impressive level of autonomy. For example, they were granted immunity during village conflicts (Ogun: An Old God for a New Age 12-13).

The abilities of the smith and the nature of their work gave them a power which extended outside the forge and imbued them with the mystical and sacred power normally associated with priests. Iron was so important that, just as we swear upon a Bible in our courtrooms, these cults would swear their oaths while touching or holding a piece of iron (Ogun: An Old God for a New Age 22). Though these African smiths hold the type of lawless power which can often break down social order, it was their communities that kept them in check. Smiths were desperately needed by the community, but at the same time they desperately needed the community themselves. This cycle of dependency engendered a desire to help their society and individuals within it become stronger.

The Smith as Healer

A good example of how the practice of a healer and the trade of a smith can overlap is demonstrated in the story *Cath Maige Tuired*. In this story, the god Nuada has his arm severed during a battle. The forge god Goibniu fashions a new arm out of silver and attaches it to Nuada, returning to him a functioning arm. It's this joining of the two creative forces, healing and metalsmithing, which helps to define the direction of my work in making objects that are able to aid healing. Since it is my intent to live up to the spiritual examples set by deities, the first step I see on this path is to use my education in smithing to make objects that will help heal others. This education has taught me how to visualize things that do not physically exist; this has made learning Reiki easier. By making singing bowls I have gained a greater understanding of how to use them for healing in the same way that making a tool provides the smith with a more intimate knowledge of how it should be used.

Conclusion

My art is more than the finished objects. It is the interactions that I have with them along the way, and I hope that my audience is able to have their own moment of interaction as well. As I studied Reiki I began to see art as a physical representation of the link that is established between the artist and the viewer. I hope that through interacting with these singing bowls the viewer is able to open up to the idea that there are powers in the universe that cannot be seen or measured, and that this power has the ability to help us heal the world around us.

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