

Timbre of the Spheres: The Bullroarer and the Magic Wheel

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Abstract

A paradigm of *Breath* that integrates voluminous research on bullroarers and magic wheels is developed using Puterbaugh's (1999) definition of timbre within *sonopoietic space*—an articulated, individually experienced, culturally situated environmental dynamic. These two whirling aerophones have appeared worldwide since the Paleolithic in similar (though not identical) artistic, narrative and magico-mythological contexts within which initiation, weather modification, social justice, consciousness alteration, and other social necessities were enacted. Invoking Edinger's (1999) archetypal analysis, their timbre *is* Breath, not merely metaphor, and synonymous with the all-encompassing mysteries of metamorphosis—birth, growth, fertility, sexuality, excretion, decay, death, and rebirth. Traditionally, the instruments themselves were *community service providers* that mediated this spiraling, transformative energy within a supportive group context. Bullroarers especially were much-loved toys among boys and men, their timbre a *refrain* that triggered a socially-sanctioned time-out from the opposite sex and a welcome break from the ordinary. Life within this sonopoietic sphere brought ever more subtle, highly personalized experiences and understandings of social and mystical dimensions of ecstasy, fear, lust, pain, deprivation, justice, and oneness of body-in-cosmos. An inherently interdisciplinary geometric model of the cosmos in Plato's *Timaeus* is used to extend this research into Archaeoastronomy and the emerging field of World History.

Timbre: the Imaginary, Archetypes, and Sonopoietic Space

I have chosen *timbre* as the organizing dynamic for this inquiry into how bullroarers and magic wheels breathe the human imaginary. I focus on one primary archetype within this limitless sonopoietic domain: the cosmic spiral. This is a tall order.

I accept structuralist Gilbert Durand's virtual manifesto that the *imaginary* (imagination as the common denominator of human thought) is the dynamic spiritual and intellectual capital of *homo sapiens* (Durand 1999); and, as a corollary, psychologist Edward Edinger's conclusion that the archetypes of the imaginary are alive.

First of all, an archetype is a pattern: a primordial psychic ordering of an image that has a collective or generalized quality; it can be understood, therefore, to derive from the collective transpersonal objective psyche – rather than from the personal psyche. That is one aspect of an archetype. The other aspect to which we do not pay quite as much attention – but which deserves emphasis – is that the archetype is a dynamic energy: it is a living organism, a psychic organism that inhabits the collective psyche. And the fact that an archetype is both a pattern and an agency means that any encounter with an archetype will have these two aspects (Edinger 1999).

In an attempt to come to CIM05 well-prepared to discuss timbre with musicologists, an internet search uncovered the 1999 Princeton Ph.D. dissertation of John Puterbaugh — *Between a Place and Some Location: A View of Timbre through Auditory Models and Sonopoietic Space*. He distinguishes between *timbre spaces* (premised on the generality which arises from the necessity to represent many listeners' pairwise judgments of similarity between musical tones) and *sonopoietic space* (the space of listening constructed by a listener's creative interaction with a sonic event, inclusive of coherent sonopoietic imagery). "A sonopoietic image includes (i) listeners' understanding of a sound's underlying dynamics, (ii) how this image relates to other sonopoietic images (including both categorical and thematic relations) and (iii) a listener's sonic associations (e.g. contiguous events from past listening experiences" (Puterbaugh 1999).

My initial understanding of timbre grew intuitively from a Platonic idea elaborated in *Timaeus* that vibration is, at essence, all-encompassing creative license for the imaginary. Recast as sonopoietic space, it is the vessel, the *sphere* that invisibly *holds* materialization.

This inquiry does not delve into measurable timbre spaces but proceeds from the assumption that bullroarers and magic wheels of all shapes and varieties are primordial service providers that open an individual to the ever-evolving sonopoietic archetypes of the cosmic spiral. As Puterbaugh has written, timbre cannot exist in physical space but is created in interaction with the environment. This is quite compatible with what consciousness researchers propose with respect to the visual imaginary: that “visual experience is moored to our [neurological] structure in a binding way. We do not see the *space* of the world; we live our field of vision. We do not see the *colors* of the world; we live our chromatic space (Maturana 1987)”. In the case of bullroarers and buzzers, we do not hear their sound, we breathe.

Background for This Inquiry

I began the study of bullroarers fifteen years ago. I am a violinist and cultural anthropologist, and I realized one day as I was practicing that my violin's fingerboard was a spot-on representation of an ebony Yoruba bullroarer. I immediately thought of Aboriginals rubbing their sacred bullroarers with kangaroo fat and the countless times my fingers had polished my own precious board. Puterbaugh had not yet written his dissertation, and I had not yet fully grasped that I had dichotomized my entire life into two nearly separate sonopoietic territories of the imaginary: violin timbre, and without it.

The intensity of the bullroarer's emotional call was not something I could have anticipated, and ultimately it provided a clear delimitation and direction for all my art-based research. I have made hundreds of reproductions of bullroarers while at the same time collecting everything I can find, wherever it exists, about bullroarer shapes, sounds, meanings, uses, and practices in order to *place* it across time. As I will explain, its sound became a metaphor of reverberation, across cultures, as one or another of its aspects morphed into other artifacts and traditions. Bullroarers are so widespread – indeed they have been found across human history for at least 30,000 years — that as I carved and painted the ancient and indigenous designs, and swung the instruments, I felt a familiarity arise in me and I began to experience them as an echo of global human consciousness.

The more systematically that I engaged the sacred narratives of bullroarers and magic wheels throughout the world, the more clearly I understood that the spoken name of the material object — whether *bull-roarer* (as introduced in the mid-1800s by Andrew Lang), *rhombos*¹ (a Greek word for bullroarer and magic wheel which also means penis, rhomb, lozenge [related to vesica and womb], lower leg, fish), *Dhurumbulum* (just one of thousands of Aboriginal names for the bullroarer), or *Po* (the name given by the Dogon of Mali, to which I will return shortly) — was not distinct from the object itself but part of it. And so was I... as I engaged in a hermeneutic encounter (as anthropologist-musician-graphic designer with subspecialties in linguistics and sacred geometry) with a globally distributed artifact! The literature on bullroarers, which exists in many thousands of pages, is overwhelming. There is no way to keep it straight, for there is no clear path through it. For every alignment of meaning or practice, there is a discontinuity. Most anthropological treatments have focused upon their symbolic and magical importance in initiation ceremonies, funerals, healing, weather control, civil control, incantations and love spells, communication, crop and animal fertility, gender segregation... among other things (Baal 1963; Mathews 1896-1897; Zerries 1942; Dundes 1976; Gourlay 1975; Loeb 1929). Many of these uses are also attributed to the magic wheel, though to a lesser degree. My intent has been to introduce both instruments as tangible objects — for while practically every anthropologist knows about them, very few have even seen pictures, much less heard them. As artifacts within the profession, they exist as text.

I say all of the above to orient readers to the inherently, and probably unavoidably *presentist* bias in my interpretations. A cluster of traits, which I will briefly introduce, can be ascribed to the category of bullroarer, but no single attribute applies to all of them. There is one exception: they all make a highly recognizable buzzing sound, and that phenomenon organizes this paper.

¹ Goppold (1995-1996) proposes a semantic set based on Plato's interpretation of *rho* as movement. “The semantic field of *rho* yields the following: Under **rho** we find **rhema, the river, the stream. Rheo: everything in dissolution by flowing away and apart. Rhombos** is connected to **kymbo** and **kyklos**, and the modern derivation of **rotation. Rhyax, rhyas** is the upwelling and breaking forth of forceful currents and undercurrents. **Rhythmos** is again connected to **rhombos, kymbo** and **kyklos**. It is the rhythmic recurrence in all cyclical processes, also the (well-formed) proportion of Pythagoras fame, leading us into **harmonia**.”

An Encounter with the Cosmic Spiral

It was early on in my investigations of Plato's spherical model of the cosmos that I discovered *buzzers* in the company of bullroarers. (I had known their cousins, the toy button spinners since childhood, but had assumed that the *magic wheel* was not an artifact but the zodiac.) I was trying to visualize common geometrical archaeoastronomical representations of the ecliptic and polar precession in the Ptolemaic circular zodiac at Denderah in Egypt and the 24-ton Aztec stone *Cuauhxicalli* (*Eagle Bowl*, known colloquially as the calendar stone) from Tenochtitlan, the ancient capital at the center of what is now Mexico City (Hagens 1992). In a flash of insight, I thought I saw a stylized buzzer at the center of the Aztec stone and immediately made a hand-sized replica to see if it would work. The nostrils of the figure were at exactly the distance apart for efficient spinning.



Figure 1. (From left) The outline of the figure at the center of the giant basaltic monolith popularly known as the Aztec Calendar Stone is the glyph *ollin*. Translated as *movement*, it represents the primal vibration that set the cosmos in motion. The enigmatic face at the center of the glyph has been identified with *Coatlíque* (Earth) and *Tonatiuh* (Sun). The fish-shaped tongue is *Tecpatl*, the flint knife of ritual sacrifice. Hall (1984) and Brundage (1979) have noted symbolic equivalences between sacred flint blades and the bullroarer. To the right of *Tecpatl* is a typical fish-shaped bullroarer, this one my reproduction of a Bororo design (Hagens, after Von den Steinen Haddon 1898). A toy *ollin* buzzer I carved is shown above a 19th century Maricopa Indian buzzer from Arizona that may represent *ollin*; its opposite side is covered with stars (Culin 1975 [1907]).

It was quite by chance, and just in the past year, that an internet search brought up the *inyx* or *Wheel of Hecate* and introduced me to a whole new body of literature. I had not previously realized that *magic wheel* refers not only to the zodiac, but to the buzzer. Large birds and other flying sky Beings are very often associated with bullroarers, and as it happens, *inyx* is also the name of an actual bird (the wryneck). Consistently referred to in theurgical texts in the plural as *Iynges*, these mystical birds described in the Chaldean Oracles carried messages back and forth into and out of manifestation (Johnston 1990). Some scholars believe that a physical *inyx* was at one time bound splayed on a crossed magic wheel and spun as an erotic attractor.

A controversy has existed since early in the twentieth century among philologists and linguistic scholars as to the distinctions between and even the exact physical identity of magic wheels, bullroarers, and tops in classical Latin and Greek literature (Lewy 1978[1956]; Gow 1934; Tavenner 1933). There is no agreement on whether the mythological *rhombos* given to baby Dionysus before the Titans slew him was a bullroarer (the most common interpretation), a Wheel of Hecate (*inyx*), or a spinning spherical bronze top. Or a combination of these elements. Hecate is a *key-holder* (Johnston 1990), a triple goddess equivalent to the three *Moirae* (Fates) — the spinner, the weaver, and the snipper of the string of life — who sits at the boundary restricting access into and out of two adjacent ostensibly sonopoietic realms. Johnston believes the *inyx* might have been both a sphere (or other Platonic figure) spun to represent the earth at the center of a geometric cosmos, as well as a more conventionally imagined buzzer-like *inyx* wheel. Valery Makarov, a Russian engineer and historian, identified keyholes in unique 2500-year-old bronze dodecahedra from Europe and South East Asia that may be part of the family *rhombos* and precursors of Hecate's instrument. In any case, there is no disagreement that the timbre of these spinners is Creative agency.

My interests have always been the similarities in rendering, meaning, and usage of bullroarers and magic wheels across many cultures, and as I look back now, I believe that all along I have been encountering sonopoietic, archetypal imaginings as the living energy to which Edinger refers.² That energy is compelling, addictive, and connective. It demands conceptual and visual synthesis, Oneness. I felt and still feel this space as a world of morphs. For example, the little European iynx/wryneck was probably chosen for the magic wheel because of its snake-like hiss and its two-inch serpent-like tongue that darts from its mouth when it is approached. Snakes are the most common bullroarer design. Although most shell gorgets from Mississippian mound cultures in the central United States are clearly for body ornamentation (Stein 2002), some have center holes and could easily be spun. Others have the scalloped and notched edges of African and Eskimo buzzers. Still others are decorated with swirling snakes or engraved with long-tongued birds fastened to crossed-circles.



Figure 2. (From left) My reproduction of a typical 19th century rhomb-shaped Maori bullroarer (Zerries 1942) features spirals along the body of a cosmic snake decorated with lightning. My reproduction of a Bushman buzzer from South Africa (Buchner 1973) features 12 symmetrical openings reminiscent of the zodiac, notched edging so sharp that it may even have served as a buzz-saw, and keyholes. Keyholes are traditionally associated with Hecate, a European triple goddess of Fate, who is invoked when the magic wheel is spun. Ancient bronze dodecahedra from South East Asia and Europe, many more than 2500 years old, feature a keyhole in one face and may have been spun as tops or magic wheels. (Picture courtesy of Valery Makarov, 1981)

Anthropologist Robert Hall, who also sees very similar types of connections, explains them in terms of *bisociation*.

In North America bull-roarers were used (1) in weather magic, (2) to generate a sound which represented a spirit in initiations, (3) as amulets for protection, and were (4) probably viewed by some individuals as vision tokens. These are magico-religious and social functions. Bull-roarers were normally made of wood, but bull-roarers of stone are known. One of the principles I have used repeatedly in trying to probe the cognitive core of prehistoric cultures is that of resolving possible composite artifacts into their constituent parts and seeking the multiple associations of those parts (cf. Hall 1977). If some turkey-tails [flint blades] were in fact bull-roarers, then the components would be the bull-roarer, normally of wood, and the flint blade, not normally a bull-roarer. These components ordinarily relate to two distinct semantic sets. If some turkey-tails were actually used as bull-roarers, in what ways could those semantic sets have intersected in thought to suggest the innovation of a bull-roarer from flint? We are talking here of a

² The name *bull-roarer* is widely believed to convey its early association with Dionysus (the Bull God) as well as the idea that the instrument sounds like a roaring bull, though very few actually do. Most sound like horse flies, hummingbirds, or pheasants just flushed from a meadow. Coincidentally, most bullroarers are linked in some way to the constellation Orion which is located between Taurus (The Bull) and Sirius, widely known in antiquity as *The Roarer*. British explorers arrived in eastern Australia in the late 1700s, and surely encountered bullroarers as well as the very widespread Djabugay word *Bulurru*, “the source and condition of all life... ever-present in the land and people” (Quinn 1992, 16). By the early 1800s, Andrew Lang had introduced the term *bull-roarer* into the scholarly literature. This, I believe, is another example of timbre as a living archetypal energy.

cultural process based upon the principle of "bisociation" as defined by Koestler (1964; Hall 1977:505). If an area of intersection can be found, then the inference of a composite artifact obtains some support as a hypothesis (Hall 1983).

In the 1980s, Hall published a series of articles and papers unrelated to the above-mentioned philological discussions (Hall 1983, 1985a). His bisociative analysis of the symbolism of the Dogon bullroarer in the context of the Finnish mythic narrative *Kalevala* provides a remarkable window into the archetype of the cosmic spiral. Traditionally, the Dogon carved their bullroarers in the shape of fish. Their name for them is *Po*. *Po* is also their name for the smallest and most important seed in the traditional diet, the edible grain *fonio* (of the family *poaceae*). Hall reports that the spiraling turns of the bullroarer are compared by the Dogon to the creation of the world, to the broadcasting of grain, to a certain kind of filter basket woven in the form of a continuous spiral, and to the revolving of a small star *Po-tolo* around the prominent star Sirius. He connects the Dogon *po* to the Finnish *Sampo*, a cosmic grinding mill well-established as symbolic of the axial *pole* of rotation of Earth (Santillana 1969).

Using Hall's research and applying the principle of bisociation to the Aztec Stone, *Tecpatl*, the flint knife of sacrifice, is both a tongue and a bullroarer protruding from the mouth of the central Sun/Earth Being. The tongue very much resembles a fish, universally the most common bullroarer stylization. If this is so, we may now be able to decode the Stone as a calendar of precession. It appears to be, quite literally, a planetary-scale representation of the timbre as the archetype of the cosmic spiral. The magic wheel illustrated above is the zodiac, the most visible marker of the ecliptic — Earth's plane of orbit around the sun. The bullroarer is earth's axis of rotation that gyroscopically encircles the north and south ecliptic poles and brings into being the seasons.

Paradigm of Breath

The nostrils and mouth-with-tongue of the figure on the Aztec Stone led me to interpret more concretely the widespread idea that the sounds of bullroarers and magic wheels were vocalizations of the Invisible or magical breathing. I began to imagine the strings of both instruments as the breath stream, loops of air moving in and out of the human body. Inhalation and exhalation. The spiral winding and unwinding of the strings causes the pulsed hissing or buzzing sound of the instruments as they repetitively change direction.

Almost any relatively thin, sufficiently weighted slat suspended from a string will spiral and buzz, just as almost any flat, hand-sized shape with two center holes spaced about like human nostrils will spin and hiss. There's no real art to making fully-breathing instruments! A wood ruler and a large button will work fine. While a good deal of speculation exists about whether or not carving or notching or different aerodynamic sculpting makes for a *better* bullroarer or magic wheel, I am sidestepping that discussion. Efficiency and connoisseurship in manipulating the power inherent in sonopoietic space is different from a basic recognizable timbre that enables being There at all. For that, any bullroarer or magic wheel will do.

The voice of the bullroarer is consistently likened to thunder, and Tuzin (1984) has even proposed that the infrasonics of thunder are actually recreated by consorts of bullroarers. The principle of sympathetic magic has been invoked to link the bullroarer to water and liquids (Salvatore 1991). Thunder brings rain, and the water of rain brings fertility and new life. I believe the essential principle is *flow*, however, and that it is vocalization as an aspect of breath that enables materialization. Here I am restating ancient symbology that considers sound as Being at the origin of the cosmos. Nonetheless, in almost every other respect, Italian musicologist Gianfranco Salvatore's work on the sonic archetype of the cosmic spiral as played out in labyrinthine and ecstatic dance and as represented in the double spiral nature of the bullroarer (rotation of the thread and rotation of the slat), iynx, and spinning top complements my own.

The magic wheel mimics a range of pulsed tranquil and labored sounds of nose breathing, from the near-snorts of an excited lover through the whole range of controlled breath styles characteristic of yogic *pranayama*. In the latter tradition, the breath is meditatively focused as moving in a narrow loop up and down the front and back of the spinal column, activating the energetic *chakras* (*spinning wheels*) that bring expansive life energy to the mind/body and align it with the larger pattern of planetary and galactic spinning and cycling. The two holes through which the loop of string in the buzzer passes are simultaneously the nostrils as well as the two entry points at the center of each of

the seven chakras through which the breath passes in a single cycle. The sound of the bullroarer, on the other hand, is much more consistently identified with a terrifying, dark, swallowing presence. Its pattern of pulsed breathing through the mouth, rather than the nose, results in inhalation and vocalization. In the yogic tradition *mouth breathing* is known as the breath of death. Death is the creative partner to life, but mouth breathing can also signal imbalance and the imminence of physical death. Conceived in this way, the timbre of bullroarers and magic wheels are the life-giving principles of spinning as an axis and as a plane. As a sonopoietic image, breath unites all creative cosmic spinners—be they weavers, potters, dervishes, fire-makers, whirlwinds, or stars. All of them analogously enact the drama known in Greek as the tasks of the Moirae who spin, weave, and snip the thread of breath. The point I am making is that timbre as cosmic breath is not something detached and disembodied. It is sonopoietic imagery experienced and mirrored in every single inhalation and exhalation an individual makes.

Self and Society in Bullroarer Timbre

When I was able to produce that "just right" timbre (is this the right use of that word), the bullroarer created a vibrational resonance, granted a feeling of the flesh (self?) melting back into the universe. I think this is the experience of micro-genesis Heinz Werner refers to. Also, any child knows that spinning (or rolling down a hill) produces an altered state of consciousness - the bullroarer requires spinning and grants balance or ballast to the spinner while doing so. I often in morning movement try some spinning that I learned from watching the dervishes whirl... I imagine some shamans might use the technique... I think one reason nature peoples worship the 4 directions may be because it requires them to turn 360 degrees and see how wide and diverse the world is (and how slender the self). Isn't this also part of the experience of the labyrinth (Tom Goodridge 2005)...

I noticed that the bullroarer revealed its sound when I allowed myself to be moved by its movement in space... through alignment with the movement of the bullroarer, the energy in my body was expanding with my breath which became very deep and full. I was creating a body of resonance with the bullroarer and our shared environment, and the minute that my thoughts got in the way of this attunement, the bullroarer came crashing down to the earth. In a rare moment of oneness with the bullroarer, my boundaries seemed to expand, and I was no longer self-conscious. Although I heard the sound of the bullroarer, I cannot say that the sound was what guided my action. Rather I was totally embodied in an action which fused all my senses in the act of moving with the bullroarer in our shared environment (Joan Davis 2004).

I am lucky to have worked with two such fine Ph.D. candidates as Tom Goodridge and Joan Davis, and I've quoted above from personal communications they sent in response to an arts-based research seminar I offered and in which I simply asked the participants to go outside together and swing plywood bullroarers in the sunshine. To be fair, I need to say that both are movement artists and emphasize the transpersonal in their coursework. Nonetheless, the character of their experiences supports Puterbaugh's idea that timbre as sonopoietic imagery is an articulated, individually experienced, culturally situated environmental sensation—and mine that it is an ancient archetype, still very much alive.

Whereas mantras or chants need to be matched to the energy dynamics of individuals, an individual can establish a relationship with virtually any bullroarer. Several anthropologists have taken a more empirical approach to this relationship and have suggested that bullroarers produce infrasonic frequencies (below 20 Hz.) that are also present in (among other things) thunder, earthquakes, ocean waves, and deep drums and gongs. Since thunder beings are often associated with bullroarers, and since human brainwaves fall within the lower infrasonic range, they speculate that intentional consciousness alteration may have been part of the total design process for activities in which bullroarers were swung (Tuzin 1984; Waller 2004). While other research confirms that infrasonics embedded in performance pieces do induce alterations in emotion and perceptions of a mysterious presence (Angliss), bullroarers have been tested in lab conditions (Fletcher 2002) and apparently do not create sufficient pressure waves to produce a sensation in the brain. However, the interaction between weather, acoustics, the rate and character of swing, power of the swinger, and weight of the instrument have yet to be explored in terms of their cumulative effect.

Speaking now just of bullroarers, for there is not yet enough information on the actual use of magic wheels cross-culturally, the instrument is almost always swung in the context of a group or with the expectation that others may be within hearing range. A newly circumcised Aboriginal may wander alone swinging a small bullroarer to ease the pain of the cut, but he is also tacitly sending a signal

that females must avoid him and under no circumstances look at him.³ The traditional administration of justice among the Yoruba in West Africa was enacted by members of the cult of *Oro*, the god who taught man to use the bullroarer (which was also called *oro*). The men delivered execution sentences on persons guilty of exceptionally violent crimes and announced their decision by surrounding the house of the accused and whirling bullroarers (Ellis 1894). This is just one example of a much more widespread phenomenon of social control via the bullroarer. The variety and emotional intensity of social circumstances within which an individual might experience or even just imagine bullroarers is remarkable. And as if the human collective psyche needed an archetypal escape valve, bullroarers were also toys. F. E. Williams believed that the men in Orokolo on the Papuan Gulf would look for any opportunity to get out the bullroarers, head to the *eravo*, and enjoy a feast. Even initiations, he wrote, were not the grand sacrosanct affairs that they had been cracked up to be—and some boys, depending upon the wealth of their fathers, had been initiated three or four times and didn't even know it (Williams 1936).

Another of my students, Fred Landers, has introduced me to the concept of de-territorialization (Deleuze 1987) and how it might apply to sonopoietic space. Within the territory of the normal, bullroarer timbre might be thought of as a *refrain* that implies a departure from the mundane and entry into the freedom of wholly creative openness. Because these are humans, with human foibles, who enter bullroarer timbre, however, they immediately encounter and adapt to different, though equally stringent social rules and entrapments of this space. That the bullroarer is also a toy and may sometimes introduce the element of play into the transition from one space to the other is crucial. Play is a negotiated agreement to pretend, to open fully to the imaginary, and it is essential to individual and social learning and evolution (or *re-territorialization*). I believe this is why some exquisite bullroarers were displayed and accorded inordinate respect, but never sounded. They sanctioned the imagination of what might exist. I was surprised that with almost Buddha-like disregard, a broken bullroarer was thrown into the bush to rot, with no particular fanfare, even if it had been very powerful. Given the abundance of bullroarers and the ease with which they could be made, access to the space seems to have been more highly valued than the artifact providing the service.

Sonopoietic Visualizations of Oneness of Body-in-Cosmos

The cosmic tree

Humans have for so long lived in intimate relationship with trees that I have wondered if somewhere in the archetypal past, *timber* and *timbre* were undifferentiated. Many traditions maintain that bullroarers live in trees and have only to be set free through the ritual act of carving. Trees are stripped of their branches, decorated, and ritually set as lodge poles, nurtunga poles, crosses, and other markers of the north or south *pole*. Within sonopoietic space, the bullroarer is this tree. Some horizontally striped bullroarers, when swung, create an optical illusion of concentric circles that are carved on other bullroarers and recall the labyrinth. Here is yet another manifestation of the cosmic spiral widely acknowledged as a symbol of the pole and cosmic tree (Cook 1974). The human body walking a labyrinth becomes the pole, bullroarer, and magic wheel at once. Again, I quote one of my seminar participants:

As I move into the center, my movement and energy become concentrated on a small point and then quickly reverse direction, slowly expand, and unwind as I spiral out into the periphery. I simply walk the circular trajectory and discover what emerges next. Each moment is ephemeral. At one point I had this strange feeling that I was being walked (I was so at one with the rhythm and flow of the path) rather than doing the walking. Yet before I could grasp the nature of this quality, it changed into something else (Joan Davis 2004)...

An even more dramatic merging of human with cosmic tree and bullroarer is the summer solstice sun dance still practiced by American Indians of the plains. In order to bring rain, fertility, and general blessing to the people, the *pledgers* are pierced through the chest with large hooks fastened to a rope which suspends them from a large pole, or allows them to lean outwards from the pole as they move in a circle around it. The ceremony is accompanied by deep drumming to invoke thunder beings. In

³ While I cannot go into it at this time, it is worth noting that many mythologies describe a woman giving birth to the bullroarer or the bullroarer being taken from her entrails after she is slaughtered. In another story, bullroarers are first given by the Creator to women (or a woman), who then is encouraged or coerced to give it to men (Levi-Strauss 1966; Loeb 1929; Dundes 1976; Baal 1963).

some historic cases, the pledger was actually swung from the pole.⁴ Like the pledger, Orion also appears to circle the pole, and the constellation is almost always somewhere to be found in bullroarer timbre imagery. For the past several hundred years, the summer solstice sun has been directly above Orion's head and so, at noon on the solstice when sun dance rituals are and were held, Orion stands invisible, but center sky. At the same time, in the southern hemisphere, it is midnight and Orion is visible and at its zenith.

Orion

From the perspective of sonopoietic imagery, it is important to realize that how this constellation is observed is dependent upon one's position with respect to the equator. At 30 degrees north, the stars surrounding the Orion Nebula create the illusion of a sword or penis. At 30 degrees south, these same stars create a breastbone (which covers and protects the heart). Bullroarers made from human breastbones have been documented in Papua New Guinea (Lewis 1973), and they look remarkably like Aztec ceremonial flint and obsidian knives used to cut the hearts from sacrificial victims. In the Northern Territory of Australia, Rosalind Poignant has woven together a composite story of a primordial figure named Stone Axe who is associated with thunder and lightning, as are the Lightning Brothers who introduce subincision (a once standard practice at initiation ceremonies). When Taipan (a kind of hermaphroditic Rainbow Snake, who might also be Stone Axe) swings his stone knife as a bullroarer, thunder roars and lightning flashes. In retribution for some transgression on Taipan's part, Blue Lizard cuts out the heart of his son — and Taipan gives the blood to humans, thereby gaining control of physical processes related to blood (Poignant 1967).

Ouroboros

The spiraling cosmic self-defecating snake is, I believe, the most significant and profound image to arise within bullroarer timbre. I did not notice it for a long time, probably because bullroarer ceremonies involving subincision, the eating of excrement and drinking of urine, and sodomy were subjects that (as a politically correct denizen of my times) I could accept without judgment but chose to ignore (which, as a researcher, was a really bad choice). But as I educated myself in the striking parallels between Australian cosmology and the mythology of Ouranos and Gaia, I began to count the number of times that the name *Oro* appeared in conjunction with bullroarers around the globe. I remembered a description of the material world that I had read many years before in *Timaeus*⁵.

The shape he gave it was suitable to its nature. A suitable shape for a living being that was to contain within itself all living beings would be a figure that contains all possible figures within itself. Therefore he turned it into a rounded spherical shape... there was no surrounding air which it needed to breathe in, nor was it in need of any organ by which to take food into itself and discharge it later after digestion. Nothing was taken from it or added to it, for there was nothing that could be; for it was designed to supply its own nourishment from its own decay (Plato 1965).

Holding this image, I could understand why, for example, the traditional ritual initiation areas for young Keeparra Aboriginals were called *place of excrement* and *place of urine* (Mathews 1896-1897). This is what the world *is*, as surely as *Ouranos* is arguably the *Universal Anus* and *Gaia* the *Universal Dung Ball*. Orion is born from an ox hide urinated upon by Zeus, Poseidon, and Hermes. His name derives from the Greek for urine, *ouro*. The young Keeparra (and many other initiates on other continents) were ritually coated in excrement, but returned to normal space with the story that they had been swallowed and excreted by the monster whose voice is the bullroarer. Is it archetype or diffusion that explains the similarities between Egyptian and Aboriginal bullroarers and the Keeparra initiation practices and rites of *Khepera*, the divine scarab? We don't often think of the lavish jeweled scarabs that decorated the mummies as representations of dung beetles who nourished their *pupae* in excrement. We have, however, appropriated this term into English as *pupil*. Even the enigmatic *philosopher's stone* is buried in excrement (Jung 1992).

If the secret of bullroarer timbre is the expansive One-ness, it is almost ironic that timbre is itself a duality, a vibration. The rules of ritual sonopoietic space mirror this reality and enforce strictly dichotomous codes based upon sex, age, and bloodline. Individuality is socially submerged in group conformity while at the same time the visceral truth of the space is that borders are all in the

⁴ This is re-enacted in Sydney Pollack's 1972 film *Jeremiah Johnson*.

⁵ I have written extensively on the geometry of this model (Hagens 1997, 1992, 2003).

imagination and individual freedom is infinite. Analogously, Breath is the engine that establishes Unity and at the same time transforms and dissolves it. Processes that we separate — inhaling, exhaling, eating, excreting, impregnating, feeding... just to begin the list, are not separate in the timbre space of bullroarers. Nor are species. I will let a single example from what I think of as the classical bullroarer literature makes my point here.

Even more evident is the relation of phallus and bull-roarer among the Trans-Fly people. Here the bull-roarer is the central secret of the homosexual initiation rites, in other words: it is very closely associated with the male sex. The aspect of fertility is not lacking either. Sodomy is said to favour the rapid growth of the neophytes, the overt aim of their seclusion. Where continued heterosexual intercourse is thought to be indispensable to the prosperous development of the foetus in its mother's womb, we may look upon homosexual intercourse as a form of feeding the neophyte in order to further his intended growth (Baal 1963)...

Everything we take in has been discharged by another part of the Breathing cosmic body. Fortunately, the remnant of this sonopoietic archetype persists in the Indo-European root morpheme *sker* — which is a homonym for *cut*, *turn*, and *excrement* (Morris 1969) — and which may scare us into a new mythology of sustainability.

Implications for Musical Practice

The promise and at the same time the peril of instruments such as the bullroarer and the magic wheel is their ability — however it happens, however it happens with *any* beautiful or powerful sound — to open an individual to the unknown vastness of the Self as Cosmos. When this linkage with the invisible, abstract Essence happens in a supportive, conscious group situation, a kind of bonding can occur that apparently strengthens an individual's connection to others and breeds personal health and creativity. This has vast implications for how we might introduce musical instruments to young players as whole body-soul technologies.

The *rhombos*—whose etymology has been so elegantly tied to flow, rhythm, harmony, and rotation and “the upwelling and breaking forth of all these currents and undercurrents,” (Goppold 1995-1996) may actually be the *primordial structure* that scholars of the archetype and the imaginary have so long sought. The core of the human brain itself, poised at the end of the spinal cord, may in the end be the ultimate bullroarer to which we should be paying attention.⁶



Figure 3. In this painting (Hagens 1993), the *Śrī-yantra* (a Hindu yantra of the Mother Goddess) is superimposed on the human midbrain and emphasizes its rhombic symmetry. The *yantra* derives from a Sanskrit root meaning “to compel”, “to restrain,” and “to bend.” A reference in the *Bhagavad gītā* describes the yantra as something mechanical, perhaps puppets mounted on a revolving apparatus, a toy or merry-go-round (Ramachandra Rao 1988). Traditionally the *Śrī-yantra* is drawn free-hand.

⁶ See my expanded treatment of the brain and Paleolithic rhombic artifacts (Hagens 1991).

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