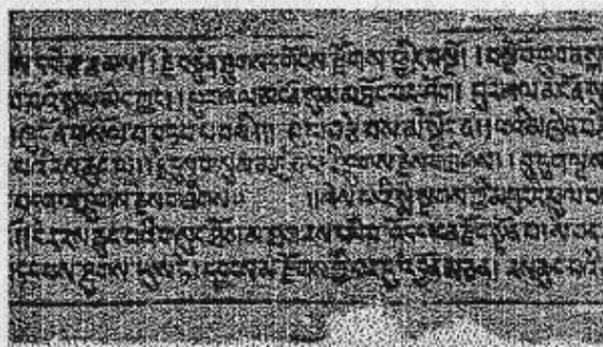


o v e r t u r e

for seven strings

Michael Edward Edgerton



Vedic hymn

Two Versions:

Version A: Opening music to CREATION OF THE WORLD – Part one: *SANGITAŚIROMANI*

Version B: concert music

Revised April 2003

This *overture* functions as an overture to the first scene of the opera CREATION OF THE WORLD and as concert music. What distinguish the two versions are separate endings for the opera overture (labeled Ending A) and the concert overture (Ending B).

As only the ending material is altered, both versions make use of a system of correspondence between tone, imagined- and real-world phenomena. For this overture, the system referenced the *SANGTASIROMANI*, a medieval handbook of Indian Music, the "Crest-Jewel of Music", written in 1428 A.D.

Ancient north Indian treatises, such as the *SANGTASIROMANI*, and the *RG VEDA* have influenced the musical language and form of the overture. These ancient texts were concerned with developing relationships between human existence and those elements of the world that affected the life within our bodies, spirits and intentions. Therefore, ancient structures of affect that ruled the planets and our expressions are of interest in this project. The result of the systems that were developed had a robustness whether the stimuli encompassed words, music, movement or theater, within cultured or pedestrian environments. Some of these expressions will interface with ancient techniques within a multidimensional complexity of observed performance. In this way the reference to the creation of the world is seen to take place on the local level, suggesting a personal responsibility of the world within and around us. The music is exploring the multidimensional parameter space outside of fundamental frequency obsession. The drama is not based upon a linear narrative in any of the sections, but will attempt to dramatize the elements of performance on more or less equal perceptual levels. As well, interactivity may factor into the performance and construction of the event.

SYSTEM OF TONAL ASSOCIATIONS:

	<i>Sadja</i>	<i>Rsabha</i>	<i>Gandhara</i>	<i>Madhyama</i>	<i>Pancama</i>	<i>Dhaivata</i>	<i>Nisada</i>
Sage-poet	Agni	<u>Brahma</u>	<u>Soma</u>	Visnu	Narada (1,2)	Tumburu (aka viradha)	Tumburu (aka viradha)
Deity	Brahma	Agni	Bharati	Siva	Indra	<u>Ganesa</u>	Bhanudeva
Being	Ancerster, Bird	Semi-divine being	<u>Cattle</u>	Human being	Deity	Demon	Sudra class
Animal	<u>Peacock</u>	Cow	Goat	Heron	Cuckoo	Horse	Elephant
Finger	Ring-finger	Middle finger	Index	Thumb	Top of thumb	Little finger	Top of little finger
Sentiment	Heroism, fury wonder	Heroism, fury wonder	Compassion	Humor, love	Humor, love	Disgust, fear	Compassion
Color	Red	Orange	Golden	White	Dark blue	Yellow	Multi-colored
Poetical meter	Anusthubh	Gayatri	Tristubh	Brhati	Pankti	Usnih	Jagati
Community	Gods	Seers	Gods	Gods	Ancestors	Seers	Demons
Veda	Rgveda	Rgveda	Yajurveda	Yajurveda	Samaveda	Samaveda	Atharvaveda
Application	Divine act	Contemplation	Adoration	Recitation	Festival	Royal act	Amusement
Pitch	Med	Lo	Hi	Med	Med	Lo	Hi
Part of the body	Throat	<u>Head</u>	Nose	Heart	Palate	Vocal cords	Vocal cords

The system of tonal associations as described in the *SANGTASIROMANI* is shown in the table above. The correspondence between the elements are regulated according to prominent tonal centers within music. In this overture diatonic tonal centers are not utilized, but centers of attraction are suggested. These centers are identified according to the distribution of the svara over 22 sruti.

These svara are identified along with their sage-poet below:

0 - 2'07	Madhyama (Visnu)
2'07 - 3'00	Nisada (Tumburu)
3'00 - 3'25	Madhyama (Visnu)
3'25 - 4'41	Sadja (Agni) ; Gandhara (Soma); Panama (Narada); Sadja (Agni)
4'41 - 6'00	Samudra-Manthana
6'00 - 7'20	Pancama (Narada)
7'20 - end	Madhyama (Visnu)

the character of each corresponding section of music will refer to the qualities of each sage-poet.

Visnu -

is the second god of the Hindu triad (Brahma, Visnu, Shiva) and is the preserver of the universe who represents mercy and goodness. He is said to be the cosmic ocean nara, meaning water, which was the only thing in existence before the creation of the universe. For this reason, he is also known as Narayana, or "one who moves on the waters".

Vishnu is represented as a dark man with four arms. In one hand, he holds a club, in another a conch shell, in the third, a discus (Chakra), and in the fourth, a lotus (Kamal). He is usually dressed in yellow robes and therefore also known as Pitambara, or "one with yellow garments". The river Ganga is said to originate from Vishnu's feet. He is also depicted as resting on a coiled serpent Seshnaga or Ananta which floats on the cosmic ocean. According to the Mahabharata, Vishnu's abode, Vaikuntha, is made of gold and jewels. However, he is usually depicted reclining on Seshnaga, who floats on the cosmic ocean. His vehicle is Garuda, and his weapon is the discus, Sudarshana Chakra.

The Padma Purana describes him as the Supreme Being, identifying him with Brahman. It states that Vishnu, wanted to create the universe. To this end, he divided himself into three parts: from his rightside, he produced Brahma the creator; from his left, he produced Vishnu, the preserver; and from his middle, he produced Shiva, the destroyer.

Tumburu - (aka. Viradha)

a celestial being who had made the mistake of courting Rambha, who was already in the service of Lord Kubera. For this mistake, Tumburu was cursed to be placed in the body of the demon Viradha, an evil and vicious demon, who was infamous for having kidnapped the scions of Kakutstha, Rama and Lakshmana. On hearing Seetha's cries, Rama and Lakshmana, the valorous ones, organized the fight against the evil-minded demon. First, that ferocious one's left arm is severed by Soumitri while Rama broke the right arm of that demon. With his arms destroyed, the evil one becomes frightened and falls to the ground pleading for his life. The heroes beat the demon with their fists, hands, feet, and also even heaving him again and again on the ground. Although he is sheared by many arrows, two swords and severely beaten the demon is not killed. Not being able to kill the demon, Rama and Lakshmana prepare to bury the demon in a very large pit. Just then, from within the demon a voice reveals that he is a celestial being who entered the demons' body by curse by Lord Kubera, and when the demon dies, Viradha is released and attains his celestial body and goes to the heavens.

Agni -

In early Hindu mythology, Agni is one of the most important of the Vedic gods. He is the god of fire, and much of his importance comes from the role of fire in sacrifices and rituals. As the fire which consumes the offerings to the gods, he is seen as the mediator between heaven and earth. He was so important to the ancient Indians that 200 hymns in the Rig Veda are addressed to him, and eight of its ten books begin with praises dedicated to him. To honor Agni, Hindus are expected to face fires in the proper direction for different purposes. When facing East, the fire should be used for sacrifices to the gods; when facing South, the fire should be used for sacrifices to the spirits of the dead. Fires should face west when used for cooking.

Fire, is not merely the physical fire we know but the ramifications of the fire element throughout all nature. He is the vital spark in the earth; lightning in the sky; and Surya the sun. He is the sap in the plants, which is carried down to them by the rain. He is present even in the dry sticks for, by friction, he can be brought to birth from them, and, when freed, soars to heaven. He brings fire down to earth as the lightning, which escapes from the ocean of clouds, which hide it. He is electricity itself and the vital element in man, power over which gives complete freedom and mastery over life. Just as there are seven notes to the scale and seven colors in the spectrum, so fire is sevenfold in its nature, and as each seven can be subdivided seven times, we have the forty-nine fires spoken of. Fire has always to be brought forth from where he is hiding, but, when he has been released by friction, he has the power to light innumerable things. Fire by friction is one of the earliest gifts given to man by divine beings that helped infant humanity, it is said, and sacrifice by fire has been part of religious rituals down the ages.

There are many descriptive passages in the old scriptures of this great nature god. He is described as raging in the forest like a lion whose golden mane flies in the wind. He eats up everything that is in his path, and breathes out smoke as he burns up the living trees, leaving behind him blackened stumps. Even the wheels of his swift chariot leave dark tracks in the forest, and the sparks, flying out on all sides, turn the grass into a withered mass. All nature is terrified of his approach. He is also likened to a bull among a herd of cows, or to the onward rush of huge masses of water.

In Modern day Hinduism, Agni is regarded as a divine purifier and mediator who conveys oblations to the gods. Because fire is generally present at all important ceremonies, Agni may be thought of as a divine witness to these rites. A sacrificial fire, no matter how small, often plays a key role in many Hindu rituals.

Symbolically, fire, light, and the sun have been used in a variety of religions throughout the ages. Indeed, the sun - as well as a number of other natural phenomena - was even worshipped as a god itself in ancient cultures because it provided warmth and comfort. Together with a balanced period of rain or proper irrigation, sunlight promoted the flourishing of agricultural crops. The sun later acquired human attributes such as gender and emotion. It 'lived' in the sky and 'walked' from east to west every day, 'watching' the activities of the humans on the earth. When it was pleased, it provided warmth. When it was angry, its heat intensified; or it didn't appear at all and remained behind rain clouds. In order to influence the sun - to appease it and make it happy - some cultures developed systems by which they offered it a form of gift or sacrifice. Valuable items such as animals, livestock and fruit were thought to be appropriate to offer the sun in exchange for its regular appearance. As it was not actually possible to give something directly to the sun, a method of transfer had to be devised to ensure that it received the gifts offered. Since the sun lived in the sky, gifts had to be delivered there in order for them to be effective. It was thought that by burning gifts, their essences would rise up to the heavens and reach the sun. It was believed that while the charred remains of the gifts were left on earth, the true essence of the gift would ascend into the heavens and hopefully be received by the sun. To facilitate a successful delivery, a specialist was required to perform the ritual in an appropriate manner. This was the role of the priest. Vedic priests were in charge of keeping Agni, the god of sacrificial fire and representation of the sun, here on earth. Fire was eventually deified because of its importance in this process. Offerings were made to the fire in the name of Agni's wife, Svaha. Vedic legend holds that Svaha once asked Agni to ensure their continued unity. To do this, Agni required that all offerings made to the gods through fire be made in her name. After any oblation, a priest would invoke her name.

The god Agni may be depicted as a red man with dark red eyes and thick eyebrows. Tongues of flame may come from his mouth as he licks the butter which priests offer to the sacrificial fire. Agni may hold a spear, a fan, a cup, ladles, or other implements associated with ceremonies and sacrifices. His vehicle is a ram. Indicating his service as a priest to both gods and humans, Agni may indicate this liaison role by wearing the sacred sash or thread of a Brahmin. He may also be shown with seven rays of light, or streams of glory, radiating from his body. In the form of fire, Agni is present during all significant events in people's lives. And at death, through the flames of a funeral pyre, Agni accepts the body as an offering. Agni is one of the few original Vedic gods who has retained his importance in the Hindu pantheon. A large proportion of hymns in the Vedas are addressed to him.

Soma -

Soma, in Hinduism, is a Vedic god, plant offering, and beverage. In the Vedic texts the sacred, deified substance Soma is paired with Agni, fire, the devouring principle. Both were major divinities of Hinduism before the later emergence of Vishnu, Shiva, Shakyi, and Krishna. In the *Rig Veda* more hymns, some one hundred twenty, are addressed to Soma in his various forms than any other figure. Soma is that which is offered, is food, the food of the universe, the drink that leads to immortality, a beverage, the beverage of the gods, the divine nectar, is semen, the essence of life, is the Moon. In the *Rig Veda* the doughty warrior-god Indra consumes huge quantities of Soma both for his uproarious pleasure and for the strength it gives him in slaughtering his enemies.

In the Vedic period priests in ceremonies consumed this divine substance. Soma produced a state that raised man to the union with the divine, a state, as described in texts, that was, in contemporary terms, psychotropic. The priests, the only ones privileged to partake of Soma, connected it to heavenly forces emanating from the Sun, who was also a god. "Soma is your share, accompanied by the rays that are his in common with the Sun," says the *Rig Veda*, and "Purify yourself with the stream with which thou [Soma] has made the sun to shine," etc. As the sacred drink soma possessed powers of a wonderful and awesome nature; as the food of the gods it had the character of sanctity, the deities' most beloved nourishment raised man to a vibrant state of divine ecstasy.

Texts indicated that soma was a plant that grew in mountains alone, it was leafless, branchless, and possessed a heavy stalk. It was prepared by crushing the stem; the juice was mixed with ghee, milk, or yogurt. Soma, in color, was a golden yellow, or a morning yellow, or the color of fire, fire in the morning, and so on. This unusual plant became more difficult to obtain when the Aryans moved farther from the lowlands of the mountains in northwestern India into the burning plains of India. It was then, at some point, the priesthood appeared to have decided on the separation of soma and its psychotropic effects from ritual consumption. Other, non-hallucinogenic plants were substituted in the rituals for soma, and simultaneously the priests turned toward a psycho-spiritual technique, followed to its end, which produced another mind-elevating experience. The technique was yoga, with *samadhi*, union with the Divine Self, as its end.

Narada -

One of 10 Prajapatis, who are believed to be the fathers of the human race, created from the mind of Brahma.

The ultimate philosophy or goal of an individual according to Indian philosophy is liberation, or 'Moksha'. Many Saints and Gurus with their Spiritual experience gave their disciples or Sishyas easiest ways to attain liberation. One among them is Music and only music can inspire infants, animals, and also wild snakes. By this it is clear that music is the language of hearts, which is universal. Origin of Indian music is very ancient. It is as ancient as 'Aumkaara'. According to the School of Bharatha, the origin of Indian music is Aumkaar, which is the eternal echoistic sound, known as 'Shabda Brahman'. This 'Aumkaar' is composed of three syllables: 'A', 'U', and 'M', which together sounds 'AUM'.

It is believed in Hindu mythology that Lord Brahma, the creator of Chatur Vedas is the primary source for Indian music. He passed this to Lord Shiva, who in turn passed this divine knowledge to Goddess Saraswathi, who is treated as divine mother of music and literature. Her son, a heavenly Saint, Narada propagated this divine art of Music both in heaven and on Earth. The theory of this subtle sound according to Narada is that the soul inspires the intellect, which in turn ignites the fire at the naval point, heart, throat, tongue, nose, and comes out as subtle sound which is 'Naadam' the vibration.

This 'Naadam,' or vibration, is of two types.

1. Ahatha naadam - the sound used in transcendental meditation;
2. Anahatha Naadam. The subtle sound that can be heard first is the Sruthi or Key.

Samudra-manthana -

In the story of Samudra-Manthana, the Devas and the Asuras, the bright and the dark powers, both combined to churn the milky ocean to obtain the elixir of immortality. Here we do not have an absolute dichotomy of good and evil, rather the bright and dark powers are related within the whole theory of duality. Promising them a share, they invited the demons (Asuras) to take the tail of the serpent Vasuki, wrapped about the giant churning pole like a rope. The pole was fixed to the bottom of the ocean and the waves it made in twisting one way and the other way threatened to destroy the three worlds. Lord Vishnu incarnated himself as a tortoise Kurma, taking the pole on his back to prevent the commotion. Glorious treasures emerged from the churned milk: Kamadhenu, the all-giving cow; Kalpavrksha, the wish-fulfilling tree; Accairava, the divine horse; Airavata, the divine elephant; Mahalaxshmi, the goddess of wealth and prosperity. These and other great gifts appeared and were happily divided between Asuras and Devas. The ultimate objective was the pot of ambrosia, the elixir of immortality, the amrita kalasa.

As identified in the score, each musical section retains the affection or characterization ascribed to each sage-poet as described above.

SOUND PRODUCTION

In the *SANGITASIROMANI* sound production is part philosophy and religion (correlation of physiological and psychological processes with cosmology):

Which 1st stirs in the mind
which stimulates the will power
which starts the vital breath (1 of 10 modifications of the cosmic wind).

Before vibration becomes audible sound it must be transferred via certain channels from levels below audible threshold to higher audible levels.

The basic vibration or vital breath rises from sacred junction (found at the base of metaphysical nerve system - near base of spinal cord), there lies the creative, cosmic power, the female aspect (Sakti) of Brahman, "coiled like a snake" (kundalini).

This coiled Kundalini - Sakti passes through 6 centers:

1. near bottom of spine
2. base of genitals
3. near naval
4. heart
5. throat
6. between eyebrows

In this way, Ancient Indian Acoustics is a religious concept of sound production - vocal sound is human body: creation of Cosmos (essence of Cosmos is Brahman)

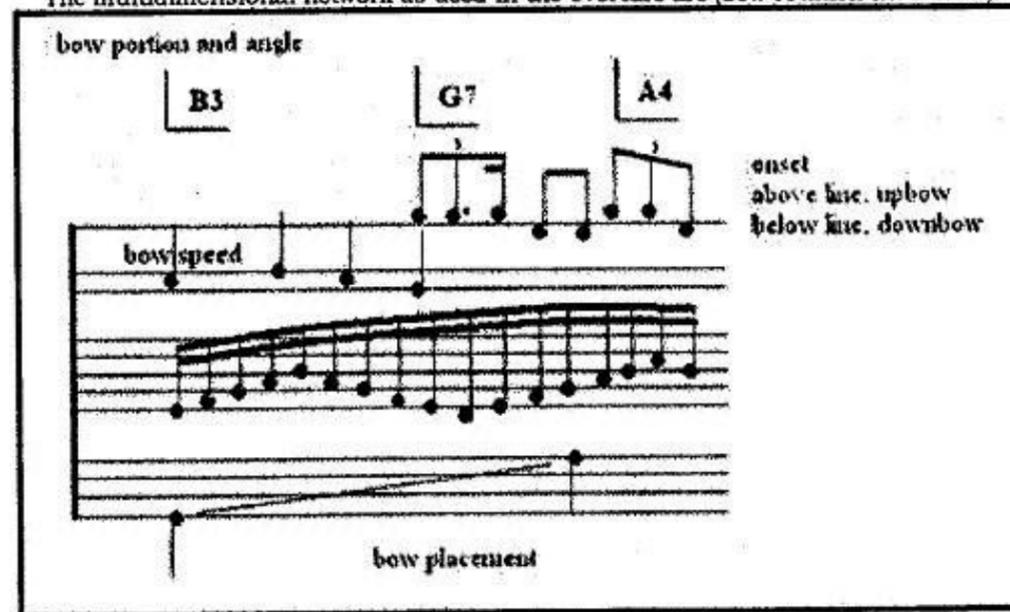
In the Vedic view, the universal/creative power is activated through singing/chanting and through this act creation is renewed. However, it was theoretically important that *the slightest defect in intonation was considered to be disastrous* - like a great sin that could spoil or destroy the world.

During the performance of *SANGITASIROMANI* the essence of the Brahmanic Cosmos precedes the overture through the prayer to Agni and the production of a high airflow multiphonic by a vocalist produced from sakti through the 6 centers that stimulates the will power to produce the cosmic wind.

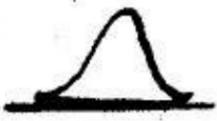
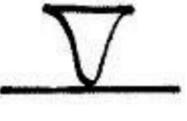
Then in the overture, the creative cosmic power is realized by sifting through the atomic elements of the continuum via the scaled, multidimensional networks. The idea is that a scaled multidimensional parameter space not only expands spectral exploration through nonlinear phenomena, but also affects the 6 centers identified above. Technically, in order to focus closely on the perceptual and

acoustical attributes of a multidimensional parameter space, each instrument shifts primarily one element at a time, although the revision has enlarged the simplicity of quantified experiment. In this revised version, the elements outside of rhythm and pitch include: bow speed, bow portion, bow angle, bow placement, onset designation, and bow rotation. The value of shifting the elements in a scalable manner has two benefits here: 1. to radicalize acoustic periodicity (limit cycle) by shifting prominent variables during the production of sound, so that the acoustic output will feature dynamical transitions (bifurcations) to higher-level attractor states (folded limit cycle, tori, chaos); 2) to increase compositional redundancy across the multidimensional parameter space.

The multidimensional network as used in the overture arc (bow rotation not shown):



Below are brief descriptions of what the symbols refer to, what the variables are, and how they are scaled:

bow rotation: (not shown above)			
full hair	slight hair	wood and hair	wood only
			

bow length (+ portion) and bow angle:

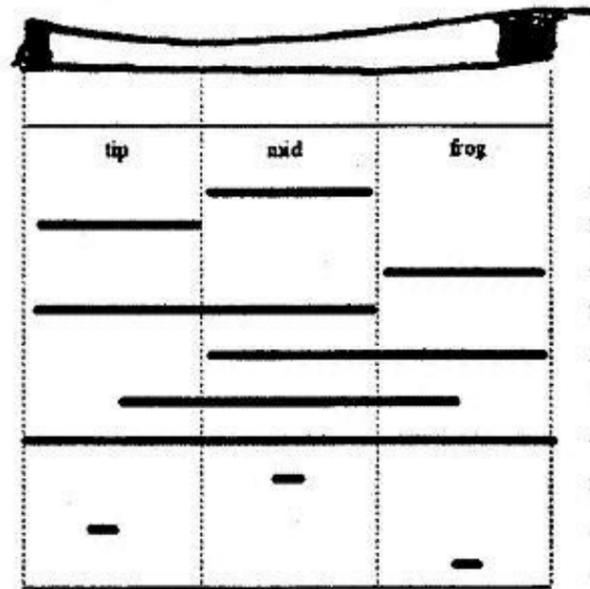
bow length and portion:

10 bow lengths are identified relative to a three-part division of the bow: tip, mid, frog;

Within each field (or graph, shown at far right), two complementary elements are identified: bow length and bow angle. These are identified in two ways: 1. through a graphic notation that displays the approximate length/portion and angle to be used, and; 2. through the paired letter and number notation found at the top of each field.

Each letter represents a length and portion of the bow to be used and are identified to the right. All of the lengths and portions will feature slight variations in performance.

The following integer represents the angle of the bow relative to the fingerboard on the horizontal plane.

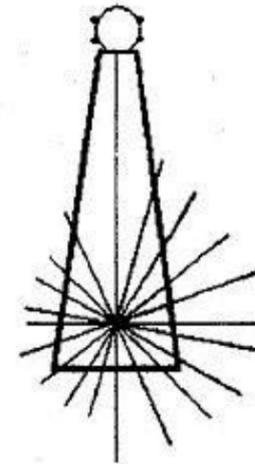


- A = 1/3 mid
- B = 1/3 tip
- C = 1/3 frog
- D = 2/3 mid and tip
- E = 2/3 mid and frog
- F = 2/3 centered
- G = whole bow
- H = minute portion mid
- I = minute portion tip
- J = minute portion frog

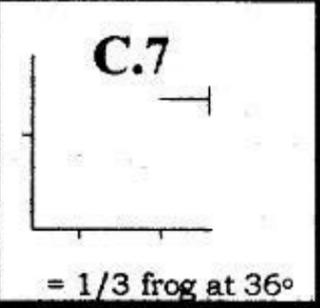
bow angle:

11 bow angles are identified, relative to fingerboard; length and angle

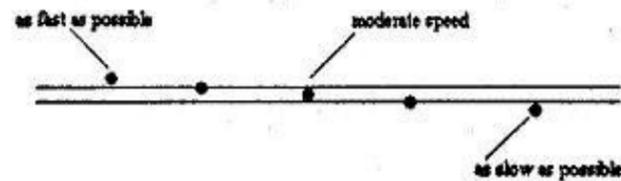
COMBINED:



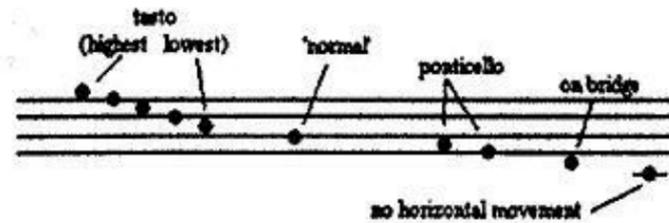
- +90° = 10
- +72° = 9
- +54° = 8
- +36° = 7
- +18° = 6
- Normal = 5
- 18° = 4
- 54° = 2
- 72° = 1
- 90° = 0



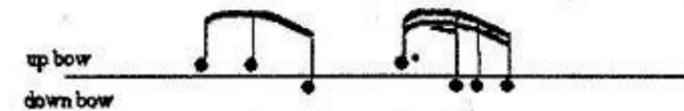
bow speed:



bow placement:



bow onset:



bow speed: in this overture bow speed is used in somewhat of an absolute manner - meaning that speed is varied between possible minima and maxima relative to angle, length and portion identified. Only five levels are used, although a performer will no doubt be able to sense other relative values. Importantly, the use of bow speed is often intended to decouple from tempo. This decoupling sets up extremely complex bio-neuro-physiological tasks. However, to be honest, the intention is not to suggest an idealized state, but that the decoupling will produce and/or factor into nonlinear and transient acoustic phenomena. Most normally, the performer will find it easiest to double or halve bow speed compared with tempo - however the idea is to scale speed along a continuum of consistent values in such a way that a minute incremental gain may produce widely separated results.

bow placement: bow placement refers to placement from over the fingerboard to normal, ponticello, directly on bridge - to no horizontal motion at all, but rather movement up and down the string.

bow onset: bow onset refers to the time when a bow begins production - neither temporal aspects of the starting transients or offset are identified - the idea is to develop the complexity of the relevant phase space under examination at any one time in order that acoustic output becomes enhanced and susceptible to bifurcations.

OTHER CONSIDERATIONS

tempo –

at times simultaneous multiple tempi are utilized. For this reason the bottom of each page indicates the placement of each second.

One technical result of the multiple tempi is that the measure count for each part may be slightly different – therefore rehearsal numbers have been utilized rather than measure numbers.

Instrumentation –

The work is score for seven high strings – this suggests that any combination of violin and viola may be used – asterisks indicate ossia segments – such as in string #7 at ca. 3'06" – the notes in parentheses may be transposed one 8ve lower if viola performs this part.

Contour lines –

Contour lines generally suggest pitch movement similar to the width of excursion along the vertical axis. When a wide vibrato is indicated this notation suggests an extreme movement that should attempt to follow the contour. Generally the performer should attempt to be faithful to the temporal characteristic and to the degree of pitch movement.

Bow angle and bow portion –

Often these are accompanied by an accent marking – this marking does not necessarily have to do with the dynamic of the fundamental frequency, but rather to a harsh articulation of the change to the notated state.

Inharmonicity –

Inharmonicity should figure prominently in the performance of this piece. During the section titled "Samudra-Manthana" inharmonic sonorities should dominate the acoustic output.

Slurs –

Rather than indicate phrasing through bow change – here in this overture slurs are used to indicate phrasing regardless of bowing behaviour. In many cases the phrasings are an indication of left-hand articulatory phrasing.

Bow onset –

Bow onset here is utilized with, primarily, with slower bow speeds and is paired with bow portion and angle as antagonist to habitual behaviour associated with well-defined rhythmic and pitch gesture. This notation, however, specifically addresses only the timing of onset and little else regarding its temporal behaviour – likewise, offset characteristics are not identified here. The intention here is not to needlessly complicate matters, but rather to utilize procedures that carry robust acoustic results.

In general –

Due to the special nature of the production characteristics, the performer is asked to produce a behaviour that attempts to produce a mf to f dynamic, however the response should in most cases be considerably softer than this. The intention to produce a mf to f should be faithfully maintained, however, as one result from the high bow pressure will be that dynamic contrasts of amplitude will exist between the transient/higher level attractor states and sudden bifurcations to limit cycle. The effect will be pitches popping out of an inharmonic texture at unexpected times.