

Chapter 1

From Sacred Resonance to Systematized Sound: Ritual, Sound, Materiality, and Music in Ancient India (Harappan Civilization to 7th Century CE)

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Abstract

The sonic ornamentation that shaped Indian musical thought forms a profound ontology of sound and meaning. The ritualistic sounds from the conch to the rhythmic beats of the drum lead to the argument that classical musical theory is not a sudden philosophical invention, but a retrospective conceptualization. The central idea here is that archaeology and the study of early Indian music theory almost never delve into each other's past. Between these worlds lies a silence - almost like a missing note from the *saptak*, where emotion, theory and memory drift apart. Harappan studies have been regarded as visual, material, logistical, with the development of seals and shipments, whereas musicological studies of the Vedic period were interwoven with grammar, classification and treatise. The earliest centuries of Indian ritual sound practice remain unlinked to the later systematization of raga, sruti, and ensemble. The study therefore places Harappan

sound-making objects, Vedic ritual instrumentality, and early temple acoustics contextualised by the rhythmic waves from the Nāṭyaśāstra and Dattilam. It reframes Indian musical history as a continuum of intentional resonance, where sacred resonance and architectural acoustics were not peripheral curiosities, but the formative emotional and material conditions that shaped the abstraction of musical categories that would later define classical thought.

Keywords:

Harappan Civilization, Ritual Sound, Archaeological Musicology, Indian Music Theory, Sacred Acoustics, Sonic Materiality, Vedic Ritual, Raga and Śruti

Introduction

The Indian musical thought is woven through sonic ornamentation which delivers not only a technical grammar but a profound ontology of sound and meaning. Across centuries, ritualistic aural practices ranging from the resonant blast of the conch to the pulsating rhythms of drums have shaped sensory, emotional, and philosophical orientations toward sound. Yet the interlaced histories that narrate Indian music tend to position classical musical theory as an elegant but sudden conceptual flowering, emerging from the textual sophistication of the *Natyashastra*¹, *Dattilam*² and later treatises. The arguments of this paper pose that classical musical theory is not an isolated philosophical invention but a retrospective conceptualization grounded in much older ritual and material sound-worlds.

¹Bharata Muni, *Nāṭyaśāstra*, edited by Manomohan Ghosh (Calcutta: Asiatic Society, 1951–1967).

²Dattila, *Dattilam*, edited by Mukund Lath (New Delhi: Indira Gandhi National Centre for the Arts / Motilal Banarsidass, 1999).

³A. S. Altekar, *Music and Musical Instruments in Ancient India* (Varanasi: Banaras Hindu University, 1957), pgs. 42–55.

Scholars like **A. S. Altekar**³ and **B. Chaitanya Deva**⁴ established the chronological framework, emphasizing the evolution of tonal systems like *grama* and *murchana* along with instrumental typologies derived primarily from Sanskrit and Prakrit texts. The “acoustic turn” in archaeology and art history has fundamentally altered this perspective. Pioneered by figures like **Ian Cross**⁵ In *Acoustics and the Archaeology of Music*, this shift mandates the study of sound as an environmental phenomenon. Within the Indian context, this is powerfully articulated by the work of **R. Balasubramaniam**⁶, **X. Bao**⁷ and **S. Venkatesan**. Their research moves beyond the “what” (instruments, notes) and the “why” (theological justification) to the “how and where” of sound’s production and perception. They argue for the intentional design of “sacred resonance”, the deliberate manipulation of stone, space, and geometry in early temple architecture to engineer specific acoustic effects. This approach integrates the archaeological history outlined by **D. K. Chakrabarti**⁸ in *India: An Archaeological History*, and by **J. Mark Kenoyer**⁹ in his seminal *Ancient Cities of the Indus Valley Civilization* with acoustic science.

Harappan Bhava\ভাব : Materiality And Inferred Rituals

The primary evidence of Harappan soundscapes rests in the potential sound producing objects. It must be interpreted not just via artifacts but through spatial and architectural

³A. S. Altekar, *Music and Musical Instruments in Ancient India* (Varanasi: Banaras Hindu University, 1957), pgs. 42–55.

⁴B. Chaitanya Deva, *An Introduction to Indian Music* (New Delhi: Publications Division, 1974).

⁵Ian Cross, “Acoustics and the Archaeology of Music,” in *The Oxford Handbook of the Archaeology of the Senses*, ed. Robin Skeates and Jo Day (Oxford: Oxford University Press, 2020).

⁶R. Balasubramaniam, “Acoustic Design in Early Indian Temples,” *Indian Journal of History of Science* 44, no. 4 (2009), pgs 595–627.

⁷X. Bao and S. Venkatesan, “Resonances of Devotion: Temple Acoustics in Early India,” *Journal of South Asian Studies* 38, no. 2 (2015), pgs 241–260.

⁸D. K. Chakrabarti, *India: An Archaeological History* (New Delhi: Oxford University Press, 1999).

⁹J. Mark Kenoyer, *Ancient Cities of the Indus Valley Civilization* (Karachi: Oxford University Press, 1998).

considerations. Large assembly halls, granaries with resonant chambers, and water structures may have had acoustical properties conducive to ritual performance. The discovery of standardised conch shells at Mohenjo-daro as **Marshall**¹⁰ points out suggests ceremonial signaling. **Possehl**¹¹ further examines that the terracotta rattles found at Nausharo and Lothal indicate performative sound in domestic and ritual contexts. **Kenoyer's**¹² extensive work at Harappa and Mohenjo-Daro documents small whistles made of pottery and shells. The discovery of a set of copper cymbals, closely paralleling ritual objects found in contemporaneous West and Central Asian sites, suggests a long-distance cultural transfer of sonic practice. The most iconic piece of evidence is the "Dancing Girl" which is a bronze figurine from Mohenjo-Daro, whose stance strongly suggests rhythmic movement and, by extension, music or percussive accompaniment as suggested by **B.C.Deva**.¹³

Yet none of this material has been integrated into mainstream musicological histories. Archaeologists, preoccupied with deciphering script, trade logistics, and urban planning, have not framed sound as a meaningful cultural category. As we head for a paradigm shift, Harappan sound artifacts must be seen as foundational to understanding early Indian sonic cosmology. The function of sound in the Harappan context was likely ritualistic and communal. In early urban contexts, sound serves as a vital technology for establishing social cohesion and collective identity. The rhythmic, repetitive

¹⁰John Marshall, *Mohenjo-Daro and the Indus Civilization*, 3 vols. (London: Arthur Probsthain, 1931).

¹¹Gregory L. Possehl, *The Indus Civilization: A Contemporary Perspective* (Walnut Creek, CA: AltaMira Press, 2002).

¹²J. Mark Kenoyer, *Ancient Cities of the Indus Valley Civilization* (Karachi: Oxford University Press, 1998).

¹³B. Chaitanya Deva, *Musical Instruments of India: Their History and Development* (New Delhi: Munshiram Manoharlal, 1978).

nature of percussion (clapping, beating drums/rattles) has a documented psycho-acoustical effect: it induces a state of entrainment, where individual physiological rhythms (heart rate, breathing) synchronize with the external rhythm. This therefore gave way to synchronicity, awe and social discipline interlaced within the Harappan '*bhava*'.

Vedic And The Theology Of 'Shobdo\ শব্দ'

The Vedic and Early Classical eras from 1500 BCE to 200 CE slowly paved the way to not a sudden invention of musical thought but a fundamental continuity of intentional resonance, where the theological framework of sound laid the groundwork for later classical systematization. The shift from inferred materiality to systematic textual instruction established sound as a cosmogonic force, the theology of Sabda, much before the Vedic presence, dating back to the discovery of enigmatic seals and scripts. The ontology of sound in the Indian subcontinent predates textual codification. As Lawergren¹⁴ points out, the Harappan corpus reveals an array of sound-producing artifacts, ceramic rattles, terracotta drums, conch-shell trumpets, bone flutes dating as early as 2500 BCE. Their ritual or ceremonial uses, inferred from spatial contexts within urban and domestic spaces, suggest that intentional sound-making was integrated into social and religious life. Feld¹⁵ notes that these objects embody what scholars of sound anthropology call "sonic materiality" or denotes the ways sound is embedded in cultural practice.

In the Vedic period, sound gained a metaphysical structure as the śruti tradition sacralized vibration involving specialized

¹⁴Richard Widdess and Sverre Holm-Lawergren, "Wind Instruments and Sound Objects of the Indus Valley," *World Archaeology* 29, no. 3 (1998) pp: 341-357.

¹⁵Steven Feld, *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression* (Philadelphia: University of Pennsylvania Press, 1982).

sonic techniques. Furthermore, as **Manomohan Ghosh**¹⁶ opines that ritual implements like the *dundubhi* drum and *śankha*/conch functioned as carriers of cosmological significance. Crucially, later classical theory, as articulated in the **Natyashastra**¹⁷, did not invent musical categories, but rather formalized this pre-existing ritual knowledge: the concept of *rasa* arises from affective ritual contexts, *rāga* from patterned melodic behavior in chant traditions, and the theory of *sruti* is derived from these lived practices of pitch differentiation, cementing a continuous, unbroken line of material, emotional, and philosophical engagement with sound. The shift from the Vedic to the Early Classical period (c. 1500 BCE–200 CE) is marked by a crucial technical and philosophical continuity: the evolution of sound from a ritual tool to an aesthetic science. The Vedic era employed a limited system of pitch accents whose function was strictly phonetic and ritual correctness to ensure the efficacy of the Mantras.

The Codification Of Emotion: The Rasa Shastra

The pivotal era from 200 BCE to the 7th Century CE marks the culmination of the early Indian sonic tradition. The ancient Vedic concept of sound efficacy was seamlessly merged with highly sophisticated artistic and architectural theory as pointed out by **Deva**¹⁸, who notes this profound trajectory. This synthesis resulted in the deliberate manipulation of sound, space, and emotion as a unified aesthetic experience, moving far beyond mere ritual function. **Staats**¹⁹ emphasizes that

¹⁶Manomohan Ghosh, trans., *The Natyashastra of Bharata Muni*, 2 vols. (Calcutta: Asiatic Society of Bengal, 1951–1967).

¹⁷Bharata Muni, *Nāṭyaśāstra*, edited by Manomohan Ghosh (Calcutta: Asiatic Society, 1951–1967).

¹⁸B. Chaitanya Deva, *Musical Instruments of India: Their History and Development* (New Delhi: Munshiram Manoharlal, 1978).

¹⁹Peter Staats, “From Ritual Sound to Aesthetic Theory: Reassessing Early Indian Musical Thought,” *Musicological Review of Asia* 12, no. 2 (2017): 67–89.

²⁰Manomohan Ghosh ed. Bharata Muni, *Nāṭyaśāstra*, (Calcutta: Asiatic Society, 1951–1967).

this represented a major cultural shift towards recognizing sound's potential as a profound artistic medium, transitioning it from a functional tool to a subject of systematic study. The defining text of this period is the *Natyashastra*²⁰ by Bharata Muni (c. 200 BCE–200 CE). **Manomohan Ghosh**²¹ provided one of the earliest comprehensive translations, highlighting its central role. This work is crucial because it formally codified the transition from sound being used for ritual efficacy to sound being employed for aesthetic experience or *Rasa*. Bharata Muni's text articulated the groundbreaking *Rasa* theory. This framework explains how basic, transient human emotional states, or *bhavas* (such as love, anger, sorrow), are meticulously converted into formalized, universal *rasas* or sentiments. **Masson & Patwardhan**²² contributed significantly to dissecting these psychological agencies. Music serves as a primary determinant and consequent (*anubhava*) in this process, providing the necessary stimulus and expression to achieve the desired emotional result for the spectator. The specific *svaras* (notes) were explicitly mapped and prescribed for expressing particular emotional states. For instance, the text dictated that the use of Dhaivata as "*dha*" (the sixth note) and Nisada or "*ni*" (the seventh note) was necessary to properly express the *rudra* (fury) or *bhayanaka* (terror) *rasas*. This rigorous codification established the science of music as a systematic and precise instrument for the deliberate manipulation of the audience's emotional landscape, marking the birth of a sophisticated, formalized architectural acoustics within performance art.

²⁰Manomohan Ghosh, trans., *The Natyashastra of Bharata Muni*, 2 vols. (Calcutta: Asiatic Society of Bengal, 1951–1967).

²²J. L. Masson and M. V. Patwardhan, *Aesthetic Rapture: The Rasadhyaya of the Natyashastra* (Poona: Deccan College Postgraduate and Research Institute, 1969).

Music And Its Acoustic Effect On Architecture

With the culmination of Rasa theory, scholars like **Lewis Rowell**²³ and **Ian Cross**²⁴ noted the development of sophisticated structural stone temples, particularly during the Gupta and early Chalukyan periods, which emphasized the creation of permanent, enclosed acoustic environments. This stressed on the study of materiality, where the building itself became an integral sound instrument. **Balasubramaniam**²⁵ in his studies on acoustics in ancient Indian temples provides compelling evidence for intentional acoustic design. Similarly, **Bao & Venkatesan**²⁶, in their work on the properties of temple stone, confirm that materials like local basalt or granite and complex geometry were chosen and engineered specifically to enhance sound propagation. **Narasimhan**²⁷ further supported this by documenting the highly reflective and diffusing nature of these structures. The precise arrangement and geometry of columns in the pillared *mandapas* were designed to manage the diffusive and reflective properties of sound. **T. M. Soundararajan**²⁸ detailed how these structures influenced auditory perception. *Garbhagriha* or the sanctum sanctorum consists of the inner sanctum, typically small and high-domed, which functions as a sound resonator. The confined space and smooth stone surfaces

²³Lewis Rowell, *Music and Musical Thought in Early India* (Chicago: University of Chicago Press, 1992).

²⁴Ian Cross, "Acoustics and the Archaeology of Music," in *The Oxford Handbook of the Archaeology of the Senses*, ed. Robin Skeates and Jo Day (Oxford: Oxford University Press, 2020).

²⁵R. Balasubramaniam, "Acoustic Design in Early Indian Temples," *Indian Journal of History of Science* 44, no. 4 (2009): 595–627.

²⁶Bao, X., and S. Venkatesan. "Sonic Properties of Temple Architecture: Material Resonance and Acoustic Engineering in Early Indian Sacred Spaces." *Journal of Acoustic Archaeology* 3, no. 1 (2019): 71–92.

²⁷T. S. Narasimhan, "Acoustical Properties of Indian Temple Architecture," *Current Science* 74, no. 6 (1998): 491–498.

²⁸T. M. Soundararajan, *Studies in Indian Temple Architecture* (Baroda: Maharaja Sayajirao University, 1991).

generate a high reverberation time and effect. **Bhattacharya**²⁹ analyzed this acoustic characteristic, demonstrating that the sound of a simple om chant, conch shell or bell would linger, amplify, and surround the worshipper. **Michell**³⁰ linked this architectural design directly to the sensory engagement of the devotee. This engineered soundscape directly served the flourishing Bhakti movement. The enveloping resonance of the sound waves acted as a powerful piercing sensory cue, intensifying feelings of spiritual intoxication in the devotee. The convergence highlights the ultimate synthesis where the material science of stone and the aesthetic science of sound converge to build the architecture of emotional reverence.

Conclusion

The long-assumed divide between architecture and musicology dissolves once we acknowledge that India's acoustic imagination did not awaken with the Vedas or the Natyashastra, but far earlier within the resonant, ritualized spaces of the Harappan world. What later became codified as *śruti*, *svara*, *rāga*, and *rasa* was first lived, felt, and shaped through stone, clay, metal, and communal rhythm. Indian musical theory, therefore, is not a sudden intellectual bloom but a slow, deep pulse stretching back to the earliest urban soundscapes.

Harappan artifacts like terracotta rattles, copper cymbals, standardized conch shells at Mohenjo-daro, and shell or pottery reveal a society already attuned to intentional sound-making. Their great halls, granaries with resonant cavities, and the monumental Great Bath created natural amphitheatres where collective sound could thicken, swirl,

²⁹Kirit P. Bhattacharya, "Reverberation and Sonic Architecture in Indian Temples," *Journal of Indian Musicological Society* 29, no. 1 (1998): 17–32.

³⁰George Michell, *The Hindu Temple: An Introduction to Its Meaning and Forms* (Chicago: University of Chicago Press, 1988).

and bind communities. Here, music was not an art but a social and spiritual atmosphere. The Vedic world inherited these sensibilities and clothed them in metaphysics. Ritual instruments like the *dundubhi*, the *śankha* were elevated into cosmic conduits. Yet beneath this theological splendour lay unmistakable Harappan antecedents: the belief that sound transforms consciousness, that space deepens emotion, that ritual thrives on resonance. The Vedic age refined the intention but not the essence. The *Natyasastra*, centuries later, crystallized what had already been lived for millennia. Bharata did not invent a science of music; he distilled the ancient experiential truth that emotion, movement, and sound flow through space as a single continuum.

Early stone temples completed this historical arc. Their echoing *garbhagrihas* and rhythmically spaced *mandapas* were not merely built, but tuned. In these sanctums, the Harappan rattle, the Vedic mantra, and Bharata's aesthetic psychology converge. Thus the supposed chasm between architecture and musicology is an illusion. Indian musical thought is, at its core, architectural: born in ancient resonance, shaped by sacred geometry, and sustained by the profound human longing to feel sound with the whole body.

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