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Natyashastra and Metaverse: A Review on Natyasastra and Virtual Metatheatre by David Hughes

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Abstract

This review research paper explores the study between the ancient Indian drama from The *Natyashastra* and contemporary ongoing virtual theatre practices, particularly through the lens of the farcical play *Bhagavadajjukam* serving as the medium. The paper serves as a critical analysis of researcher David Hughes, where he has applied a practice-based methodology in his research. Hughes created a virtual environment of the play and then conducted workshops with the participants. Later, he codified a thematic analysis of participants feedback. The liminal, emotional, and metatheatrical principles of the *Natyashastra* can be effectively adapted into virtual environments. By incorporating rituals, *rasa* theory, and narrative structure, the VR setting successfully evoked *Hasya rasa* and fostered a sense of *communitas* among participants. The “peacock moment” served as a key breakthrough, illustrating how classical humour can be meaningfully re-experienced in digital space, enhancing emotional engagement and embodied performance. This review paper highlights the gaps that were not identified or mentioned in Hughes’s paper. Hughes is only focused on one play and one *rasa*. This doesn’t give an understanding of the impact of other unexplored *Rasas* on people and how they consume them in a virtual environment. Different *rasas* leaves different kinds of impacts on people, which is strongly associated with the narrative play or drama in this context. The paper also serves as a scope for future research where researchers could focus on different plays from different regions, different timelines, and different languages, and then study the impact of understanding by the audience. A comparative study between culturally aware and unaware participants – such as Indians and Westerners,

or those familiar and unfamiliar with *Natyashastra* – could reveal how background influences engagement and interpretation in virtual performances.

Keywords: *Natyashastra*, Virtual Theatres, *Rasa* Theory, Metaverse, Virtual Metatheatre, Liminality

Introduction

The *Natyashastra* is an ancient treatise on dramaturgy that sheds insight on Indian aesthetics, poetics, and performing arts. It has been called the science of theatre (Das 137). Bharata Muni’s *Natyashastra* plays an extremely important role in Indian performing arts. It serves as a precise guide to drama, music and dance, and it shows an entire system for storytelling and performance. While modern studies are exploring how ancient dramatic concepts translate to virtual theatre, early research naturally has its own limitations. Hughes successfully demonstrates the *Natyashastra*’s relevance through the spoken word, focusing on drama and *rasa* as his entry point into the text. This review follows the same scope – it does not cover music or dance either, not because those dimensions are unimportant, but because doing justice to all three pillars of the *Natyashastra* in a single study, physical or virtual, is simply not yet possible. What Hughes begins with drama, and what this review examines through that lens, is best understood as the first layer of a much larger project. In addition, the paper also talks about applying ancient tools to virtual theatre. Hughes writes as a British researcher engaging with an Indian classical tradition, and he himself acknowledges that this shapes his reading of the text. This review is conscious of the same limitation – it draws on Hughes’s findings as its primary evidence, which means the Western interpretive frame is present here too, once removed. Rather than treating this as a flaw unique to Hughes, this paper recognises it as a shared constraint and calls for future research that actively centres Indian practitioners and scholars,

particularly those trained in classical performance traditions, as both researchers and participants.

This review paper highlights several other gaps like Hughes's study is limited by its narrow focus on a single play and a single *Rasa* (*Hasya* – humour), which restricts the scope of emotional expressions explored. This approach overlooks the broader spectrum of *rasas* stated in the *Natyashastra*, such as compassion, love, bravery, and anger. In the context of virtual theatre, where emotional engagement can be diverse, this limitation hinders a more comprehensive understanding of the audience experience. While his findings offer valuable insights, a more expansive analysis involving multiple plays and *Rasas* could yield a deeper and more comprehensive understanding of emotional dynamics in performances.

The *Rasa* theory holds a prominent position in Indian poetics, inspiring extensive scholarly work and literature across more than twenty centuries, from Bharat Muni in the 2nd century BCE to contemporary scholars like Sheldon Pollock in the 21st century CE. *Rasa* refers to the emotional experience evoked by a performance. While previous studies have examined emotion evocation in virtual environments, this paper posits that *rasa* can play a crucial role in building intimate emotional connections for participants in virtual theatre. Understanding how traditional methods evoke emotions could lead to more meaningful and immersive experiences in digital spaces.

The paper suggests that future research should validate the long-term impact of virtual reality experiences on participants' understanding of and engagement with the *Natyashastra*. By combining insights from the text with modern technological advancements, this review seeks to merge ancient tradition with modern innovation, calling for a comprehensive exploration of virtual theatre that includes music, dance, Indian philosophy, and a deeper investigation of emotional

connections to create engaging and culturally grounded virtual performances.

Virtual Theatre

Virtual theatre merges traditional performance with modern technology, creating immersive experiences that engage audiences in new ways. The Virtual Theatre distinguishes itself through its innovative omnidirectional treadmill, which features rollers centered around a focal point. This design enables users to move naturally in any direction, enhancing immersion in virtual environments. Additionally, the integration of a data glove allows users to interact actively with virtual events using hand movements, creating a more engaging and intuitive experience (Hoffmann 1). Also, with the continuous advancement of modern technology, virtual reality tools in contemporary theatre are also rapidly developing. This evolution may lead to a broader integration of digital technologies like Motion Capture, potentially resulting in a gradual shift from live performances to the use of virtual stage representations (Iudova-Romanova and Hübel 4). Platforms like VRChat which is a virtual reality (VR) platform that enables users to create avatars, explore virtual environments, and interact in real-time. It supports user-generated content, allowing for custom worlds and interactive experiences. Researchers study its impact on digital identity, social behavior, and immersive communication in virtual spaces that allow users to design and explore virtual worlds.

Natyashastra

Natyashastra, written by Bharat Muni, is a Sanskrit text which serves as a principal document for various performing arts like drama, music and dance. The text consists of 6000 shlokas divided into over 36 chapters. The document covers topics such as dramatic composition, structure of play and stage construction, acting genres, body motions, make-up and costumes, the function and aims of an

art director, musical scales, musical instruments, and the incorporation of music with art performance. (Sen, par. 4, line 3). As a foundational treatise, the *Natyashastra* dissects dramatic artistry through concepts like *Natya's* performative essence, *Vithi's* structural frameworks, *Bhav's* emotional layers, and *Rasa's* transformative power, alongside subtler elements such as *Vyabhichari Bhav's* fleeting moods and *Shantih's* spiritual serenity (Bhosale 1). The digital era is characterized by the rapid emergence and evolution of technologies, alongside adaptive methods for transmitting information from one source to another. The period also emphasizes the widespread acquisition and dissemination of knowledge, enabling individuals to access information at their convenience and according to their preferences. In this era, everything is easily accessible and new developments occur daily. *Natyashastra*, which has an ancient foundation and roots, still stays relevant as it covers various aspects of theories like communication, storytelling, and expression that goes peacefully with modern digital mediums. The text also holds vital aspects of developing an emotional bond between performer or sender of the message and the audience (Gautam 72).

Rasa Theory

The roots of *Rasa* theory originated from the *Natyashastra* written by Bharat Muni. *Natyashastra* consists of 36 chapters, the 6 chapter discusses about *Rasa* theory. The word *Ras* or *Rasa* comes from the ancient *Vedas* and *Upanishads*. It has a different meaning in different *Vedas* and theories. However, in a broader context *rasa* means “taste”, “flavour” or essence. The concept of *rasa* is generally used in Indian art forms to evoke emotions “*Bhava*” and immerse the audience/spectator or *sahridaya* so that they don't get detached from the message or information, which could be in the form of drama, music or dance (Khanam 140). According to Muni, *Rasa* is nothing but the synthesis of *Vibhav* (determinants), *Anubhav* (consequences), and *Vyabhichari Bhavas*

(Transient emotional states), coming together to result in the creation of *Rasa* (aesthetic experience). Muni identifies eight *Rasas* in *Natyashastra* which are mainly *Shringar* (the Erotic), *Hasya* (the Comic), *Veer* (the Heroic), *Adbhut* (the Marvelous), *Rudra* (the Furious), *Karuna* (the Pathetic), *Bibhatsa* (the Odious), and *Bhayanak* (the Terrible). Later, the ninth *rasa* “*Shantih*” (Peace) was added by Abhinav Gupta (Bhosale 4-7).

Liminality

Liminality is a point between the two transition states. It is also called the threshold state or the in-between state. The concept was introduced by Arnold van Gennep and later expanded by Victor Turner (Chakraborty 145). Turner extended van Gennep's model by introducing the concept of 'communitas', the sense of collective unity, equality, and social bonding that emerges among individuals who share a liminal experience. Unlike everyday social structures governed by hierarchy and role, *communitas* describes a temporary state of togetherness in which ordinary distinctions dissolve and participants feel a profound sense of shared humanity (Turner 96-7). In the context of Hughes's workshops, *communitas* emerged in precisely this way, participants who had never met each other found themselves sharing rituals, laughing together, and briefly inhabiting the same emotional space inside a virtual cave. It is this quality of shared, boundary-dissolving experience that the term refers to throughout this review. When it comes to liminality and virtual reality another research conducted by Dr. Ralph Mosley explores how VR can help people to transition into different mental states like meditation and deep relaxation inspired by *Yoga Nidra* in a smooth and meaningful way. Narrative engages the human experience at a fundamental level, with effects on biological and psychological mechanisms (Mosley 9-10). According to Nathan Bray, who conducted a study on liminality and its effect on the users, where he designed three environments (a deserted train

station, a foggy forest, and an empty supermarket) with the help of Unity, he describes liminal spaces as the places where the user is not fully engaged or not fully disconnected. He also stated that the absence of people or we can say the community, creates a sense of unease in the minds of people or spectators (Bray 12).

Metatheatre

Metatheatre, in simple language, refers to theatre within theatre. Metatheatre influences audience perception by creating a self-reflexive experience that prompts viewers to question the nature of reality and performance. Techniques such as breaking the fourth wall invite audiences to engage directly with the play, fostering a critical awareness of the narrative (Shrivastawa 2-3). With the introduction of virtual reality, the concept of metatheatre is further advanced. VR enhances audience engagement through presence and choice, allowing for deeper participation (Biggin 45).

Literature Review

David Hughes paper talks about the similarities between the *Natyaveda*, an ancient spiritual performance venue or setting, and the contemporary metaverse, identifying both as liminal or transitional spaces that allow communities to explore themes of conflict and resolution. This analysis underscores the enduring nature of performance environments throughout history and technological advancements. The workshops conducted provided valuable insights into the rasa theory of the *Natyashastra*, which emphasizes structured emotional expression that nurtures the liminal self, thereby creating experiences like virtual anchors. This investigation into emotional involvement in both physical and digital realms enhances our understanding of how ancient theatrical principles can be reinterpreted for modern virtual theatre. Along with this, there are many other research papers that discuss *Natyashastra* and emerging media like Virtual reality, augmented reality and other immersive media platforms. One

such paper is “Relevance of Bharat Muni’s *Natyashastra* in Digital Era” by Kedar Nath Gautam from Bodhi: An Interdisciplinary journal in which the author discuss the study highlights the applicability of Bharat Muni’s *Natyashastra* principles, such as emotional essence (*Rasa*) and the art of expression (*Abhinaya*), to modern digital communication and content creation, suggesting that these ancient concepts can enhance the effectiveness of digital presentations and storytelling. By drawing parallels between *Natyashastra* and contemporary digital practices, the research underscores the text’s enduring significance in enriching modern communication and artistic practices, ultimately fostering deeper connections with audiences in the digital landscape (Gautam 61-2). The other paper from the same journal talks about Shaping User Experience in Virtual Reality with special reference to *Natyashastra*. where the author of the paper “Kriti Gujar” highlights the value of integrating cultural heritage and traditional storytelling methods, such as those in the *Natyashastra*, into VR design to increase the emotional engagement, create culturally resonant experiences, and enhance overall user interaction within virtual environments (Yadav 112). Further, talking about virtual reality and theatre the article presented at Frontiers in Art Research journal on Digital Media Technology on the Theatre Stage by Jinming Zhang talks about how the integration of new and emerging media technologies such as virtual reality, projection mapping, advanced screen displays, and artificial intelligence in theatre stage design has the potential to redefine traditional paradigms and enhance audience engagement through immersive and interactive experiences. However, the study also criticises that while these technologies can change the theatrical experience completely for the audience, excessive reliance on them may detract from the core artistic narrative and meaning which an artist wishes to convey. There is also a major gap in their research where it is hard to draw the connection between new technologies and creating

solid content with a narrative therefore, designers can use the theories and principles from *Natyashastra* to build an impactful and powerful narrative that would hold the audience/spectators or the listeners attention without needing to use powerful technology. The use of technologies like augmented reality, projection mapping, 3D display can act as a cherry on a cake and help to uplift the play (Zhang 18).

Methodology

In the following paper, David Hughes tried to connect an old play “*Bhagavadujjakam*” The play was written back in seventh century, which was traditionally attributed to Mahendravikramavarman. This renowned play is popularly known for its farce comedy (*Hasya rasa*), Philosophical themes, and metatheoretical commentary. The choice of a *Prahasana*, a comedic, farcical genre, might seem at odds with the spiritual weight typically associated with liminality. But this tension dissolves when one considers what laughter does to a group. Turner observed that play, comedy, and ritual occupy similar territory: all three temporarily suspend the rules that govern ordinary social life. When participants laughed together at the peacock moment, they were not having a shallow experience they were, briefly, equally foolish, equally surprised, equally human. The hierarchies of the everyday fell away. In this sense, *Hasya rasa* and liminality are not opposites. They are two different paths to the same threshold. The plot revolves around a strict ascetic (*bhagavad*) who believes in renunciation and a courtesan (*ajjuka*) who enjoys worldly pleasures. A series of magical and humorous events, including body swapping, mistaken identities, and a philosophical debate between worldly pleasures and spiritual life. Hughes, tried to develop and measure how people feel when they experience a scene from the play in virtual reality. For the research purpose, the old cave mentioned in “*Bhagavadujjakam*” was created in virtual reality with the help of a platform called

as VRchat. Here, Hughes followed a diverse approach to effectively bridge ancient dramaturgical practices with contemporary virtual theatre, providing valuable insights into the application of the *Natyashastra* in modern contexts. The original play revolves around a humorous and philosophical episode involving the soul exchange between a saint and a courtesan. When the courtesan Vasanti dies from a snakebite while waiting for her lover, the saint uses his yogic powers to revive her by entering her body. Due to a cosmic error, her soul enters the saint’s body, leading to a comic series of identity confusion and behavioural shifts. Ultimately, the souls are restored to their rightful bodies, exploring themes of body, soul, and illusion. This created satire, and *Hasya rasa* had emerged within the audience. Hughes for this paper took tiger and peacock as symbols to represent the part in the original play. In *Bhagavadajjukam*, a particularly humorous moment arises when a character, overcome with fear, mistakes the rustling of a peacock in the bushes for the presence of a tiger. This misperception, both comical and exaggerated, encapsulates the essence of *Hasya rasa* (the aesthetic flavor of laughter). Referred to in the research as the “peacock moment,” this scene proved to be a turning point during the VR workshops. Within the immersive virtual environment, this episode vividly demonstrated how classical humour could be re-experienced and felt anew, it is worth pausing here on what this shift actually means. In a traditional staging of *Bhagavadajjukam*, the peacock and tiger exist only in language, the actor describes them, and the audience's imagination does the rest. The humour depends on that gap between what is said and what is seen. In a VR environment, however, the peacock becomes a rendered asset: visible, tangible, fully present. This is not a small technical detail. It represents a fundamental change in how the comedy works. Classical *Hasya rasa* relies on the audience co-creating the absurdity in their minds; digital visualisation hands them the absurdity ready-made. Hughes’s finding that participants still experienced

the humour is genuinely interesting, but the paper does not interrogate whether what they felt was the same *rasa*, or something new that VR makes possible. This distinction sits at the heart of metatheatrical theory, and it remains an open question worth future study. Overall, Hughes followed a qualitative practice-based approach which also combined literary analysis with digital-making practices. This method allowed for a deeper understanding of Muni's text and its application in virtual theatre settings. Multiple workshop performances were conducted in both physical and virtual settings. These workshops served as a methodological tool to examine the thematic and conceptual frameworks of the *Natyashastra*, fostering active participation across both mediums. Further to investigate the influence of spatial structure on performance, a triangular layout was created in a physical studio and simultaneously realized in a virtual cave theatre. This mirrored configuration of creating environments both in physical and VR spaces supported a comparative study of spatial dynamics in physical and digital environments. The methodology also used various digital technologies, like unity game engine and social platforms like VRChat to create immersive environments. After workshops, group discussions were held with the participants to understand their thoughts and experiences. These conversations focused on how they felt while engaging with the experience created on. To analyse this feedback, an inductive thematic analysis was used. Inductive thematic analysis helps researchers to look for patterns from the feedback given by the participants instead of moving forward with a hypothesis or perception in their mind. From this, key themes and insights were identified, such as how immersive the VR space felt, how well the traditional concepts were understood, and what challenges participants faced. This helped give a deeper understanding of how people interacted with both the performance material and the digital environment. From the group discussion, the researcher emerged with several themes from the feedback given by the participants. Themes like, spirituality and liminality

was noted where the spectators felt strong sense of spiritual force with the environment and the interactions like offering mangoes to the gods statues. This contributed to a conducive mindset for engagement and immersion, leading to moments of transcendence or liminal where users or spectators were in the threshold or the boundary they were teleported from normal physical space to the virtual environment of a cave where there were statues of gods and goddesses and they were performing rituals. Similarly, VR also played the role of catalyst to amplify the experience. Liminality also influenced emotional engagement through the *rasa* theory, which codifies emotions in performance. Participants reported that the liminal state enabled them to access and express emotions more freely, creating moments of connection that were both personal and communal. This emotional exploration was particularly pronounced in the virtual environment, where participants felt liberated to embody different emotional states. To develop this review paper, the researcher has adopted a systematic methodology to critically evaluate and synthesize relevant literature. The following approaches were employed:

1. Textual Analysis: Drawing inspiration from Hughes's thematic analysis in the current research, the researchers applied textual analysis to examine the themes within the selected research paper. This method enabled the identification of similarities and differences between the current study and existing literature, contributing to bridging identified gaps.
2. Comparative Analysis: The researchers systematically analysed a range of relevant research papers, focusing on the methodologies and approaches employed by different scholars. By comparing these studies, the researchers assessed the gaps and limitations in the current research, thereby situating the present study within the broader academic discourse.

In the end, Hughes's research paper concluded that the project highlights the similarities between the *Natyashastra*, and the modern metaverse, suggesting that both serve as liminal spaces where communities (audience) can engage with conflict and resolution, thus fostering a deeper understanding of cultural and emotional dynamics in performance. The exploration of the *Natyashastra*'s rasa theory in a virtual context demonstrates how codified emotional performances can create virtual anchors, allowing participants to experience and navigate their liminal selves, thereby enriching the understanding of metatheatrical in both ancient and contemporary settings.

Critical Analysis

After reviewing Hughes's research thoroughly, the researchers have seen certain strengths and weaknesses or limitations. In his paper "The *Natyashastra* and Virtual Metatheatrical" it can be clearly seen that Hughes has applied strong practised-based methodology with the participants in order to compare and analyse the outcomes of his research. The paper encompasses strengths like which has been derived from his results section are,

Innovative solution: Hughes thoughtfully identifies the parallels between traditional Indian dramaturgy from *Natyashastra* and modern VR platforms like VR Chat. His use of *Bhagavadajjukam* and concepts from *Natyashastra* in a virtual setting shows creative experimentation.

Practice-Based Methodology: Hughes conducted lot of workshops where he triggered participants with VR environment of the play and make them do the interactions like offering fruits to statues the deities. This approach also helped to note the real time feedback from participants which enriched research findings and provided practical evidence.

Participant Insights: Post-workshop, the thematic analysis of participant experiences provided a nuanced understanding of how individuals interact with the virtual space and the emotional

connections they form. This analysis highlights the varying degrees of engagement and the unique moments of rasa experienced by participants, highlighting the potential of virtual theatre.

Focus on Rasa theory: Hughes's paper also draws upon the Rasa theory from, *Natyashastra* to explore how structured emotional expression can deepen audience engagement. By connecting ancient understandings of emotions with contemporary digital environments like virtual reality, it highlights how traditional performance principles can still inform and enhance emotional resonance in virtual experiences today.

Following are the strengths of Hughes's paper where he followed the methodology that connected ancient Indian artform to modern context. Hughes points out three limitations of his study. He explains that the research focused only on the drama part of the *Natyashastra*, while critical areas like dance and music were not explored. A notable limitation—though expected in an early-stage technical study—is the exclusive focus on drama. Because the research is laying the groundwork for virtual metatheatrical, it understandably leaves out the other core pillars of the *Natyashastra*: music and dance. While this does not diminish Hughes's findings regarding narrative and *rasa*, it means we are currently only seeing a fraction of what the ancient text has to offer. Fully realizing the *Natyashastra* in VR will eventually require integrating both auditory and kinetic performance elements. He also mentions that, as a Westerner, his background may have influenced how the text was understood by a Britisher compared to one who is from that origin. Lastly, the number of participants in the study was quite small, which means the findings may not apply to a wider group. Further after reviewing other research papers and analysing the current research paper from the broader perspective other set of limitations identified by the researchers in this review paper are.

Narrow Focus on One Play: Hughes concentrated solely on one play, which limits the scope of his findings. By analyzing just one performance through workshops and thematic analysis, he may not capture the broader range of emotional expressions and experiences that can occur in different plays. This narrow focus can lead to a lack of comprehensive understanding of how *rasa* operates across various performances, subjects and themes.

Single Rasa Exploration: He only explored the *Hasya* rasa, which is the emotion of humor. While this is an important aspect of performance, it does not encompass the full spectrum of emotions outlined in the *Rasa* theory of *Natyashastra* that describes multiple *Rasas* like *Karuna* (Compassion), *Shringar* (Love), *Veera* (Brave) or *Rudra* (Anger), each representing different emotional experiences. By limiting his analysis to just one, Hughes misses the opportunity to explore how other emotions, might also play a role in virtual performances.

Hughes focus on one play, and one *rasa* offers insights but limits the exploration of the full range of emotions in performances, especially in virtual theatre. Expanding the analysis to include more plays and a variety of *Rasas* could lead to richer findings and a more comprehensive understanding of emotional engagement in performance.

Future Scope

The paper “*Natyashastra* and Virtual Metatheatre” written by David Hughes addresses most of the questions through the strong practice-based methodology implemented by him, but it also leaves a lot of scope for future research to study. There is a lack of exploration regarding the long-term impact of virtual reality experiences on participants understanding and engagement with the *Natyashastra*, particularly how these experiences might influence their perceptions of cultural heritage and performance in both virtual and

physical spaces. Also exploring different *Rasas* in a virtual environment by taking examples of two or more plays from ancient Indian literature. The comparative study could also be done by taking one Indian play and one play from the West and creating environments or the setting and interaction of both plays can be created in VR. A comparative study could also be conducted between individuals with prior knowledge of the *Natyashastra* and those who are entirely new to it, as well as between participants from Indian cultural backgrounds and those from Western contexts. Such a study could reveal how cultural familiarity and theoretical understanding influence emotional engagement, interpretation, and the overall immersive experience within virtual performances rooted in traditional Indian dramaturgy. Later, similarly, how Hughes’s conducted thematic analysis similarly thematic analysis can be performed by taking both the plays into the picture and taking feedback from the audience.

Conclusion and Discussion

David Hughes exploration of *Natyashastra* through the lens of virtual metatheatre presents an innovative intersection of ancient dramaturgical theory and contemporary digital practice. By focusing on concepts such as *rasa*, liminality, and metatheatre, the research effectively demonstrates the potential of culturally rooted storytelling in enhancing immersive virtual experiences. However, from a broader critical perspective, the study’s scope remains limited in certain areas. The exclusive focus on a single play (*Bhagavadajjukam*) and the isolated exploration of only one *rasa* *Hasya* or humour restrict the depth and diversity of emotional insights that could have been explored. The *Natyashastra* outlines a rich spectrum of emotional states, and incorporating other *Rasas* – such as *Karuna*, *Shringar*, or *Veera* – might have offered a more nuanced understanding of emotional engagement in virtual environments.

Moreover, while the project introduces a novel methodology, it does not explicitly address the practical and cultural challenges of translating ancient dramaturgical elements into virtual spaces. This omission limits our understanding of the adaptability and effectiveness of classical Indian performance principles in contemporary digital theatre.

Looking ahead, future research could expand this foundation by incorporating multiple plays and a wider range of *Rasas*, engaging performers trained in Indian classical traditions, and critically examining technical and cultural integration challenges. Such an approach would offer deeper insights into the evolving relationship between traditional performance wisdom and emerging immersive technologies.

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