

Technology-mediated haptic interactions in Dhrupad vocal music pedagogy: what next?

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ABSTRACT

Acknowledging the importance of embodiment has prompted a recent shift in music teaching methods, emphasizing a holistic, multi-sensory approach involving the entire body. However, the education of oral music genres, traditionally reliant on live demonstration and imitation, is undergoing a contrasting transformation by rapidly embracing online means. This study explores challenges in the embodied aspects of synchronous distance Hindustani music pedagogy, with a special focus on tactility. Taking an ethnomusicological perspective, the paper presents an analysis of interviews with Hindustani music practitioners, which is guided by the principles of the 4E Cognition framework.

The findings suggest that, while the adaptation to technology aims to broaden access to music content, it does so at the expense of limiting opportunities for multi-modal interaction among participants. The results highlight constraints in conveying non-verbal, embodied, and multi-sensory cues, as well as disruptions in visual and acoustic, but most importantly tactile elements, that contribute to an otherwise shared spatial and physical context. These challenges hinder meaningful interaction and immersive experiences, crucial elements in music education. The study expresses concerns about the appropriateness of conventional videoconferencing platforms and offers valuable insights for developing alternative technologies, better suited to meet the embodied demands of these pedagogical practices.

Author Keywords

Embodiment, Hindustani, pedagogy, synchronous distance education

CCS Concepts

• **Human-centered computing** → **Collaborative and social computing**; Empirical studies in collaborative and social computing;

1. INTRODUCTION

In recent years, there has been a growing interest in the corporeal dimension of musical engagement, prompting a shift in music pedagogy from viewing music as an object to emphasizing its meaning through embodied, multi-sensory experiences [5],[44],[28]. Embodiment is particularly evident in informal oral music traditions, such as North Classical Indian music, specifically the Dhrupad subgenre. Dhrupad vocal music stands out for its profound emphasis on physical engagement, including gestures, posture, and bodily movements that serve as conduits for musical expression and communication.

Dhrupad singers appear to frequently interact with melodic ideas through manual interactions with imaginary objects ('MIOs'), materializing motor imagery through effortful physical actions [34].

This process involves sculpting spaces as if physically tangible, with substances like elastic bands, balls, or water, allowing various interactions. It appears to enhance musicians' capacity to imagine musical sounds and is commonly used in teaching ([35] and personal observations), emphasizing the crucial role of spatial perception and haptic sense in Dhrupad music pedagogy.

The key aspects on which an observer may rely to visually identify and classify these gestures is the involvement of a grip, as in grasping a real object, and the exertion of a certain amount of effort—a crucial factor of expressivity in music performance—that is dictated by the sensation of forces and the interaction possibilities that the implicated imagined object may afford (be it the concept of elasticity in stretching something malleable or the concept of gravity for transferring an object that is rigid), and is conveyed through the gestures' kinetic and dynamic aspects.

The current paper further explores the concept of tactility in Dhrupad vocal music, focusing this time on music education rather than performance. The significant societal changes in India [21], increased global popularity of Indian classical music [11], and recent technological advancements, especially in response to the 2019 pandemic, have led to a transition from traditional, in-person Dhrupad music classes to online, synchronous tutoring. While this shift has increased accessibility, it raises concerns about the potential impact on the transmission of bodily dispositions in respect to the tactile aspects of interaction.

Notably, there is a gap in existing research explicitly dedicated to the examination of contemporary practices in technology-mediated synchronous distance tutoring for oral music traditions, such as Hindustani [39], the NIME conference included. This paper seeks to address this gap by scrutinizing the video-mediated synchronous distance education methods employed by specific Dhrupad music teachers and their disciples, particularly in the post-Covid era. The paper initially investigates the haptic elements of teacher-student interactions in on-site classes and subsequently in synchronous distance video-communicated online classes.

To address these issues, an embodied cognition standpoint is adopted in this paper, specifically the 4E perspective in cognition (4E standing for Embodied, Enacted, Extended, Embedded), which emphasizes the interconnectedness of body, mind, and environment [13]. Originally grounded in the fundamental acknowledgment of the body's paramount role in cognition [15],[31],[48], theories of embodiment have since progressed. Many contemporary perspectives now fall within the realm of '4E Cognitive Science,' an umbrella term that captures various strands associated with the evolution of a 'new science of the mind' [26],[38], representing the most radical form of the embodied cognition paradigm. In broader terms, cognition is not solely confined to the brain but involves the entire brain-body-environment system [13]. This perspective has deepened our understanding of how the body significantly contributes to musical comprehension, sense-making, expression, communication, and creativity.



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By delving deeper into these mechanisms, the goal is to raise awareness regarding the appropriateness of commonly used network-mediated platforms for synchronous online Dhrupad music education and to provide crucial insights for the advancement of alternative technologies that can more effectively support the unique embodied requirements of pedagogical practices in oral and other underrepresented music traditions, such as Dhrupad. The inquiry is grounded in interviews, and the analysis is structured according to the principles of 4E cognition, which highlights the close interplay between body, mind, and surrounding environment [30],[42],[43].

The interview analysis seeks to uncover shared underlying concepts, whether explicitly articulated (explicit knowledge) or subtly woven within cognitive metaphors (implicit knowledge), linking musical elements to their visual, physical, or imagined equivalents that are deemed relevant to the discussion on Dhrupad music education, both in-person and online. The outcomes of the interview analysis aim to yield crucial insights for propelling alternative technologies forward to improve the direct transmission of embodied instructions in the context of remote music education. While these advancements would be tailored to better accommodate the requirements of music pedagogy for the specific music genre used as case study, it is expected that the inquiries raised towards the conclusion of this paper will hold broader significance across the domains of networked music education and new interfaces for musical expression that can support it.

2. LITERATURE REVIEW

Unlike Western classical music, Hindustani—and its Dhrupad subgenre, a predominantly vocal type of music, with which this paper deals—relies on direct knowledge transmission from teacher to disciple through demonstration, emulation, and repetition [39], emphasizing experiential and embodied learning. In this ideal scenario of 'enculturation' [29], hand movements, most often aiding in reproducing complex melodic passages, although not explicitly taught are still adopted by students who appear to exhibit noticeable similarities in their movement habits compared to their instructors. This concept parallels Young's 'family body' [51] describing shared bodily dispositions, indicating that not only the music style but also the movement style is inherited through gestural mirroring during practice [35].



Figure 1. Maestro Zia Fariduddin Dagar and his disciple Nirmalya Dey in Palaspe, India, in 2012. The snapshot was taken at 8:17 from a video recording [18]. Reproduced with permission from Robert Caro's YouTube video: "Ustad Zia Fariduddin DAGAR / The Dhrupad Legend", 2015.

Dhrupad features smooth, slow melodic glides, conceptualizing pitch as a continuum and melody as movement within an imaginary 'pitch space' [12]. Vocalists often navigate this space using hand movements in the real, 3-dimensional space, as shown in previous studies [34],[35],[8],[23]. In a previous study, the relationship between hand movements and melodic phrases appeared to extend beyond spatial geometry, incorporating sensations of forces and effort [34]. Dhrupad singers were observed engaging in a concept similar to "sound sculpting" by [27], where gestures resembling manual

interactions with imagined objects—as if sculpting materials in space—accompanied vocal improvisation. These gestures involve effortful hand movements comprising gripping, intensification and releasing phases, resembling actions like stretching or compressing an elastic material, pulling, pushing or throwing a heavy object, and other gestures reminiscent of haptic interactions with objects that are only imagined but appear as if physically tangible.

The research findings indicated an intricate connection between hand movements and the voice in cognition on these occasions, influenced by the interactions and effort possibilities that the implicated objects—although invisible and intangible—can afford. In the absence of real resistance, as experienced in instrumental performance, an imagined object seems to serve as a means to materialize and restrict melodic movements within a specific contour aligning with the melodic mode (raga) and other musical aspects, as well as the performer's desired expression. These findings also suggest that gesture-sound mappings in Mulder's sound-sculpting concept, primarily driven by intuition based on objects' geometrical properties, could be enhanced by introducing elements of hapticity, utilizing images of resistance—even if only imagined—and exerted effort into the design of electronic musical instruments.

Considering these findings, it makes sense to examine how and whether Dhrupad vocal pedagogy manages to impart these music-related space-sculpting interactions between teacher and student. Despite its importance, little attention has been directed toward understanding the role of this shared action-space in music education, especially within oral music pedagogy like Dhrupad. Moreover, the recent shift from one-to-one in-person classes to screen-mediated synchronous distance communication raises concerns about potential alterations or disruptions in how participants engage with each other in this shared haptic interaction space through screen-based videoconferencing platforms. While video-based communication has been often characterized as disembodied and emotionally sterile [2], lacking the sensory richness found in face-to-face interactions [10] and causing a diminished sense of social presence [25], its impact on embodied aspects of Dhrupad vocal education has not been extensively explored before (limited work can be found in [39]). This concern is further discussed in the current paper.

The paper first aims to gain deeper insights into the embodied exchange between teacher and student in traditional face-to-face Dhrupad music pedagogy. Building on these insights, it then examines the potential impact of the digital transition on the transmission of the Dhrupad music tradition, considering pedagogical strategies and technology issues. The 4E Cognition framework serves as the foundation for organizing the analysis of interview material and drawing conclusions regarding the gestural aspects of music transmission in synchronous distance Dhrupad music tutoring, especially for singing. Unlike outdated information-processing approaches that discuss cognitive processes in terms of internal computations and representations, the 4E perspective conceptualizes cognition as distributed throughout the entire body of a living organism and its immediate surroundings [40].

3. METHODOLOGY

3.1 Method

The paper adopts an ethnomusicological perspective [17], employing thematic analysis [4] on collected interviews with selected Dhrupad practitioners. The presentation of emerging themes in the analysis is organized under the 4 principles of the 4E cognition framework, aiming to uncover underlying concepts in cognitive thinking. The goal is to gain a deeper understanding of sensory modalities and connections between musical attributes and somatosensory components in teacher-student interactions, in both conditions, the on-site and the remote. Conclusions are drawn from overarching themes, their interplay, and contextualization within the 4E principles. Representative quotes from participants enhance the narrative.

3.2 Data

The study relies on semi-structured interviews, mostly in English, conducted in two distinct phases: the initial phase during fieldwork in India in 2010-11 and a recent phase in 2023, mostly online, with one single interview conducted in-person (Labyrinth Catalunya, Spain, 5-9.4.23). The scope of the initial interviews was focused on performance practices; hence those questions did not specifically address pedagogy, which only arose on the side through discussions. They accompanied recording sessions of Dhrupad vocal improvisation—which included audio and video recordings as well as motion capture of hand gestures—aimed at developing regression models for inferring effort from a set of movement and acoustic features as a means to enhance movement-sound mappings in electronic musical instruments. The second phase of interviews specifically focused on Dhrupad pedagogy, both in-person and online.

Participants include a cohort of senior Dhrupad practitioners from both the older generation (Zia Fariddudin Dagar, Uday Bhawalkar, Umakant Gundecha, aged at the time between approximately 50 and 70 years old) and the younger generation (Mohi Bahauddin Dagar, Marianne Svašek, Markus Schmidt, Pelva Naik, Meghana Sardar, Cellin Wadier, aged between approximately 30 and 50 years old) as well as some of their students (Isadora Reig, Gauri Raje, and Aarya Patwardhan, aged between approximately 16 and 50 years old). Senior Dhrupad participants provided perspectives from both the teacher's and the student's standpoint. The list of interviews can be found in Table 1 in the Appendix. Participants were only informed that the research project revolves around music and movement, focusing on performance in the initial phase and education in the more recent. Written consent was obtained, and participants could withdraw at any point without compensation.

The interview started with a general and open-ended question, like inquiring about participants' experiences with Dhrupad singing or their level of expertise and years of training. Subsequently, follow-up questions were tailored to the interviewee's responses and insights. For instance, questions included their experience with both online and distance learning, particularly targeting the significance of body movements in the learning process, specific types of movements they focused on, whether teachers encouraged or instructed movement, and whether pictorial terms or metaphors were often utilized by their teachers in instruction. Regarding online learning, questions were asked about differences compared to in-person experiences, the potential impact of sound quality, internet connectivity and delays on the quality of Dhrupad education delivery, as well as preferences for audio-only versus audio-visual learning. Finally, if participants raised relevant issues, further clarification would be sought on any sensory deficiencies identified during the interview. Additionally, their interest in exploring potential technological interventions to address deficiencies experienced in online learning, particularly regarding multi-sensory aspects, would be inquired about. The next section explores structural aspects of traditional, in-person Dhrupad music pedagogy, examining embodiment concepts based on the 4E cognition framework principles.

4. RESULTS

4.1 Dhrupad in-person education

The term 'space' was a focal point in discussions with participants. This isn't surprising, given that Dhrupad musicians envision melodic movement within the spatial dimensions of an imaginary 'pitch space', as explained in the introduction, and that gesture is inherently linked to spatial thinking [1],[18], a connection affirmed by interview insights. However, the prominence of the concept of space in Dhrupad teaching responses, especially its strong link to haptic sensation,

surpassed expectations. The findings propose that Dhrupad music is fundamentally conceived as space and that this conception of space is—in turn—most fundamentally a haptic experience, aligning with human perception of architectural space, where various senses contribute, with the haptic sense being predominant [33]. Summing up, participants envisioned three spatial elements:

1. 'Inner' space, reflecting the abdominal cavity within the body, which signifies mechanical support and aligns with the 'embodied' aspect of 4E cognition. It is described as a substance affording compression and expansion, which is linked to the 'near-outer' space through an almost tangible, elastic material.

2. 'Near-outer' space, which extends beyond the body but within reach and involves engaging with imagined elastic materials affording compression and expansion, potentially resembling a process of motor equivalence for the inner space and representing the 'enactive' and 'extended' aspects.

3. 'Far-outer' space, which is conceived as existing beyond reach and as a denser-than-air substance with visceral characteristics akin to water, that affords compression and expansion, enabling dynamic multisensory teacher-student interactions. The haptic sense prevails in this context, aligning with Krueger's 'we-space' [22], wherein physical space transforms into a social space of interaction.

Therefore, participants' descriptions of this conceived space during pedagogical interactions seem to deviate from the conventional perception of space as a continuous entity, aligning with neuropsychological research [9],[37],[24],[6] on the multisensory integration of body-centric space, delineating three distinct spaces: the 'personal', the 'peri-personal' space (PPS), and the 'extra-personal' space. In in-person Dhrupad singing education interactions, all three identified spaces are envisioned as elastic materials, offering the possibilities of compression and expansion. The 'inner' space, aligning with the 'personal' in neuroscience, represents an internal cavity conducive to compression. The 'near-outer' space, akin to the 'peri-personal', is visualized as an elastic band extending beyond the body, allowing actions like stretching, extending, pulling, compressing, and releasing. Lastly, the 'far-outer' space, aligning with the 'extra-personal', facilitates intersubjective interactions through a ubiquitous substance, like water, providing opportunities for compression.

These findings also align with neuroscientific work. While traditionally dominated by the sense of sight, there is a growing acknowledgment of the involvement of other senses in spatial perception and performance too—haptic, auditory, and even olfactory and gustatory senses. Scholars like Ratcliffe [36] and Pallasmaa [33] underscore the significance of the sense of touch, commonly referred to as somatosensation, as the primary sensory modality involved. Touch appears to convey information about external objects touching the skin and the body itself [41]. Unlike other senses, it lacks a specific organ and encompasses the entire body, with its extremities serving both exploratory/sensory and performative/motor functions [50]. It encompasses a diverse range of sensory content from pain to texture [41] and plays a role in intersubjective relations with others [14],[52]. Hearing, traditionally considered aurally based, is also viewed as a tactually oriented sensation [19].

In summary, findings of this first part of the study seem to suggest that Dhrupad vocal music is fundamentally perceived as a practice of sculpting tangible spaces, and that Dhrupad pedagogy serves as an effective means to convey these space-sculpting interactions through shared tactile experiences within a common physical space. The following section seeks to explore potential disruptions related to space in the online context, particularly those closely linked to the haptic sense, as previously mentioned.

4.2 Dhrupad synchronous distance education

Two different perspectives have arisen from interviews with musicians who were queried about their experiences in online versus in-person settings, with one emphasizing the significance of content over medium, while the other is equally focused on the potential

constraints associated with multimodal, sensorial, and embodied experiences. Despite the small sample size, it appears that senior musicians, including teachers and advanced students, tend to align with the first category, while beginners typically fall into the second. From these discussions, it also seems reasonable to infer that, through their extensive interactions, senior musicians build a more comprehensive toolkit, allowing them to draw on past experiences to compensate for sensory deficiencies posed by technology and geographical separation. The paper focuses primarily on the second category. Findings are here outlined and discussed individually.

Most importantly, several participants expressed primary concerns centered around space-related concepts and the disruption of the shared 'we-space,' where genuine interpersonal interactions occur and which is intricately connected to our complex somatosensory system. They highlighted a deficiency of multisensory information transmission and exchange, comprising various senses beyond just auditory that include sight (also peripheral vision), predominantly touch, and even smell, which have been reported as crucial for a more profound, embodied understanding of the musical material in educational contexts.

The absence of direct and peripheral vision makes it difficult to observe multiple elements in distinct locations simultaneously and the lack of a shared spatial reference frame, crucial for a sense of togetherness and mutual gaze awareness, further compounds these challenges. Participants also highlighted the diminished visual clarity, irrespective of zoom level, affecting the awareness of each other's gaze, and the audio-visual mismatch, which introduces uncertainty in spatial perception. The limited field of view of the camera obstructs simultaneous visual engagement with gaze and full-body aspects, occasionally resulting in challenges like hyper-gaze or the paradoxical constraint of direct eye contact through the camera. The absence of depth information and low resolution further impedes a clear visual comprehension of postures and gestures.

The challenge in conveying subtle aspects of covert embodied engagement, like intentional abdominal muscle control in vocal production, was attributed to this limited exchange of multimodal information, encompassing sound, vision (including peripheral vision), touch, and even smell. Likewise, the difficulty in perceiving peri-personal space (hence also MIOs) arose from the restricted visibility of the cameras, typically focusing solely on the face, and the audio-visual sensory deprivation involved, which is recognized to degrade visuo-tactile peri-personal space. The latter observation aligns with neuroscience findings regarding the brain's plasticity, indicating that the neural representation of peri-personal space (PPS) expands during real-world tool use but not when using tools in virtual environments. Furthermore, the mirroring of one's own gestures on screen tends to confine gestural interaction with melodic content to two-dimensional representations of mostly geometrical (melographic) representations, which stands in contrast to the three-dimensional experience of haptic-related forces and the necessary effort exerted, commonly encountered during in-person teaching sessions and performances. The disruption of social presence in video-mediated communication has been previously associated with the absence of tactile feedback and limited conveyance of non-verbal cues, including subtle facial expressions and nuances in body language [20],[32], and all participants concurred that visual cues are vital in this context, albeit providing only a superficial sense of connection.

Notably, all these reports have surpassed commonly discussed technical issues such as sound quality, internet disconnections, and lag. They are linked to the—expected—visual constraints of common video platforms, but equally importantly to the deficiency of other multimodal information, most importantly touch, potentially leading to a shift in the perception of peri-personal space, gestural instructions, and social engagement in the educational context. According to interview testimony, sometimes this missing information needs to be guessed or can be indirectly inferred from other (bodily) cues, however, this process provides only a restricted perspective of the

entire gestural engagement. To counterbalance this missing multi-sensory information, teachers may also rely more heavily on verbal communication (such as linguistic metaphors) and visual aids (verbal descriptors of musical imagery). Increased fatigue was also linked to this heightened reliance on visual cues, and stress was attributed to limited visibility of each other's body and the concentration of intense gaze on the face of the student alone which causes an intense feeling of close scrutiny by the teacher and negatively affects collaboration satisfaction and effectiveness.

These observations align with previous research indicating that the spatial context conveyed through an interface profoundly impacts the sense of social presence, co-presence, and gaze awareness. Consequently, these issues make non-verbal interactions effective in physical co-location between students and tutors impractical in a virtual setting. However, interviews also indicated that online participants' interactions improved as they developed a deeper understanding of each other's personality and their contingent presence within the virtual context, suggesting a progressive contextual adaptation to technology mediation that helps alleviate initial apprehensions about online music education. Appropriate technologies, capable of supporting the experiential character of Dhrupad education, need to be explored.

5. CONCLUSIONS

The results of this paper support the idea of Dhrupad being conceived of as a practice of sculpting tangible spaces, and of Dhrupad pedagogy serving as an effective means to convey these space-sculpting interactions through shared tactile experiences within a common physical space. Additionally, they clearly show that in Dhrupad online vocal pedagogy, limitations in non-verbal, embodied, multimodal cues result in disruptions in shared spatial and physical context of video-mediated communication, impeding the establishment of attunement between individuals. This hinders effective social interaction and immersion, crucial elements in educational settings, including the transmission of the Dhrupad music tradition style [10]. However, despite foundational criticism, limitations in embodied, multimodal interaction and shared spatiality should be viewed as a design challenge rather than as an impediment in distance learning [49].

Although the paper has relied on a distinct music genre as a case study, there are interesting parallels to make with digital audio interactive systems: while state-of-the-art networked music education (NME) systems for conventional Eurocentric music genres emphasize the transmission and display of symbolic representation (written music notation) of melodic and rhythmic information as an abstraction of music content, digital music interactive systems—as with Dhrupad—revolve around the transmission of experiential and embodied aspects of musical expression that call for the development of new interfaces and respectively novel representations to support it. Hence, this paper aims to bridge the research divide between technology and humanities, particularly within musicology, music performance studies, and the interdisciplinary field of music-related HCI.

The outcomes of this paper, particularly the importance of music viewed in terms of sculpting tangible spaces, can be of paramount importance for the design and development of new electronic musical instruments (EMIs). A long-discussed issue with EMIs has been their modular character, that has been reported to lead to frequent adaptations and a limited opportunity given to developers and performers to master fine performance skills and achieve virtuosity over time, as with conventional musical instruments. Motor-based metaphors that are inspired by effortful interactions with the real world and allude to the sensation of a resistive force that a performer needs to fight against (as in stretching an elastic band, pulling or pushing an object, and other linguistic expressions which have been frequently reported by Dhrupad practitioners during interviews) may prove to form a valuable new HCI paradigm (Ward, 2013), easily comprehensible by novice music performers of new electronic musical instruments. EMIs have also faced criticism for the lack of

physicality in the interaction, an issue attributed to ineffective mapping strategies. Such a physically inspired paradigm may thus also contribute to the enhancement of pedagogical practices for empty-handed artificial interactions with sound by rendering them more 'physically plausible' [7].

Hence, improving the virtual music learning experience calls for the stimulation of multiple human senses, most importantly touch, within an environment that surrounds users, enabling intuitive full-body interaction with content [16]. The majority of Dhrupad interviewees did not offer specific ideas for potential technological interventions to improve online Dhrupad teaching. Nonetheless, most expressed a positive attitude towards adopting any forthcoming interventions that they believe could enhance the quality of Dhrupad pedagogy. Given this fact, it is crucial to investigate the educational potential of capturing, transmitting, and representing haptic information of empty-handed audio interactions in novel ways.

EMG and haptic/force-feedback may prove valuable in this direction. For instance, while EMG-based musical instruments have been long developed and practiced by a number of performers of the NIME community, most notably Atau Tanaka [45], educational strategies for effectively transmitting and instructing others on how to perform these instruments, including the remote context, have not been systematically explored. Novel interfaces and methods of representation for music-related muscle force information need to be developed and transmitted over the network to guide novice practitioners of empty-handed audio interactions. Similarly, while force-feedback has been previously explored in empty-handed audio interactions [51], using this type of information to instruct others has been a less explored idea and needs to be further examined. Additionally, immersive audio-haptic systems, holoportation and holography, combined with various real-time motion tracking technologies and sensors, such as BCI (brain-computer interfaces), head displays and haptic devices promise a deeply immersive, multi-sensory experience capable of bringing users together in a shared online space [47]. Along these lines, the metaverse has gained strong interest in recent years as a fusion of both virtually-enhanced physical reality and physical-persisted virtual space [3], that aims at narrowing or even eliminating the gap between the virtual and the physical world. However, literature on using such technologies for enhancing shared spatial perception, presence, and multisensory aspects in music education is relatively limited [46]. Finally, novel forms of representation (visual or other) for music-related haptic information should be also further explored. Therefore, more work needs to be done in this direction.

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7. ETHICAL STANDARDS

The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Research Ethics Committee of the Hellenic Mediterranean University. Written informed consent was obtained from all subjects involved in the study. No funding was received for reported work.

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9. APPENDIX

Table 2. Interview information

Name	Type of interview	Place	Date
Uday Bhawalkar	In-person	London, UK	July 27, 2010
Marianne Svašek	In-person	Rotterdam, The Netherlands	September 27, 2010
Mohi Bahauddin Dagar	In-person	Rotterdam, The Netherlands	September 28, 2010
Lakhan Lal Sahu	In-person	Palaspe, India	January 6, 2011
Zia Fariduddin Dagar	In-person	Palaspe, India	January 11, 2011
Umakant Gundecha	In-person	Bhopal, India	January 16, 2011
Pelva Naik	In-person	Cardedeu, Spain	April 9, 2023
Isadora Reig	Online	-	May 7, 2023
Meghana Sardar	Online	-	May 9, 2023
Markus Schmidt	Online	-	May 11, 2023

Cellin Wadier	Online	-	September 15, 2023
Aarya Patwardhan	Online	-	September 16, 2023
Gauri Raje	Online	-	September 18, 2023