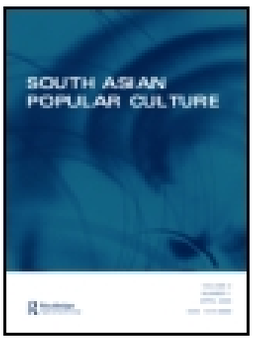

South Asian Popular Culture

ISSN: 1474-6689 (Print) 1474-6697 (Online) Journal homepage: http://www.tandfonline.com/loi/rsap20

Radios, ringtones, and memory cards or, how the mobile phone became our favourite music playback device

Aditi Deo & Vebhuti Duggal

To cite this article: Aditi Deo & Vebhuti Duggal (2017): Radios, ringtones, and memory cards or, how the mobile phone became our favourite music playback device, South Asian Popular Culture, DOI: 10.1080/14746689.2017.1351086

To link to this article: http://dx.doi.org/10.1080/14746689.2017.1351086

SOUTH ASIAN POPULAR CULTURE, 2017
https://doi.org/10.1080/14746689.2017.1351086

Routledge
Taylor & Francis Group

Radios, ringtones, and memory cards or, how the mobile phone became our favourite music playback device

Aditi Deo[a] and Vebhuti Duggal[b]

[a]Humanities and Social Sciences Program, IISER Pune, Pune, India; [b]Sarai-Centre for the Study of Developing Societies, New Delhi, India

ABSTRACT

This article explores the co-constitution of mobile phones and music consumption in India to examine the changing relationships between music, listeners, playback technologies and music markets. Drawing upon ethnographic research conducted between 2011 and 2013 and archival material from 2003 to 2013, we trace the intersections of vectors such as mobile phone technologies, the digital im/materiality of sound recordings, legal and extralegal economies, practices of listening, sharing and storage. It is the intertwined and reciprocal relationships between these vectors that we elaborate upon in our narrative. In doing so, we are concerned with the rapid emergence in this historical moment of the mobile phone as an exceptionally popular music playback device, the legal and extra-legal practices that afforded this emergence, and the shifts in music-as-commodity as well as music listening that accompany the mobile phone.

KEYWORDS

India; mobile phone; digital music; music consumption; music industry; media piracy

In August 2015, a music video produced by the comedy group, All India Bakchod, and featuring the actor Irrfan Khan went viral online with almost seven million hits by November (AIB '*Every Bollywood Party Song Feat*'). The song parodied the 'party song'[1] (its lyrics, sounds and videos) while also drawing into the fold of its lyrics, the circulation of these songs:

> *Janta catchphrase gaayegi / Ringtone isse banaayegi*
>
> *Illegal download karake phir chhe rupaye bachayegi*
>
> The public will sing the refrain / they will make it their ringtone
>
> And save six rupees by downloading it illegally

The lines excerpted above articulate for us several dimensions of the circulation of commercial popular music in present-day India. In enumerating singing, downloads and ringtones as modes of the song's circulation, they point to the imbrication of the oral, the mediated and the communicative in listening practices. The lines also point to the slippery relation between the grey (illegal downloads) and the legal economies (ringtones) that shadow the mobile phone in music circulation. Further, the paltry sum of money 'saved' through illegal downloading – INR 6 – indicates the mundane juxtapositions of the legal and grey

CONTACT Aditi Deo aditi@iiserpune.ac.in

domains. Music's crossing over of multiple platforms and the bringing together of these two ecologies suggest two linked observations about the relationship between music and mobile phones in India today. One, that the coalescing of musical 'publics' is inextricably linked with the mobile phone's role as a music device. Two, participating in aural contexts of ubiquitous listening (Kassabian), mobile phone-related economies today have come to share a common principle: music.

This article enquires into the co-constitution of mobile phones and music consumption in India to examine the changing relationships between music, listeners, playback technologies and music markets. Drawing upon ethnographic research conducted between 2011 and 2013 and archival material from 2003 to 2013, we trace the intersections of vectors such as mobile phone technologies, the digital im/materiality of sound recordings, legal and extralegal economies, and popular representations.[2] The particularities of music circulating in the primarily offline networks of mobile phones in this period have transformed practices of listening, sharing, storage as well as older structures of musical gatekeeping and economic exchanges. The widespread use of mobile phones for playback coexists with the spawning of informal livelihoods clustered around electronic and digital media as well as innovations from the music and phone industries. It is the intertwined and reciprocal relationships between these vectors that we elaborate upon in our narrative. In doing so, we are concerned with the rapid emergence in this historical moment of the mobile phone as an exceptionally popular music playback device, the legal and extra-legal practices that afforded this emergence, and the shifts in music-as-commodity as well as music listening that accompany the mobile phone.

The absorption of the mobile phone into the specific context of music consumption in India allows for insights into the links between listening practices that emerge around the mobile phone and the kinds of music being consumed on the phone. When it was introduced, the mobile phone offered listeners a bundle of musical possibilities through its functionalities. Some, such as the earphone and portability were features of already popular devices such as the Walkman; others such as ringtones and personal playlists were relatively novel. Crucially, these possibilities were not independent of existing musical preferences or consumption practices associated with the genres being consumed. In their discussion of the 'long history of mobile music', Stanyek and Gopinath (16) remind us that this is a plural history, differentiated by the specificities of practices related to genres and aesthetic forms. As the mobile phone came to assume the role of a predominant playback device in India, its uses were shaped both by the customary socialities of listening and by the historical specificities of music industries/markets centred on popular genres. It is through this lens that we consider the construction of the mobile phone as a music device.

Reading the mobile phone in this manner is to draw attention towards the sonic/aural and away from the visual. Discussions of the mobile phone's mediation of sensory perceptions have focused on the mobile phone screen – in particular, the touch screen and its emphasis on visual and haptic engagements (see Gye; Hjorth; Nightingale; Richardson; Sen).[3] Recently, Sen (160) has remarked on mobile phones as 'complete media assemblages' that combine 'the most ubiquitous cameras, music players, Internet portals, credit cards, design pads, and a variety of other technologies'. He continues to develop an argument about a new 'aural materiality' that emerges through the cinematic representation of the mobile phone in Bombay cinema – one that deploys the communicative voice through the ubiquitous phone and extensive cellular networks. We find this notion of an aural materiality of the mobile

phone useful, even as we diverge from Sen's focus to attend to the musical. Our reference to aural materiality in the context of the mobile phone includes the infrastructures (processes, physical features, networks, technologies) that allow for the circulation of the aural through this platform rather than the production of sound/music (musicians, instruments, studios, etcetera). The focus on music also allows us to look at the seldom-studied sonic dimensions of the music mobile phone media assemblage, examining these through the infrastructural, perceptual and semiotic regimes that it participates in.[4]

It is the perceptual and the semiotic that are Amit Rai's foci in his work on the mobile phone. He analyzes the correlations between the ubiquity of digital and new media technologies, and the reconfigurations of affect and labour in the context of India. Rai proposes ecologies of sensation as a method to trace the multiple flows that the mobile phone participates in and refracts: media forms (radio, television, cinema, songs), infrastructures, language, radio connectivity (as a device feature and through air waves), energy, separable devices like memory cards and their loaders, each in turn imbricated with piratic, urban and migratory flows. Rai argues that the mobile phone's telecommunicative capabilities and individuated experience have made it 'the *jugaad* device par excellence' (6), allowing it to potentialize media habituation itself (7). He explains *jugaad*, a term in everyday language usage across several parts of India, as 'a quick workaround that overcomes commercial, logistical, or legal obstacles'.[5] While Rai's observations pertain to the mobile phone as a communication device, we extend the analysis to techniques that enable music's circulation on these phones, and further, to attend to how music has altered and shaped the *jugaad* of the mobile phone.

Often in our fieldwork, we observed, the mobile phone's role for listening to music (individually and sociably) took over its communicative function. For instance, during a field visit to the Adivasi Academy in Tejgadh village in Gujarat, Aditi shared residential quarters with a group of girls from a nearby village, students between the ages of 16 and 20. Between the seven of them, they carried four mobile phones – of which only two were equipped with a SIM card and were used for making or receiving phone calls. The other two phones were precious for the music collections they carried and were primarily used as playback devices. Music through the mobile phone was constantly playing in the background as the girls went about their everyday chores. Further, with frequent load shedding lasting up to several hours a day, charging the phones was carefully organized precisely for this purpose. When asked how the music collections were acquired, the girls recounted visits every alternate day to the village square to buy new song folders. The prepaid talk time bought for the phones equipped with SIM cards, however, was maintained at a minimum required for receiving phone calls. The mobile phone as a music playback device, thus, became a mode of structuring time (dissolving leisure and work), electric infrastructures (breakdowns/load-shedding) and gendered, quotidian social and spatial norms (the girls' visits to the village square). In other words, it was the rhythms of everyday life that the music laden mobile phone inhabited. The ownership of the mobile phone and its function for music listening, especially in rural and urban working class areas, placed it within a historical continuum of other 'small machines' such as the radio, gramophone, bicycle that participated in the production of India's technological modernity (Arnold).[6] As representatives of small machines in present day India, mobile phones and their function as music playback devices allow us to explore the technological mediation of everyday life as well as the emergence of subaltern modes of livelihood such as download vending that we discuss later in the paper.

Given the pervasiveness of such instances of phone usage, we suggest that musical flows have been central to the constitution of the *jugaad*, charging the mobile phone's capacity to affect and be affected. Further, in the form of a digital file and mediated by the mobile phone, the 'thing' that music was – that is, the musical commodity – acquired local inflections, sharing space with everyday products. Across all these flows and intersections, it is impossible to determine the precise point at which the mobile phone becomes the playback device par excellence. It is possible, however, to script a story of its becoming musical. It is that which follows.

The musical mobile phone in the legal economy

The movement of music, mobius strip-like, through the legal and shadow economies is perhaps best indicated through the remarks that Karan Grover, an executive at Nokia,[7] made in our interview with him in 2013.

> It [music] is not a revenue driver for us [that] we measure in terms of brand appeal. So, the revenue or the bottom-line or top-line we generate is inconsequential in this. Because the consumer wants it, it's hygiene today, therefore, we have to be in the ecosystem and provide it. […] The focus is on what the consumer wants. If the consumer wants a caller ringback tone through the device, we would enable that. Like, he (*sic*) wants a radio service on the device, we have enabled that. He wants permanent downloads; we have enabled that. He may want lyrics tomorrow; we will enable that. He may want to see visual renditions of the music; we will enable that. So for us, consumer is the key. […] *Because music is hygiene*, if he [the consumer] wants videos, wants television, we'll do that. Every device [phone] in the world has some music on it. For a device to work, you need a sim-card, a screen and some buttons, *similarly music is there*. [Emphasis ours.]

Karan Grover's discussion of music as 'hygiene' – not merely a tertiary facility provided to phone users but an essential component of healthy business practices – allows us to think of the use of the mobile phone as a music device. Significantly, as he points out, for several phone manufacturers music is not something that generates revenue. At the same time, however, music has served as a catalyst in shaping the features of the mobile phone as, within a few years of its introduction, the phone rapidly accrued multimedia capacities to emerge as a crucial node in music listening and circulation. What is important for us to remember – and what is implicit in Grover's statement – is that the use of the mobile phone as a music device was afforded not only by the manners in which the physical product was created (the presence of ringtones/caller tunes, the early inclusion of the radio device, and eventually the use of memory cards/mp3 files and internet streaming) but also by its acceptance for music listening, which was recast and recreated by hundreds of thousands of user consumers across India. In other words, of the several possibilities for the mobile phone, it was its possibility as a music listening device that was actualized – partly through the physical assembly of the phone, and partly by its sheer use by music listeners.

Beyond the physical production of the device, we aver, the actualization was afforded through varied engagements with music made possible for the mobile phone user. On the one hand, the phone slid easily into a pirate economy centred on electronic media, allowing for music to fluidly participate in listening practices across disparate economic strata. On the other hand, from within the mobile phone industry, this affordance was produced, through several advertisements and marketing innovations, as one that the consumer could/should readily access (for instance, singing competitions; see Image 1). We understand

Image 1. An Idea cellular company advertisement for Mobisur, a singing competition through the mobile phone (Munirka, New Delhi, 2012).

'affordances' here as the identification of a thing through its uses, which, in turn, are 'the visible manifestations of our culture' (Turner 788).[8] That is, affordances (or significances, following Ilyenkov) are not perceived as independent properties of a thing but rather as a context for collective human activity. We stress, then, that the significance of the mobile phone as a music listening device lies in, precisely, its ability to function in that use, collectively. Consider then, the following advertisement.

The advertisement is for a mobile phone-based singing competition, Mobisur, that was launched on 13 July 2012, by Hungama (a digital media entertainment company), ITC (a leading Indian FMCG), Idea (mobile service provider), T-Series (music company) and Shankar Mahadevan. The slogan on the poster reads 'Become a famous singer while sitting at home', along with an image of the well-known singer and music composer, Shankar Mahadevan. Through the mobile phone, the competition draws into a constellation the practices of singing and listening, the Hindi film song, and aural stars of the Indian subcontinent. In other words, the physical features of the mobile phone, namely, microphones, speakers/earphones are relied upon but also cued in are the practices of popular parlour games such as *antakshari*[9] and singing competitions that form part of the South Asian musical experience. Moreover, the poster advertisement recasts the home as the site of the studio in a new way, offering, through the mobile phone, an entry into a singing competition resembling widely popular television series such as *Indian Idol* (a version of *American Idol*), *SaReGaMaPa* etcetera. Entering the competition through this platform would not only allow for a larger group of persons across diverse social strata to participate but would

also crucially encourage those whose access to music and singing could not be from outside the home, whether because of monetary constraints or patriarchal or other injunctions.

In addition to facilitating familiar musical practices for widening populations, the mobile phone also anticipated newer modes of musical experience. Indeed, to produce users as listeners (and vice versa), and as Grover implies, it was necessary for the mobile phone to be perceived and presented not merely as a playback device but also as one that offered enhanced musical interactions. The advertisement above draws our attention to the immediacy that the mobile phone affords – even as one sits at home, one can 'Dial 546465 for an audition with Shankar', and 'Upload [your] video at www.mobi-sur.com'. Through the phone, it suggests, one can connect with a beloved music icon and participate in a musical affective community. Mobisur was one of the number of such initiatives launched on the mobile phone platform. Around the same time as Mobisur, phone manufacturer Nokia collaborated with social media networking application RockeTalk to launch Nokia Antakshari. An adaptation of the *antakshari* game, the mobile-based interactive application allowed users to play with other mobile users by listening to audio recordings of Hindi film songs and recording their own. Taking the game a step further, Nokia Antakshari was structured as a reality game show where participants, in addition to recording songs in their voices, answered trivia questions. Such campaigns promised both the recasting of older relationships centred on music as well as the imagination of newer ones through the mediation of the mobile phone.

The extra-legal economy and the 'music download'

If the ubiquity of music in everyday life shaped formal economies (phone manufacturers, telecommunication services and content providers) in various manners, for a wide spectrum of the population, it was primarily through informal and grey markets that music came to infuse the mobile phone experience. Juxtaposed with the promises of ringtones, FM radio and Mobisur were stores teeming with second hand mobile phones, cheap accessories, and particularly, pirated music downloads.[10] In markets as varied as the urban villages in metropolitan New Delhi, the small city of Bikaner and the village bazaar of Tejgadh, one found these on sale in cramped, tiny lanes overflowing with vegetable sellers, and shacks for dupattas, handkerchiefs, utensils and other such household wares. Here, vendors offered music as folders of digital audio/video files and customers sought music of their choice for uploads on the memory card of their mobile phones. Encountered in such spaces, music acquired a mundane existence. The ordinariness of music on mobile phones in these settings was encapsulated in an observation from one of our interlocutors in Bikaner: 'The business of music downloads is like a "*sabzi bazaar*" (a vegetable market). Buying music is akin to buying vegetables'. The comparison convincingly pointed not only to the ubiquity of music but also to the sheer inevitability of participation in listening and consumption practices. From the points of view of grey markets as well as consumers/listeners, music was as necessary as vegetables.

Crucially, for listeners, the ostensibly legal worlds of ringtones and Mobisur were not removed from those of the corner store that sold pirated music downloads. For a large segment of the over one billion subscribers (Telecom Regulatory Authority of India) that the mobile phone had acquired across regions, sectors and classes in India, the device was the node that linked intimate moments of listening with the performativity of ringtones, and

participation in music-centred communities. Listeners accessed music in myriad manners, unmindful of the fraught interfaces between the legal and its alternatives: music seeped through the 'porous' (Liang) margins of legality. This seepage was not new. In fact, preceding technological formats – especially, cassettes, VCDs and DVDs – had also engendered pirate practices that made music widely available (Manuel). At the same time, the new digital materiality comprising music files and folders, memory cards and mobile phones inflected listeners' relationships with music in distinctive manners. The download vendor was a critical pivot around which these relationships were structured. If, within the formal mobile phone economy, playback capabilities had become 'hygiene', he (in our fieldwork, it was always a male) made available the music that animated the increasingly prevalent multimedia devices.[11]

In a period of limited Internet access in India, by the early 2010s, the download vendor was pervasively present across varied markets – one in a series of music-related livelihoods that have followed the ebbs and flows of technological tides.[12] He compiled, transferred, stored, reformatted and recommended music for his customers, translating music and media content between the structures of regulated and informal circulation. Armed with little more than a computer or a laptop, external hard drive/s and card readers, he peddled these reconfigured musical wares along with films, games, pornography and software. Kumar and Parekh have studied the spaces and practices of music download markets that cater to mobile phone users, locating these in the context of digitalization of music production/consumption and the adoption of the multimedia phone in rural and semi-urban settings. Their descriptions largely align with our field observations: the precarious economy and sociality of extralegal markets, its interactions with legal regimes, the voracious collection and sharing of music by phone users and, underpinning these specificities, the digital materiality of music. In what ways did the download vendor – as the conduit for digital music – partake in this ecology? How did musical content mediate it, while itself being reconfigured? And which musical affordances of the mobile phone were foregrounded in these settings? In other words, how did shifts in extralegal spaces shape music consumption on the mobile phone?

The popularity of the multimedia mobile phone among middle-to-low-income consumers was connected in part to their desire for personalized music collections at their fingertips (Kumar and Parekh 2867). Indeed, for several users, these phones were their first music playback devices and were immediately filled with music audio and video files, acquired typically from download vendors. The music collections that a vendor peddled were acquired in ad hoc manners and from varied sources – downloaded from the Internet, ripped off from CDs and VCDs, copied from a fellow vendor's collection and even from customers' phones. Constructed at the margins of formal music distribution structures and the extensive networks of algorithms – infomediaries (Morris) – that prompted him as he wandered on and downloaded from the Internet, the collections reflected as much as they structured his musical tastes. A pirate and a collector, the download vendor also donned the role of a cultural intermediary, an arbiter of taste, in the processes of selecting and de-selecting, converting from one file format to another, and transferring the music to his customer's memory cards. That is, in the process of using technological literacies, he, like the DJ (Morris; Duggal 'The Pirate DJ'), became a figure who also assumed musical knowledge, making statements of expert judgement such as one offered to Vebhuti in Munirka, 'Purane gaane hi sunane layak hote hain' (Only old Hindi film songs are worth listening

to). Thus, the human and the machinic, the form and the structuring of tastes, collecting and listening, all flowed into each other through *jugaad* modes, stabilizing temporarily in new networks of pirate economies and 'hybrid music curation' (Razlagova).

Music – songs, genres and artists, familiar and newly discovered – of course, was 'the flow of desire' (Rai n. pag.) that forged the paths that these networks followed. As the networks expanded, the mainstream music industry in India had to take notice of the intensified circulation and the difficulty in curbing it. Among the most prominent voices in the industry was that of the Indian Music Industry (hereafter, IMI), an association representing music producers and labels that generate 75% of copyrighted musical recordings in India.[13] IMI regarded the extralegal circulation of music on memory cards of mobile phones – which they termed 'mobile chip piracy' – as a source of serious financial loss that would only increase with time. To resolve the problem, the IMI launched a licence addressed specifically to download vendors in 2009. The MMX – or Mobile Music Exchange – was a blanket licence that allowed vendors to legally sell, in the form of digital downloads, selected music and media that was within the copyright of IMI members.[14]

In a 2012 interview with us, Savio D'Souza, then the IMI general secretary, explained the rationale for accepting and legitimizing what were ostensibly illegal modes of music sale, and the development of the MMX licence. According to him, after much resistance, music content producers recognized that mobile chip piracy was qualitatively different from physical media piracy. Given the immaterial and decentralized replication in downloading, it was difficult to stop vendors by seizing equipment or by shutting stores. Moreover, the 'guy on the street' – the vendor – was passionate about music, providing free marketing and sale. According to D'Souza, the solution had been to offer the download vendor an option to frame his business as legal through paid licensing. In turn, treating the vendor as a partner (rather than a criminal) allowed the IMI to focus on monetizing digital music downloading rather than curbing it. The licence, therefore, was designed based on the logic of the existing download market with open pricing that varied according to the projected customer base – both in numbers and in spending power.[15] D'Souza compared MMX to radio and streaming licences that focused on permitting music circulation but were relatively unconcerned with the number of copies consumed. This implication of the ontology of the music commodity as downloads in contrast to its media-based form highlighted the former's peculiar materiality and infinite replicability.

Music on the mobile phone: Commodity, genre, sound

Let us return, then, to this materiality of music as it circulated on the mobile phone, and its parallels with the generic vegetable. For our interlocutor, music's vegetable-ness had lain in its ability in the digital realm to be quantified: in his words, as something that could almost be measured by its weight. The simile of the vegetable belied the seemingly quintessential intangible, immaterial nature of digital music. Importantly, in buying it like a vegetable, the consumer seemed aware of this new materiality of music. Digitalization and its sale via SD memory cards for mobile phones had enforced a quantitative approach to music as data. For download vendors, the popular unit of measurement was the gigabyte – or the GB. They sold a range of music and media in digital audio and video file formats including mp3, mp4, 3gp and avi – not as songs or albums but as folders counted in gigabytes. In this context, an ideal customer was someone who had unspecific demands about what music

was included in the download rather than requests for specific songs or albums. Indeed, Sanjeev, a young vendor in his early twenties in Bikaner, implied that the two were different forms of labour: while folders could be copied almost blindly, he explained: 'it takes time to search for songs'. The MMX licence had been a response to precisely this shift. While the traditional music industry, according to D'Souza had, 'want[ed] to sell on per-song basis… the consumer want[ed] to buy on a per-kilo basis'. The economics of weight, D'Souza added, made it good sense to buy more music for less even though the consumer perhaps intended to listen to only a few of the purchased songs.

Measuring music in this manner had altered the ways in which it was bought and sold as a commodity. Even after the advent of digital music, of playback capabilities on the computer and in the early period of pirated CDs, the music commodity had been a package: track names, composers, singers, soundtracks/albums were integral to the object and its sale. These links had gradually started disintegrating in the pirate economy by the early 2010s, first as playlists were compiled on the ubiquitous mp3 CDs, and later as music began to be sold on the memory card. This form continues, often, as tracks sans the metadata deriving from formal structures of publicity, perpetuating an altered experience of the commodity. In the cases of previous formats – cassettes, CDs – one could evaluate the quality of the blank media or the recording for static. The download vendor's selling of music in GB units disengaged any outward evaluations of descriptors, sound or media quality from the quantified bulk of music being purchased. It intensified the flattening of hierarchies implicit in differing production values associated with diverse music industries, from international megacorporations to local small-scale studios. Until the download vendor, only those music consumers who had participated in online piracy – primarily, those who could afford computers and broadband connections, since mobile data were expensive – were able to access songs based on file sizes. Now, with a memory card that could be filled with music folders,[16] this new mode of accessing music was available to a vast majority of population of a class, gender and location that had had no such access prior to the mobile phone. It was this practice, then, that propelled the movement of music on the new playback device.[17]

Simultaneous to this affordance of the mobile phone was the ever-increasing acceptability of digital music, particularly in the mp3 format. The compressed mp3 format, as Sterne has argued, was developed to be 'portable', making it ideal for file sharing and collecting (Sterne 10–14). Music as mp3 was necessary as content providers searched for new digital-based markets, and phone manufacturers used preloaded music cards and ringtones to render dynamic the mobile phone. It was also crucial for such bulk modes of music consumption as downloads, and for mobile phone listeners as they shared music via Bluetooth or memory cards, especially in contexts of limited Internet access. File sizes, here, assumed a function of determining which music could circulate and which could not. Consumers were acutely conscious of available space on memory cards and Bluetooth speeds on mobile phones. Vendors acquired specialized literacies in converting audio and video from larger file sizes to smaller ones – in one vendor's words 'preparing files for the phone'. Simultaneously, the mobile phone's limitations of space and speed offered also a way of curbing informal music circulation. One small-scale music producer had developed a strategy of combining several songs that his studio produced into one long .wav file. He explained, 'The file becomes heavy and difficult to share. I fit two such albums in a 2 GB card. I say: "Take it if you want." People [who want the music] come from far away out of interest'. Until they entered a download vendor's collection, such uncompressed files, at least temporarily, resisted the 'ready-to-hand' nature of mp3s, functioning almost as modes of managing digital rights in these contexts.

The relationship of music as weight/folder size, mediated by the download vendor, also engendered new practices of categorization, collection and ownership. Packaging and descriptors used in the formal economy and associated with the cassette and the CD – films, genres and performers – were blurred and/or transformed. Listeners' requests for music were often for broad categories: new Hindi film music, or music videos in the Bhojpuri language, or the songs of singer Shreya Ghoshal. Occasionally, demands were more specific – sad songs from Hindi films, or 'bewafai ke gaane' (lit. songs of betrayal), or 'beechwale' (lit. middle) songs (a colloquial reference to songs from the decade of 1990s). Production of song compilations based on this latter kind of vocabulary had emerged first in the extralegal sector of the cassette economy, spreading to an extent to the mainstream music industry, and carrying over into the digital formats of the CD, the VCD and the DVD (Mehta; Beaster-Jones). The download vendor's predecessors, sellers of cassettes in the 1990s and CDs/VCDs in the 2000s, had sold such compilations and encountered such requests. It was only now, though, that such expectations could play out in the structures of his music collection, not only in its inventories but also in its organization.

Alongside such categories, newer, even more idiosyncratic, categories arose. In one vendor's collection, we found a folder for 'Punjabi songs' that included not only popular Punjabi language songs but also Hindi film music, songs by the Vengaboys, and so on. Critically, here, 'Punjabi songs' appeared to stand in place of dance music or its equivalent, intertwining different generic classifications. As this folder circulated among vendors and mobile phone users, it underwent minor additions and deletions, yet retained the flavour of the music it included. Unsettling the status of music genres, such categories prompt us to think about the translation of different kinds of music across linguistic and consumption contexts. Further, they illumine extralegal music economies – from cassettes to music downloads – as spaces not merely of pirate duplication but as fundamentally responsive to contexts of *listening* rather than of *production*. For 'bewafai ke gaane' and 'Punjabi songs' were personalized modes of listening, unconcerned with provenance, and shaped by the expectations of the download vendor's customers. At the same time, in such folders, the single songs and albums of the industry's imagination or a listener's self-curated, known and loved playlist disappeared under the weight of additional songs grouped together by the vendor. For the vendor's customer, then, music appeared to be filtered neither through purely marketing categories nor by intensely personal preferences, but through deliberations and accidents that combined both.

As the nature of the digital music commodity was reconfigured on the mobile phone – in its exchange value and its identifiers – so did practices of listening to music adapt to the new device. With the presence of multimedia feature phones, it became possible to listen to music on earphones/headphones including cheap and locally manufactured ones bought for as little as INR 50. The constantly affordable earphones allowed the creation and experience of a private cocoon of mobile music, for the first time for several users across classes and in an unprecedented manner. While the Walkman (Hosokawa) and the Ipod (Bull) had enabled such experiences in other national contexts, these had been too expensive to become popular or widespread in India. Here, the mobile phone first presented a tangible possibility for the experience of individuated mobile music. The presence of the earphones with a mobile phone had another consequence. It was crucially the earphones and the phone's speakers that were cited to position the phone as a music device, akin to music playback systems such as the Walkman or the boom box. Thus, in our conversation

with a salesman at *The Mobile Shop* in Nehru Place, Delhi in March 2012, he focused on the sonic features of the phone – the presence of equalizers and various settings such as surround sound. The presence of these features as well as the salesman's account of them further facilitated, not merely discursively but also perceptually, the mobile phone as a music device par excellence.

However, private cocoons and sonic fidelities were only one inflection of the mobile phone's playback functions in India. Time and again we observed passers-by, especially in public spaces and on public transport, using the earphones of the mobile phone only as an antenna to loudly play music or the radio. What the mobile phone came to approximate in some ways, then, was the transistor of yore. Indeed, the *jugaad* of the phone as the music device was its straddling of the individuated and the sociable. Silpa Mukherjee[18] also gives us a description of a predominantly public mode of listening to music on the mobile phone.

> Cell phone music is so ubiquitously present in Munirka, New Delhi that along with the regular bazaar noise, it becomes difficult to track the sources of the multiple phones that simultaneously blast music. In engaging a young boy, Prabhu in a conversation, I found that he owns two phones, a second-hand Gionee smartphone and a pirated Nokia feature phone (a fake Nokia phone because it reads NOKAI instead of NOKIA). *Prabhu cannot get rid of this fake phone because its inbuilt speakers are deafeningly loud.* [30] *He says, '(Jitna sasta phone, utna badiya awaaz). The cheaper the phone, the louder its speakers are.'* (Emphasis ours)

Mukherjee's research in the Munirka area of New Delhi is coincident with our own experiences of people (especially from lower income groups) listening to the mobile phone in public. The mobile phone slid easily into an older form of public listening, which sounded out from homes and shops in the bazaar in India. If loudness as much as fidelity was one of the major principles of shaping sound (Devine), it was amply demonstrated and became part of the dominant mode of listening in India (Karel; Duggal).

As with the fake Nokia, the notion of loudness as a desirable feature of the mobile phone reverberated through the legal economy. In a video advertisement brought out by Spice Mobile on 11 October 2008,[19] the mobile phone transforms itself into a music system, characterized in the visuals by Yamaha surround sound and visibly pulsating loudspeakers overlaid on the body of the mobile phone, throbbing with loud sound (Image 2).

Image 2. A screen shot from a 2008 Spice Mobile advertisement juxtaposing visuals of mobile phones with loudspeakers.

The advertisement opens with a mid-shot of actress Katrina Kaif in a dormitory/youth hostel-like space, attempting to play the guitar/ live music (diegetically), when her playing is interrupted by the sounds of music playing in her vicinity. The soundtrack, a loop of non-diegetic electronic music, becomes louder and louder as Kaif searches for it, till the disturbing loud 'noise' is rendered acceptable and musical when she encounters the source of the sound in her field of vision. The source: the Spice mobile phone turned music system, echoed in Kaif's remarks as: 'Great system'.

Conclusion

Coming full circle to link legal economies centred on the mobile phone with practices of listening, our story closely weaves digital music's local materiality, economies and socialities of music circulation, affective relationships with music genres together with the mobile phone's becoming musical in the Indian context. Our approach pays attention to the affordance of the mobile phone as a musical body in relation to the cultural practices that it participates in – practices pertaining to genre formations, listening (privately and publicly), participating in musically driven parlor games, and acts of buying/selling music. In arguing that the device of the mobile phone resulted in the part continuity and part reconfiguration of these and such practices, we position ourselves with several scholars who speak of the inseparability of media objects and cultural practices (e.g. Kane on audio tapes).

Certain vectors in the mobile phone assemblage that we have discussed above continued to change since our fieldwork in the early 2010s. Crucially, the device acquired new capabilities that further nuanced its musical roles. With increased memory space, video has now become integral to the mobile phone experience. Rapidly growing Internet access and decreasing data costs now allow listeners to access music online and download desired tracks. This has resulted in a weakening, though not a dissolving, of the role of the download vendor. The formal music economy centred on the mobile phone has expanded to include numerous free music applications such as SAAVN and WYNK. Further, Internet data and mobile service providers such as Reliance and Airtel in India have established tie-ups with such applications, placing new stakes in the movement of music on the mobile phone. While such developments leave open an entirely new direction of further research on the relationship between data, music and the phone, as evident in our follow-up field interactions, the mobile phone is firmly established as one of the most popular playback devices today. And in this role, it continues to straddle old and new sensibilities, alternately prompting individuated and social listening. Music circulating in the mobile phone assemblage also acquires a 'thing-ness' distinct from its previous *avatars*. Indeed, the sonic musical continues to be a defining mode of engagement with the device for its users. Music, it appears, has become intrinsic to the *jugaad* of the mobile phone in India.

Notes

1. 'Party songs' refer to film and non-film songs characterized by catchy lyrics, easy melodies, peppy tempos, electronic beats, and visuals that depict high-energy dancing at dance and rave parties.
2. The ethnographic research for this article was conducted in northern India between 2011 and 2013. The sites included some urban villages (Kotla-Mubarakpur; Munirka) and well-known pirate markets (Gaffar Market, Palika Bazaar, Nehru Place) in metropolitan New Delhi, the

smaller city of Bikaner in Rajasthan, and the village Tejgadh in Gujarat. We spoke with several download vendors and listeners across all these sites. Interviews were also conducted with members of the music industry (sound engineers, studio owners) and their representatives as well as mobile phone industry professionals (from small and big shopkeepers/ retailers to executives at Nokia and Vodafone) in Gurgaon and Mumbai. The research was conducted as part of the multi-sited research programme, 'Music Digitisation Mediation' (musdig.music.ox.ac.uk) that included, among other sites, Kenya and Cuba which also exhibited similar practices of music circulation and consumption including both legal and extralegal modes.

3. Discussions of the mobile phone have emphasized the touch screen's potential to transform the perceptual relationship with the screen. Ingrid Richardson (208), through her discussion of mobile phone games, argues that 'mobile media screens set up an entirely different relationship to embodied perception, and require a corporeal schema quite at odds with our usual habits pertaining to screens' and lead to altered proprioceptive regimes. Sen refers to features such as GPS (global positioning system) and mapping devices that recast the visual as the haptic-visual.
4. It is Brian Larkin who suggests that infrastructures have a dual structure: as the things and as the relations between things. In doing so, he goes on to argue, infrastructures are both a 'mentality and way of living in the world' (331). Thus, they enable us to deal with the feelings and other aspirations that they allow.
5. Amit Rai (n. pag.) explains the idea of *jugaad* thus: 'According to Wikipedia, the *jugaad* refers to

> a creative idea, a quick, alternate way of solving or fixing problems' […] To think through the orientation of *jugaad* with the assemblage of mobile media experimented with here, I suggest we consider it an emergent machinic sensory-motor circuit of globalized digitality itself, in which any given obstacle in the way of a flow of desire through an ecology is pragmatically considered and worked around with whatever resources are to hand … (The) *jugaad* uses are also accompanied and enabled by a proliferating pirate economy, as Sundaram has analyzed so well.

The *jugaad*, notably is very close in idea and practice to the Brazilian *gambiarra*. A Portuguese word, *gambiarra* suggests 'making do'; a technological or object-driven, improvisation-based practice. In Brazil too, it ties into the pirate economy quite closely. For detailed studies, see Rosas, Menotti.

6. In his discussion of the absorption of small machines in everyday life in colonial India, David Arnold draws attention to the manners in which the social life of everyday technologies can 'illuminate wider relationships, to highlight processes of social change and the exercise of political power'. (12) Technology, he argues, can also engender 'novel forms of subalternity. […] through the artisans, labourers, and migrant workers who were displaced from their existing employment, suffered adverse changes to their working lives, or seized the new opportunities technology proffered'. (ibid.)
7. Nokia, at the time of our fieldwork, was the leading mobile phone manufacturer in India. It has ceased operations in its own name since its purchase by Microsoft in 2014.
8. In his discussion of the concept of 'affordance', Turner draws upon the theories of Gibson, Heidegger and Ilyenkov. He points to the necessity of going beyond Gibson's 'simple affordances' to bring together Ilyenkov's notion of 'significances' and Heidegger's 'familiarity' and argues that an affordance could, in fact, be understood as a context for human purposive activity.
9. For more on the parlor game of Antakshari, refer to Morcom (222–6).
10. 'Download markets', that is markets for digital files and folders of music/media/games/software, flowed out of pirate markets centred on physical electronic media and equipment. With growing popularity of mobile phones as well as USB-friendly devices, beginning in the late 2000s, such spaces for the informal sale of downloads also became ubiquitous.
11. The thing to note is that across spaces (urban/rural) that we visited download vendors, that is, salespersons in mobile shops that participated in the act of downloading as well as vendors who specialized in media downloads regardless of genre, format, platform and device, were

all male. This was observed not only in our fieldwork but may also be seen in Swati Janu's community art project wherein she runs a 'Phone Recharge ki Dukaan (a phone recharge shop)' (https://khojworkshop.org/the-khirkee-storytelling-project-1-bihari-balma/). Her shop then, functions as an anomaly: it works on exchange and is run by a woman, a clear contrast with the dominant market principles. More broadly, it is important to remind ourselves of the deeply gendered anxieties around mobile phone technologies (Doron; Tenhunen).

12. Download vending, as a distinct mode of livelihood, had emerged along with the download markets. In its technology-based transience, it resembles other occupations such as cassette vending, DJ-ing, and even ringtone programming in the formal music industry (Gopinath 2013).
13. According IMI, the mainstream music industry in India loses rupees 450 crores (~ $ 83 million) due to music piracy every year. While the ascription to download vending or its estimated size is unspecified, it is widely regarded as a primary cause of this loss. For more information, please see the official IMI website. URL: https://www.indianmi.org/suffer.html (accessed July 2016).
14. For more information, please see the official MMX website. URL: https://www.mmxindia.org/index.html
15. Indeed, D'souza informed us, the MMX experiment had returned a profit of hundred per cent in the first year of its launching in the state of Andhra Pradesh. Other licences similar to MMX were being created and marketed by small-scale music producers and content aggregator companies such as Hungama Entertainment. However, very few of the download vendors that we met during fieldwork in Rajasthan, Gujarat, Maharashtra and New Delhi had subscribed to any. Most vendors complained that licence prices were exorbitant in comparison to their download earnings; others had preferred to have a signboard claiming legality on the storefront.
16. One important exception needs to be included here. The memory stick/ USB flash drive was also loaded by the download vendors, often for auto-rickshaw drivers, who had locally made USB players which would be hooked to speaker systems inside their rickshaws. These would also be used by tea shop owners and workers, with one such system functioning between several workers.
17. The cue for this argument comes from Jeremy W. Morris' work where he speaks about the manner in which CD-ROMs helped lay the ground for an eventual contextualization of music on the computer, thus paving the way for a digital music commodity.
18. 'Item Numbers and Loudness,' research note on the SARAI website. URL: https://sarai.net/item-numbers-and-loudness/. Accessed July 2016.
19. Spice Mobile advertisement. URL: https://www.youtube.com/watch?v=RnI2AzpsvlA&ab_channel=KatKaifFan.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

The research leading to these results has received funding from the European Research Council Advanced Grants scheme under the European Union's Seventh Framework Programme (FP7/2007–2013), ERC [grant number 249598]. The research programme was titled 'Music, Digitization, Mediation: Towards Interdisciplinary Music Studies'; it was directed by Prof Georgina Born and ran from 2010 to 2015 based at the University of Oxford, UK.

Notes on contributors

Aditi Deo is an ethnomusicologist whose work looks at music of the Indian subcontinent, with a focus on technological mediation of music, music genres, and transmission of musical knowledge. She is currently Faculty Fellow in Humanities and Social Sciences at the Indian Institute for Science Education and Research Pune.

Vebhuti Duggal has a PhD from the School of Arts and Aesthetics, Jawaharlal Nehru University, New Delhi. Her research interests include the study of media, sonic and musical cultures, sound technologies, and piracy.

References

AIB: Every Bollywood Party Song Feat. Irrfan. Producer: All India Bakchod. 2015. Film. Web. July 2016. <https://www.youtube.com/watch?v=r3nhttUMhrI>.

Beaster-Jones, Jayson. "Music Piracy, Commodities and Value: Digital Media in the Indian Marketplace." *Oxford Handbook of Mobile Music Studies*. Eds. Jason Stanyek and Sumanth Gopinath. Oxford/New York: Oxford University Press, 2014. 434–55. Print.

Bull, Michael. *Sound Moves: iPod Culture and Urban Experience*. London: Routledge, 2015. Print.

Devine, Kyle. "Imperfect Sound Forever: Loudness Wars, Listening Formations and the History of Sound Reproduction." *Popular Music* 32.2 (2013): 159–76. Print.

Doron, Assa. "Mobile Persons: Cell phones, Gender and the Self in North India." *The Asia Pacific Journal of Anthropology* 13.5 (2012): 414–33. Print.

Duggal, Vebhuti. *The Community of Listeners: Writing a History of Hindi Film Music Aural Cultures*. Unpublished PhD, Jawaharlal Nehru University. 2015. Print.

Duggal, Vebhuti. "The 'Pirate' DJ." *Marg: A Magazine for the Arts, Special Issue: 100 Years of Bombay Cinema* 64.4 (2013): 42–51. Print.

Gopinath, Sumanth. *The Ringtone Dialectic: Economy and Cultural Form*. Cambridge MA: MIT Press, 2013. Print.

Gye Lisa. "Picture This: The Impact of Mobile Camera Phones on Personal Photographic Practices." *Continuum* 21.2 (2007): 279–88. Print.

Hjorth Larissa. "Snapshots of Almost Contact: the Rise of Camera Phone Practices and a Case Study in Seoul, Korea." *Continuum* 21.2 (2007): 227–38. Print.

Hosokawa Shuhei. "The Walkman Effect." *Popular Music* 4 (1984): 165–80. Print.

Kane Brian. "Relays: Audiotape, Material Affordances, and Cultural Practice." *Twentieth-Century Music* 14.1 (2017): 65–75. doi:https://doi.org/10.1017/S1478572217000068.

Karel Ernst Kirchner Long. *Kerala Sound Electricals: Amplified Sound and Cultural Meaning in South India*. Unpublished PhD, University of Chicago, 2003. Print.

Kassabian Anahid. *Ubiquitous listening: Affect, attention, and distributed subjectivity*. Berkley/Los Angeles/London: University of California Press, 2013. Print.

Kumar, Neha, and Tapan Parekh. *Mobiles, Music, and Materiality*. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, New York: ACM. 2013. 2863–72. Print.

Larkin Brian. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42 (2013): 327–43. Print.

Liang Lawrence. "Porous Legalities and Avenues of Participation." *Sarai Reader* 5.1 (2005): 6–17. Print.

Manuel Peter. "The Regional North Indian Popular Music Industry in 2014: From Cassette Culture to Cyberculture." *Popular Music* 33.3 (2014): 389–412. Print.

Mehta Monika. "DVD Compilations of Hindi Film Songs: (Re) shuffling Sound, Stardom, and Cinephilia." *South Asian Popular Culture* 10.3 (2012): 237–48. Print.

Menotti, Gabriel. "Gambiarra and the Prototyping Perspective." 2011. <https://medialabprado.es/article/gambiarra>.

Morcom Anna. *Hindi Film Songs and the Cinema*. Aldershot: Ashgate Publishing Limited, 2007. Print.

Morris Jeremy Wade. "Curation by Code: Infomediaries and the Data Mining of Taste." *European Journal of Cultural Studies* 18.4–5 (2015): 446–63. Print.

Nightingale Virginia. "The Cameraphone and Online Image Sharing." *Continuum* 21.2 (2007): 289–301. Print.
Rai Amit S. "On the Jugaad Image: Embodying the Mobile Phone in India." *Postmodern Culture* 23.1 (2012): n. pag.
Razlagova, Elena. "The Past and Future of Music Listening: Between Freeform DJs and Recommendation Algorithms." *Radio's New Wave: Global Sound in the Digital Era*. Eds. Jason Loviglio and Michele Hilmes. New York: Routledge, 2013. 62–76. Print.
Richardson Ingrid. "Pocket Technospaces: The Bodily Incorporation of Mobile Media." *Continuum* 21(2) (2007): 205–15. Print.
Rosas Ricardo. "The Gambiarra: Considerations on a Recombinatory Technology." *Digital Media and Democracy: Tactics in Hard Times* (2010): 343–53. Print.
Sen Shaunak. "'It's Ringing Again': Cellular Ambiguities in Hindi Cinema." *Bioscope* 4.2 (2013): 159–81. Print.
Stanyek, Jason, and Sumanth Gopinath. "Anytime, Anywhere? An Introduction to the Devices, Markets and Theories of Mobile Music." *Oxford Handbook of Mobile Music Studies*. Eds. Jason Stanyek and Sumanth Gopinath. Oxford/New York: Oxford University Press, 2014. 1–25. Print.
Sterne Jonathan. *MP3: The Meaning of A Format*. Durham/London: Duke University Press, 2012. Print.
Telecom Regulatory Authority of India. "The Indian Telecom Services Performance Indicators: October – December, 2015." New Delhi, India, 2016. <https://www.trai.gov.in/WriteReadData/PIRReport/Documents/QPIR_Oct_to_Dec-15.pdf>.
Tenhunen, Sirpa. "Mobile telephony, mediation, and gender in rural India." *Contemporary South Asia* 22.2 (2014): 157–70. Print.
Turner Phil. "Affordance as Context." *Interacting with Computers* 17.6 (2005): 787–800. Print.