Listening in/for Ekbatan: An Experimental Acoustemology

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Abstract

This article develops through dialogues between a poet, English teacher, and musician based in Ekbatan, Iran, and a sound artist and anthropologist based in Wakefield, England. These dialogues center on a listening in/for the town of Shahrak-e Ekbatan, Tehran, Iran and aim to situate it according to its material structure and sonic ecology. In June, 2021, the authors listened to and recorded Ekbatan every day for about an hour around sunset. This text provides (auto-) ethnographic reflections on the soundscape of Ekbatan via original field recordings and interviews, and through discussions of shared memories from an autobiographical perspective. By analyzing first-hand accounts and recordings, the authors also meditate on noticeable changes within the soundscape and discuss their social-political and economic underpinnings. Ekbatan is a planned town, located near the western borders of the Iranian capital Tehran. For the authors—current and former residents of Ekbatan—it represents a prototypical utopic neighborhood; its cold and robust façades offer warm interiorities; its spatial organization creates liminal spaces that manifest disalienation, community, and collective identity.

Keywords: Acoustic Ecology, Soundscape, Listening, Social Change, Belonging, Urban Planning, Ekbatan

Introduction

As an ambitious 'megastructure' (Banham 1976), *Shahrak-e* Ekbatan (Ekbatan Town), or simply Ekbatan, serves as a symbol for a decade of industrial development in Iran, bearing traces of the country's pre- and post-revolutionary history. Modular residential blocks consisting of five-, nine- and twelve-story towers made of reinforced concrete characterize the city. Built on a 594-square-kilometre piece of land, it is home to 45,000 people, mostly middle class, though of different social, cultural, and ethnic backgrounds and religious beliefs. Two major highways border Ekbatan on the north and south, two residential complexes on the east, and an aviation exhibition space and airport on the west (see Figure 1). It offers public spaces, schools, kindergartens, leisure centers, gyms, cafés, restaurants, a hospital, medical clinics, pharmacies, shopping malls, roads, a network of buses and taxis, and an underground railway station among other urban facilities, all within a walkable distance of one another. In architectural terms, it is an open-ended, self-reliant, brutalist megastructure, composed of two sites that are divided into three zones: the East site consists of Phase 1 and Phase 3; the West site consists of Phase 2.

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Figure 1. Aerial view of Ekbatan, Tehran, 35°42'29.8"N 51°18'36.9"E. Google Earth. 08 August 2021

1. Listening

While 'listening to' and 'listening for' may seem to reference a (single) body's cognitive ability to pay attention to and discriminate between various sonic events, as social animals equipped with imagination and empathy, humans also listen *with* and listen *as*. One can listen with others to an unfolding sounded event. Digital technologies have extended this ability across space, place, and time, making it possible to listen to an event in novel ways. The 2020 pandemic further accelerated these digitally-enabled affordances. More than ever, online events which necessitate listening with others have become the norm. A recent performance² at Theatre Aufbau Kreuzberg (Berlin) exhibits, for example, a "live-streamed" music performance, available to anyone with internet access.

One can also imagine listening to sounds as another-as someone in love, as someone at war, or as both at the same time. One may think: how would my lover listen to this sound environment? What would they hear? One may also ask, through the critical prism of "posthumanities": how would a non-human 'object' (Harman, 2002) listen to sonic phenomena? How would the ocean listen to a piece of plastic travelling on a humpback whale? What would it hear? How would 'Gaia's critical zone' (Arènes, Latour and Gaillardet 2018) listen to the Anthropocene? How would artificial intelligence, as an evolving body, retrospectively listen to the 'modern' traces of technological acceleration and what would it then hear?

² Hadi Bastani and Yalda Zamani, live electronics improvisation and live coding, Klangteppich Festival 2021, tak Theater Aufbau Kreuzberg, Berlin, accessible via the following link:

As 'situated' (Dewey and Bentley 1949 Reprinted in Handy & Harwood 1973b.; Haraway 1988) 'embodied' (Varela, Rosch and Thompson 1991; Noë 2004) 'agents' (Latour 2014), humans are embedded 'organism-environment' entities functioning in and through a necessary exchange with other entities (Phillips et al. 2017). As such, humans always also listen *in*, listen *from*, and listen *through*. Combined with listening, the prepositions in, from, and through, imply a sense of spatiality, contextuality, positionality, perspective and historicity. One listens in space and time from a particular position, along some trajectory, in a certain situation: biological, ecological, historical, cultural, social, linguistic, economic, ideological, discursive, (geo-)political, psychoacoustical, psychological, and so on.

One also listens through certain media that allow transmission of sonic phenomena, such as the air in the Cave of Maltravieso, the water in the Arctic Ocean, and the steel in the walls of the Gaza Strip. In addition, various technologies used in different listening practices for amplifying, recording, and transmitting sounds such as microphones, headphones, loudspeakers, amplifiers, transducers, antennas, and receivers shape the sonic event. Technologies mediate our understanding of 'sounded world[s]' (Samuels, et al. 2010) by regulating our listening habits. What is revealed or confronted in/through listening, or as Jean-Luc Nancy writes, what 'resonates in listening' (2007), depends on the position and situation, in the broad sense described above, from which the act of listening takes place. But if, as Nancy (2007: 5) stated, listening involves tension, intention, and attention, what resonates in listening would then also depend on the modality of such tension, intention, and attention. In other words, listening would also depend on the ways in which the 'subject,' or human agent's body, performs the act of listening. Various taxonomies of listening modes have been proposed, for instance in composition / sonic arts and musicology by Schaeffer (1966), Chion (1990), and Huron (2003); in electroacoustic music analysis by Smalley (1986), Delalande (2008), and Roy (2003); in music cognition by Tuuri and Eerola (2012); in interaction design by Gaver (1993); and in medicine and engineering by Bijsterveld (2019). What these fields have in common is a shared attention to 1) the movement/action causing sound (e.g. vibration in non-vacuous medium); 2) the acoustic properties of sound; 3) the distinction between hearing and listening; 4) the possible ways of describing sounds (for instance according to Schaeffer's 'typo-morphology' (1966), Smalley's 'spectromorphology' (1986), Frey et al.'s 'temporal semiotic units' (2009), Oliveros' 'quantum listening' theory (2000)); 5) the semantic aspects of sound.

Listening practices have contributed towards the formation and development of several domains of 'modern' sciences and arts. These include disciplines in which sound is the 'object' of study, such as audiology and acoustics, and areas in which sound affords a pathway towards different forms of knowledge acquisition such as sonification (Supper 2011; Vickers and Holdrich 2019); ornithology (Bruyninckx 2018); ecoacoustics (Almo and Stuart 2017; Shamon, et al. 2021); architecture (Touloumi 2018); urban studies (Stirling 2020); sound studies (Blesser and Salter 2007; O Keeffe 2017; Bull 2019; Cobussen 2019); urban sociology (Gandy and Nilsen 2014); cultural geography (Anderson, Morton and Revill 2005), car mechanics (Krebs 2012c), and human-machine interaction (Suchman 1987) among others.

In anthropology, attention to sound has been traditionally given in the context of 'music in/as culture' (Blacking 1973; Merriam 1980; Rice 1987; Nettl 2005a; Reily 2006; Tomlinson 2011). Through ethnographic fieldwork, the anthropologist's task is to participate in culture; 'observe' its workings as presented to the ethnographer through various forms of social exchange and performance; record the process and gather field data; and provide description and analysis based on their experience in the field and the collected data. Although written descriptions or 'fieldnotes' have constituted the primary form of capturing the

anthropologist's experience of the 'field,' audio recordings have been a substantial part of the ethnographic archives as well. Inspired by the Kaluli people in Bosavi rainforests of Papua New Guinea and by Murray Schafer's seminal text The Tuning of the World (1977)-where the term 'soundscape' was coined-Steven Feld began to pay stronger attention to sound 'as a cultural system' (1988). He proposed a shift from ethnomusicology to 'eco-muse-ecology' and introduced the notion of 'acoustemology (i.e. acoustic epistemology)' in his 1993 entry in The Soundscape Newsletter, in order to explain 'the constant interplay of inspiration, imitation, and incorporation that linked the flow of natural and human sound expressions' (1994: 5) in Kaluli ways of life. As such, acoustemology was proposed by Feld as both a disciplinary shift in perspective and an analytical tool, meant to facilitate an exploration of the 'ways sound and sounding link environment, language, and musical experience and expression.' (1994: 4) In so doing, acoustemology placed a new emphasis on listening as an important way of appreciating, exploring, investigating, and unfolding various modes of culture-environment entanglement. The fruit of this effort, Feld's Voices of the Rainforest³, is a soundscape collection produced from recordings made by himself among the Kaluli people of Bosavi, Papua New Guinea. The album was issued in 1991 as part of 'THE WORLD' series, which has been made available by Smithsonian Folkways as part of the Mickey Hart Collection.

Another block we would like to add to our brief theoretical account on listening concerns a return to the body and the senses within late 20th-century scholarship. Having emerged through experimental and theoretical biology and neuroscience, such concerns spread across disciplines, introducing concepts such as autopoiesis and embodied cognition (Maturana and Varela 1972; (Thompson, Varela and Rosch 1991; Shapiro 2019). Broadly, the literature on embodiment claimed that cognition was 'an extended system assembled from a broad array of resources' (Wilson and Golonka 2013: 4) that spanned the brain-body and the environment. Combined with Arjun Appadurai's (1990) theorization of the cultural economy as an interconnected collection of '-scapes' within the framework of 'globalization,' the embodiment 'turn' refocused anthropological studies on sound, voice, and listening as fertile grounds for ethnographic scrutiny. In conjunction with the early 21st-century studies on language and music (see Silverstein 2005 and Inoue 2006), and 'the work that decenter[ed] a Eurocentric approach to the relation between media and mediation (Martín-Barbero 2001; García Canclini 2005),' this shift identified sound and the oral as 'imbricated in theory and politics, thereby, as critical to the ethnographic endeavor' (Samuels et al. 2010: 332). Within sound studies, the embodiment turn afforded or reinforced the view of the listening subject as an embodied agent, responding to and re-sounding the sonorous as it spreads in space and mediates the social.

Before continuing our discussion in the next part by situating it in Ekbatan, we will share our perspective concerning two terms that are frequently used in this text: "soundscape" and "soundmark." We are writing these lines on one of R. Murray Schafer's lasting contributions to sound studies, one day after his death (14 August 2021) at the age of 88. Although this text is not about soundscape per se, we recognize the weight of the task at hand due to the theoretical potential and widespread popularity of the term. In contrast to its varied popular applications, Schafer's soundscape is charged with instructions concerning what sounds matter and how one ought to listen to them. Over the years, it lays out a trajectory that explains his strategies of integrating urban sound and modern culture into a harmonious whole; similar to how sounds intermingle in 'nature.'

³open.spotify.com/album/4BMc8sbdRqhyKcEVbsoU0j?si=MwIsXggYTguMZLb9najtLg&dl_branch=1 (Last accessed 14 August 2021)

Through his lens, humans are understood to be the 'composers' of this whole that has been damaged by the 'sonic sewer' of urban life or 'noise,' which he took to be 'the discord between visual and acoustic space.' (Schafer: 33) We find the notion of soundscape productive, though perhaps not in the same way that was intended by Schafer: as a predetermined framework for sonic engineering. We find it productive, broadly 'for its evocation of a "sonic landscape" (Kelman 2010: 229), one which encodes complex relations between sounds, materials, environments, events and processes, in the broadest sense, in the context of culture and society. Replacing the term 'music' with 'soundscape' in the following quote from the seminal text *Noise* (Attali 2009: 5), we agree with Attali's observation that '[soundscape] is a credible metaphor of the real ... it is a herald, for change is inscribed in noise faster than it transforms society.' An investigation of sound and listening in this context, therefore, cannot afford not to attend to background noise, as it is 'a critical component of acoustic phenomena' (Attali, 230).

Schafer's soundscape typology (1977: 9–10) consists of three concepts: 'keynote sounds' (ubiquitous sounds in the background that are usually taken for granted), 'signal sounds' (sounds, including background sounds, that are listened to consciously as localized events), and 'soundmarks' (sounds unique to a particular community or setting—the sonic equivalent of a landmark). After Kreutzfeldt and Søchting we understand soundmark within an affectual—rather than an environmentalist—ecology as 'a complex dynamic whereby the individual is engaged in an environment,' (2019: 77) as opposed to a rather spectacular event or monumental phenomenon that somewhat defines the acoustic life of a 'community' (Schafer 1977: 10). In Schafer's theorizing, community 'sounds' like a stable unit. Kreutzfeldt and Søchting 2019: 69). In this direction, we consider soundmarks to be *signs* understood by way of their affectual potential, along the lines of Deleuze's affective ecology whereby sign is, above all, considered in light of its capacity to affect something or someone (Deleuze 2000).

Having mapped out a lineage for our theoretical allegiances for this article, we continue in the following two sections with a conversational and speculative reflection on the soundscape of Ekbatan. Based on a series of virtual dialogues, field recordings, and sonic commentary, the rest of this article aims to balance the improvised, intuitive, and poetic with the composed, dialectical, and scholarly.

2. Situating Ekbatan: A Brief History

Named after Ecbatana, the capital city of the ancient Median Empire that existed around 700 BC, Ekbatan's idea emerged in the early 1970s from the convergence of several economic, (geo-)political, sociocultural, and technological flows. By the time the design of the town began (1974), all the major stock markets in the world—particularly in the United States and the United Kingdom—were facing the worst crash since the Great Depression (Davis 2003), whose effects were intensified due to the 1973 oil crisis. Meanwhile, a significant increase in oil revenues accelerated industrialization and urbanization in Iran. The country's large oil reserves, long borders with the Soviet Union, and the Iranian monarch's fondness for American technological/cultural developments (as well as his anti-communist inclinations) made the country an important strategic ally for the United States since the 1960s.

The Kennedy administration's policy for defeating Communist expansion in so-called 'emerging nations'⁴ was in part designed according to an economic plan aimed at free-market integration and land reform. To counter the rising Soviet influence in the region following revolutions in China, Cuba and Iraq, the Kennedy administration convinced the Shah to begin land reform in order to gain the support of the peasantry and labor organizations (Ansari 2001). As a result, the Shah launched a reform program in 1962–1963 known as *Enghelabee Sefid-e Shah va Melat* (White Revolution of the Shah and the People) that was meant to abolish the quasi-feudal landlord class in rural Iran (Matin 2013), promote privatization, and accelerate industrialization through establishing a capitalist economy (Ansari 2001). Rapid industrialization encouraged a massive rural-urban migration, particularly to the capital, Tehran. The master plan for constructing large-scale housing projects that led to Ekbatan emerged in the mid-1960s in response to such developments, in order to control unprecedented urban growth (Gruen and Farmanfarmaian 1968).

As part of this program, aimed at providing mass housing primarily for the capital's growing middle-class population, the Tehran Redevelopment Company (TRC) planned the pilot project for Ekbatan in 1972 'under the leadership of Rahman Golzar Shabestari, a young Iranian architect' (Sedighi 2018: 11). The TRC employed the US-based Gruzen and Partners architecture firm in 1974 to design East Ekbatan, and the South-Korea-based Space Group architecture office in 1976 to design West Ekbatan (Sedighi 2018). Rahman Golzar and his Iranian architectural team also played an important part in developing Ekbatan, particularly in designing the public spaces, including a bazaar-like environment that 'activated the public life of residents at ground level, with integral gardens and parks.' (Sedighi 2018: 19) Thomas Erdbrink⁵, a Dutch journalist, described this environment in his 2015 documentary movie about Iran as 'a peace of paradise within a concrete jungle.' Although the 1979 Islamic revolution disrupted the construction process and led to the removal of some public facilities such as outdoor pools and pavilions, 'the layout for West Ekbatan was implemented between 1976 and 1992' (Sedighi 2018: 14).

3. Hear It Is: A Sounded Neighborhood

According to first-hand accounts, Ekbatan's soundmarks include the sound of children playing, schools, rotary sprinklers, people socializing, planes passing overhead, plane engines running during repair operations, ventilation systems sucking air from underground parking areas and routing it to open ground level public spaces through openings under the towers, the residential blocks' central heating and standby generator system, delivery motorcycles, steps on loose cobblestones, crickets, windows opening and closing, resonance in corridors that link apartments in each floor, internal air conditioning system known as *fan-coil* turning on and off or running, movement up and down the emergency exit stairs, elevator doors opening and closing, elevators operating, people's interactions in the kitchen heard from underneath the emergency exit stairs, and birds. Some of these sounds can only be heard in specific locations, or at particular times (for instance, cricket sounds signal summer nights and rotary sprinklers signal sunset). Also, some of the sounds belong exclusively to the interior, private space (for instance, the sound of the fan-coils, or internal stairs), some exclusively to the exterior, public (for instance, the steps on loose cobblestones), and some mediate both spaces (for instance planes, crickets, and children playing). (See Appendix 1)

⁴ Kennedy, JF. Special Message to the Congress on Foreign Aid. Public Papers. 1961; 1(203): 205–206.

⁵ Erdbrink, Thomas (Writer) and Roel van Broekhoven (Director). 2015. *Het land waar niks mag maar alles kan*. In N. Frints (Producer), "Onze man in Tehran". The Netherlands: nop.

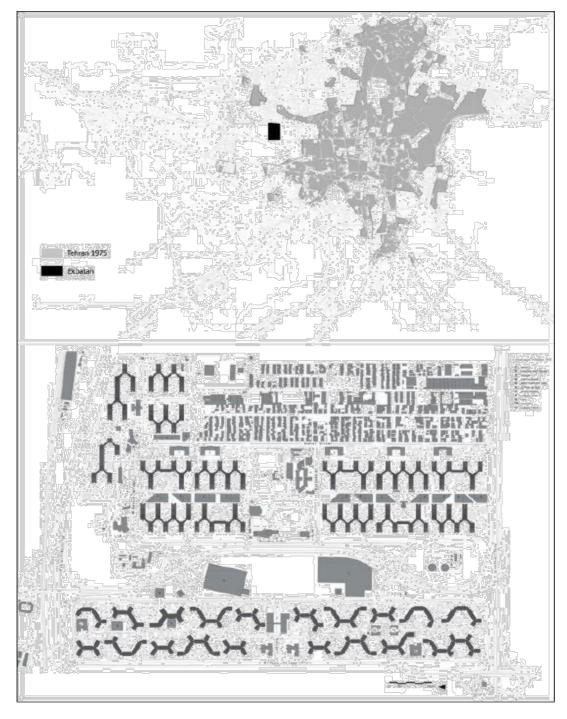


Figure 2. Ekbatan's location, 1975 (top), and its urban layout (bottom). Source: Mohamad Sedighi (2018: 12)

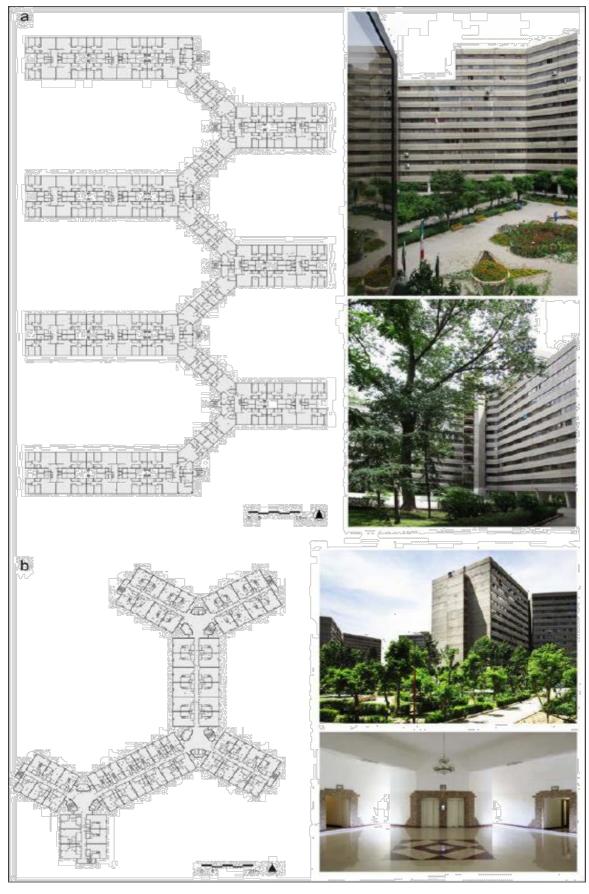


Figure 3. a: Typical residential mega-slab in East Ekbatan. b: Typical residential mega-slab in West Ekbatan. Source: Mohamad Sedighi (2018: 14).

Based on such descriptions, it is possible to broadly categorize Ekbatan's soundmarks in two forms. One model would group them as follows: Interior sounds; Exterior sounds; Sounds that mediate interior and exterior spaces. The other would classify them based on sounds that belong to particular locations and sounds that signal specific times. Describing sounds based on categories of interior (private) and exterior (public) is productive here merely for analytical purposes. We do, however, acknowledge the scholarly attempts in anthropology and (ethno-)musicology that have problematized such dualistic conceptions in order to pluralize the auditory experience and highlight the mutual constitution of private and public spheres. For instance, Susan Gal's semiotic analysis (2002) considers these categories as 'not only encultured and relational, but fractal-like and recursive.' (Born 2013: 25)

In Ekbatan, sounds move among the blocks interacting with each other and with the structure of the place. They collide with the concrete, metal, and glass embedded in the structure of the towers, becoming reflected and absorbed. The towers, as such, shield a part of incoming sounds from the airport, connecting roads and highways, the effect of which is particularly noticeable if one listens from a ground-level position located in front of a tower whose 'back' is facing the airport and connecting roads. The open staircases; open corridors that connect ground floor entrance lobbies; public spaces and greenery that cover the areas in between the blocks also reflect and absorb sounds coming from all directions. Sound is guided by the Y-plan slabs in the East and the semi-hexagonal super slabs in the West (see Figure 3) towards the greenery and public spaces, where it gets diffracted around the edges of the structures and absorbed by the obstacles on the way. The sound is herded as such, but so is the wind and humidity. Humidity caused by the vegetation and rotary sprinklers used for irrigation mixed with air currents that flow in a semi-circular fashion among the blocks refract sound and attenuate its pressure level.

Inside the apartments, double-glazed windows and double-glazed walls filled with polystyrene and plaster control the sound pressure levels. Such sound-proofing measures create a sense of safety and privacy within interior spaces, ensuring a reasonable degree of comfort for the occupant, despite close proximity to the airport, the nearby highways, and adjacent neighbors. This feeling of safety and comfort is reinforced by the buildings' earthquake-proofing, anti-burglary measures, and multi-layer vegetation cover (tree-shrub-grass) among and around the blocks that cool the buildings during warm weather.

'What I recall from Ekbatan's soundscape more than anything else is its silence,' says Hossein Bastani, a former resident who is currently based in London. Sarah Miri, a current resident, similarly recalls: 'Ekbatan's silence is quiet, sometimes so quiet, especially if you are in an upper story apartment, that it may disturb you if you are used to noisy street life like me.' Hossein recounts: 'I was pleasantly surprised by the quietness of the place in the early days when I moved into a duplex apartment on the 11 and 12th floor. It gave a sense of security.' This sentiment is shared by Mo H Zareei. Born and raised in Ekbatan, he is currently based in Wellington, New Zealand, but visits the place at least once a year for a couple of weeks. He notes: 'As a child, every time I entered Ekbatan from outside I felt a sense of relief, which was triggered by the relative quietness of the place.' Farhang Farrokhi, also a former resident, echoes these comments, adding that 'Ekbatan's silence involved an immersive hum.' He adds: 'This wasn't a disturbing hum; it made the place peacefully quiet but also slightly melancholic.'

In terms of its sonic character, the soundscape of the town is similarly described by our other interlocutors, using different terminologies that point to the same meaning, as a rich, immersive and constantly shifting drone or hum. This hum is part of the sounds, images, and feelings that manifest as we remember Ekbatan. This hum and the way people's voices resonate in it is particularly remembered at night by our interlocutors when the influence of other city noises is at a minimum (See Appendix 1, part 3). Although hums sounding close to pink or brown noise are the most familiar keynote sound in urban settings everywhere as Schafer (1977) noted, Ekbatan's hum seems to be remembered as a distinctive one. Bastani (2019: 170) previously suggested that there is potential for further research to explore relations between the emergence of an experimental electronic music scene in Iran and Ekbatan's unique spatio-material distribution and social affordances-there are a considerable number of experimental electronic composers and performers who have lived in Ekbatan. The prevalence of ambient and drone music styles has been one of the dominant threads within the scene in terms of its musical and sonic aesthetics. Could there be a relationship between the presence and different modalities of this hum that mediates private and public life in the town and the aesthetics of experimental electronic musicking in Iran?

We conjecture that Ekbatan's organization in space functions as a sound herding and noise management assemblage. Whether it was deliberately designed for that purpose or not, it gives the town a distinctively quiet soundscape, in which plane sounds mix with sounds of cars commuting on connecting roads and highways; children playing; people socializing; ventilation systems (specific to Phase 2); and the residential blocks' central heating and standby generator system. The latter sound has become more noticeable recently due to several blackouts, brought on by the country's struggle with increasingly higher summer temperatures and severe droughts—consequences of a larger 'water bankruptcy' (Madani, AghaKouchak and Mirchi 2016), and increasingly higher demands.

Mo tells me: 'Because typical city noises are filtered in Ekbatan, it is mostly the sound of community life and interaction among people that manifest in the foreground.' As a neighborhood, Ekbatan is known by our interlocutors to stimulate a sense of belonging. The rather uniform distribution of the socio-economic aesthetics seems to have contributed to a sense of community attachment, which is sounded through the residents' doings in the town. As an assemblage composed of uniform towers, similar public spaces and greenery, and a distinguishable soundscape, Ekbatan concurrently eradicates a certain level of socio-economic disparity while allowing the residents to take part in a distinct whole, one that differentiates their lifestyle from the other residents of the capital.

When I posted a call asking for volunteer interviewees who knew Ekbatan well in the Telegram group of Sonic Tehran, Sevda Khatamian replied: '... I'm a proud Ekbatan kid. I lived there for over 15 years and I still visit the place a couple of times a year...' In response to Sevda's message, Kamyar replied: It is interesting that a lot of Ekbatanis consider being from Ekbatan as a proud part of their identity.' Sevda replied: 'I guess you have to live there for a while to understand where this passion comes from. There's a sense of security, or some kind of freedom, that's felt in the area. It might be due to the fact that the town is kind of security forces, and that all the Blocks look similar.'

Public spaces 'play an important role in emotionally connecting people to this place,' says Soheil Soheili, a frequent commuter and visitor. Noting the particular significance of a bazaar-like strip of shops in East Ekbatan—a popular hangout for the residents as well as the people living nearby—Staub (2015) has previously noted the role of Ekbatan's public spaces in creating a strong collective identity. Forouzandeh and Motallebi (2012) have also observed that Ekbatan's well-organized public spaces and urban facilities are the number one indicators of neighborhood attachment among the residents. Sound is both a constitutive element and a by-product of this organized space. It is ingrained in the residents' and visitors' memory of the place.

Being embedded in while constantly (re-)shaping the flows that make this whole, residents partake in and (re-)invent subcultures by creating symbolisms in their social routine. These manifest both at a local (for instance through greeting habits and lifestyle choices that are particular to residents of a certain block or circle of friendship) and translocal level (for example through participation in music 'subcultures' (Thornton 2013), 'particularly Iranian rap and hip hop' as Maral Kazemi pointed out to me, and popular calendrical events like *Chāharshanbe Suri* (the Scarlet Wednesday): a festival celebrated in Iran, Afghanistan, Azerbaijan, Iraqi Kurdistan, and Tajikistan on the eve of the last Wednesday before the *Nowruz* (Persian new year). Ekbatan's soundscape during Chāharshanbe Suri is known to be distinctive due to louder fireworks and longer celebrations that continue well into midnight and often clash with security forces.

4. Soundwalking in Ekbatan

The descriptions in this section correspond to the recording titled 'Soundwalk (Day),' which can be found in Appendix 1, part 2. 'Soundwalk (Day)' represents all recordings of the walks that we performed throughout June 2021, condensed to a 10-minute soundscape piece.

The walk's length is around 500 meters (Figure 4). We start from a spot between Block 16 and 18, near *Jabir Ibn Hayyān* high school in Phase 2 and move northward. It is Thursday, July 1st, 2021, and the clock shows 19:55. Zoom H4n recorder is turned on. We set the levels, put a limiter on the output for extra caution, and press record. It is a busy time of the day, though here it is rather quiet.

Birds (00:00 – 00:40). A sound that immediately catches our attention is that of birds, especially the calls of the common swifts. This high-pitched shrieking birdcall in the evening cuts through the house sparrow choir and is specific to Ekbatan. The town has become a major breeding ground for a large population of common swifts, who appear every year a few days before the spring and stay for about three months. The squeaky sound of the common swift during spring is one of the sounds that make Ekbatan's soundscape distinguishable from the rest of Tehran.

Apart from crows, city pigeons, and house sparrows—who are regular residents of urban environments in many parts of the world—Ekbatan's bird ecology also includes the whiteeared bulbul—a songbird known locally as *bolbol-e Khormā* (date(-palm) nightingale)—and Rose-ringed parakeet (mostly found in Phase 3). There is, however, a range of captive bird sounds. These can be heard particularly in springtime and on summer evenings when some owners place their cages at the window. The sound of canaries, parakeets, and mynas are the most common. We are walking on the west side of Block 16, which is exposed to the airport. The traffic sound becomes louder as the bird sounds move further into the background. We hear plane engines, people chatting, and children playing.



Figure 4. The soundwalk trajectory (red marking). Reproduced by the authors from Google Earth, 12 August 2021. The yellow line indicates the western border of the town.

Children (00:40 – 03:35). Arriving at Block 14, we turn eastward towards a space between Block 14 and 16, which is a popular playground for children. As we approach the area, the sounds of children playing become louder. We encounter a group playing *stop-havāyi*—a game that is native to Iran—with a deflated soccer ball. The sound of the ball hitting the ground creates pulses around which all other sounds are organized in the surrounding space. A plane engine roars and a metal-cutting electric saw buzzes as the deflated ball hits the ground and excites the children, who run, scream and shout. Opposite the blocks, there is an aircraft hangar that belongs to the neighboring Mehrabad Airport. This is where the planes are sent for maintenance. Iran's aviation industry is under tight sanctions and due to a shortage of parts, these planes may never rejoin the fleet. The hanger opposite Block 16, therefore, looks more like a scrapyard where the planes are parked as spare parts. In the background, we hear the engine of one of these planes being tested. The children shout louder as the engine roars and the game intensifies as a result of the new energy pumping in.

Ekbatan provides children with ample space and opportunity to play. This has created a distinctive culture of playing throughout the town that has not changed much, at least in comparison with other areas of the city, despite digital devices replacing many children's outdoor playtime. In all residential blocks, different segments of the open public spaces are

occupied by different groups of children who choose them carefully according to the requirements of the games they want to play. These games range from football, basketball, volleyball, cycling, and skating to hide-and-seek, *stop-havāyi*, and *haft-sang*—the latter is also native to Iran. Encircled by the towers the sound of children is echoed and amplified, creating a distinctive feature of the soundscape that resonates in the residents' memories.

Delivery motorcycle (03:35 – 04:00). We continue eastwards toward the space between blocks 16 and 15. This area is a segment of a linear cobblestone footpath that is stretched in a south-north direction connecting even- and odd-numbered blocks. It is often referred to by the residents of Phase 2 as 'the stretch.' Laid out in the middle of 12-storey towers, the stretch appears as a valley cutting through surrounding mountains. Composed of the sounds of people walking and chatting, children playing, and planes taking off, the lo-fi soundscape of the stretch on a summer evening sounds like a calm but voluminous river running through the valley. As if protected by 12-storey towers on both sides, the stretch appears as a futuristic reincarnation of the ancient city of Ecbatana in absolute grey, where the public lives of the citizens resound. The stretch allows the social life of the residents of individual blocks to flow, cross, collide, and overlap, creating new modes of socialization that are unique to Ekbatan. It is because of the immediacy of this space, that many of the inhabitants have taken up walking as a daily activity.

'Noises' that occasionally disturb the lo-fi soundscape of the stretch may involve the shrieking of a child, a calling voice, or an accelerating delivery motorcycle. Although the stretch is designed as a car-free zone, it has been increasingly filled with the sound of the delivery men's bikes. These motorbikes deliver material from Kowsar and Golha shopping centers to other shops and to the residents' apartments. They ride on the footpath with little regard for the people. The most common motorbike sound in Ekbatan, and throughout the city, is that of the Honda CG 125. This model was first produced in 1976. It was the fruits of market research conducted two years earlier in Tehran by 'Honda's Takeshi Inagaki, who was in charge of creating motorcycles for developing countries, and Einosuke Miyachi, the man in charge of design.'⁶ CG 125 was destined to succeed in Iran. A CG 125 is a basic economic unit in Tehran. One who owns one can have a job—the basic job of delivering goods or giving rides to passengers, but nonetheless a job.

Busker (07:37 – 09:45). Walking around and listening to the space between Block 16 and 15 we recognize the sound of cutlery hitting plates (04:00–04:13), coming from the nearby cafés. These are relatively new additions to the soundscape. There were no cafés in this area until about five years ago. We make a 270-degree turn and head north. There is percussive music at the distance; more CG 125 sounds; more people's voices; and more music. Two groups of teenagers meet. A boy from one group calls the name of a boy from another. The other boy doesn't respond. A girl in the second group says to the boy whose name was called: 'Where do you know him from?' This encounter reminds us of a comment that was made by Sevda Khatamian, one of our interlocutors and a former resident of the town. Sevda told us that, in a city where interactions between boys and girls were actively discouraged by the moral police (if not all the time repressed), Ekbatan welcomed it. She added: 'The residents of Ekbatan have found opportunities to develop a culture of their own, which has

⁶ Extracted from Honda website: https://global.honda/heritage/episodes/1975cg125.html (Last accessed 14 August 2021)

been largely tolerated by the security forces, perhaps due to the fact that the town is somewhat secluded from the rest of the city and they [the security forces] feel less need to control it.'

We are moving slowly among the crowd with our handheld digital recorder. Somebody asks us for directions to the nearby mega mall. Music comes from teenagers' mobile phones and cafés' PA systems. Some of this music, however, sounds 'live.' We walk towards live sounds. These sounds signal another recent development in the soundscape of the town: the addition of street performances. When Bastani left Ekbatan around 2006, during the first period of Mahmoud Ahmadinejad's presidency (2005–2013), no buskers were around. It was still too controversial. Live music was not allowed in public spaces except for religious mourning and traditional Nowruz music. Buskers gradually started to occupy the space during the first period of Hasan Rouhani's presidency (2013–2018) and have been a part of the sonic environment ever since.

In a country where performing music in public can still be controversial, busker sounds can be read as signs of an ongoing shift in the country's political culture, which has been dominated for the past 43 years by a revolutionary doctrine rooted in Shi'ite Islam. They signal that the authorities have grown less sensitive to such expressive behaviors in the popular culture that were once considered symbols of political-religious dissent and Western cultural hegemony. What these sounds also signal, however, is how the economic extremes imposed upon the society, mainly as a result of the system's political-economic malfunction, but also due to the brutal effects of the US sanctions, have forced musicians to perform in the streets to make money. Gay Jennifer Breyley had previously noted that '[i]n the face of economic hardship, in part due to Iran's ongoing difficult political relationship with some Western powers, some art musicians have reluctantly joined their fellow artists on the streets, or at least in the parks...' (Breyley 2016: 81).

As we reach the Golha Bridge, we see the source of the live sound. He is standing behind a microphone, which is placed on a stand, with a guitar strapped on. His amplifier is on the ground by his feet. He is performing using his guitar and voice on a backing track. The song is a famous pop tune entitled *Meshki Rang-e Eshgh-e* (Black is the Color of Love) by Reza Sadeghi, an Iranian singer based in the country. The space is both produced and transformed by the music and the buskers' gestures. As we arrive, the crowd is also gathering. We witness and realize that a previously private experience has found a channel to surface in the public domain. The small audience of women, men, and children participate in the performance by listening and dancing. A musicking experience as such becomes a temporarily-coordinated community-making expression of affect and individuality. In an environment where musical expression, particularly in the public domain, is still somewhat controversial, such transitory experiences inevitably manifest as minor acts of political dissent. In the background, the routine life of the residents and visitors goes on. A young teenage street vendor is advertising his plums: '*Ālu ālu* 20 Toman, *ālu ālu* 20 Toman (plums plums 20,000 Tomans), and a person is asking another for directions to a *sangaki*: a bakery that bakes *sangak* bread.

Conclusion

Ekbatan's soundscape signals change in multiple directions. It is noticeably busier than around 2004–2006 when the authors left. This is mainly due to the opening of a new shopping mall and a new underground station. The station is the first in West Lane. This

means that people who live further west need to travel to Ekbatan to catch their train. Sonically, these two changes have translated into louder traffic and conversing voices. As a result, Ekbatan's traditionally quiet 'hum' has become a few decibels louder. In terms of wildlife, Ekbatan's street cat population is still one of the largest in the city. Its bird population seems to have grown. *Bolbol-e Khormā* (date(-palm) nightingale) is a new addition to the soundscape. This might be due to increasing urbanization in Tehran and/or other areas, which has led to the destruction of the bird's habitat, and/or to favorable conditions for breeding and accessing food in Ekbatan.

The town also sounds significantly more 'musical'; there is much more music in the space. Before the authors left Ekbatan—Soltani in 2004 and Bastani in 2006—listening to music was largely confined to the private domain: in homes or cars. If cafés and shops played recorded music, it could not be heard outside the boundaries of their space. Nowadays, not only can music be heard everywhere, but much of it is performed live. Many cafés and restaurants feature live bands. Tehran's Jazz Café, for instance, has become a popular spot for live music. The revolutionary government's issue with live music is not, however, completely solved. There is still a myriad of cancelled concerts and 'confronted' shops and street musicians. Nevertheless, the state is much more tolerant, thanks to the civil society's consistent push-back on the system's repressive cultural policies.

As young Ekbatanis, however, hearing loud music from an open window in Ekbatan was a relatively common experience for us. This has also changed; there is much less of it. This might be linked to the fact that there is generally more music in the air. On the one hand, listening to loud music in the old days somewhat signified rebellion against an anti-music political culture that was also internalized in society due to the Islamic Republic's Doctrine. On the other hand, due to the state's hostile policies concerning cultural production, it was generally harder then to access music. Playing loud music, therefore, was an act of self-expression that showed off an individual's taste for and access to music. With the spread of digital technologies and the internet, this culture started to change from the bottom up and gradually transformed the government's approach as well. Nowadays, anyone with a phone can access almost any music they want, almost anytime, almost anywhere. This change can be heard in the soundscape, as the main sources of music in the atmosphere come from smartphones.

Ekbatan's soundscape, despite COVID-19-related cautions and the city's generally depressive 'mood,' expresses a diverse and rich space of sonic-social interactions composed of contrasting dynamics. Whereas our effort was concentrated on providing a rather macro perspective, further research can reveal how this space is mediated by digital technologies and gender and class relations. Ekbatan's wildlife is also a rich domain for eco-acoustical and sonic-social explorations. From an urban noise studies angle, the town's louder hum can be investigated in relation to recent urban infrastructural changes. As a community-oriented environment that inspires relationships, especially among the youth, Ekbatan encourages subcultural formations. These are manifest in the ways in which youths listen to music, curate their outfits, or socialize. As such, Ekbatan's musical subcultures, for instance, demand further investigation.

In a difficult time, when the whole country struggles with the COVID-19 pandemic; a broken economy; water shortage and other environmental crises; and a looming return to radical right-wing politics, Ekbatan's soundscape is lively. Far from wanting to undermine Iranian

people's suffering, Ekbatan's soundscape reminded us of Abbas Kiarostami's films, particularly *Life and Nothing More*, which look for and depict ordinary life in the most difficult of circumstances. In Kiarostami's films, similar to Ekbatan's sounds, life is depicted as the process of living, a continuous meandering path journeying through the landscape, as opposed to a linear succession of singular events or dramas. This is a path in which the travelers' voices, human or otherwise, permanently resound and reside, and in doing so, reconfigure the space, leaving traces to be discovered and learned from (or ignored) by future travelers.

Geolocation Information

The research was conducted in Ekbatan, Tehran, Iran and Crigglestone, Wakefield, United Kingdom. The research involved a study of a music scene in Iran, with an emphasis on the practices formed in Tehran. Crigglestone/Wakefield Coordinates: 53.6440° N, 1.5226° W. Ekbatan/Tehran Coordinates: 35.7109° N, 51.3114° E.

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Disclosure Statement

No potential conflict of interest was reported by the authors.

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Navid Soltani (BA) is a singer/songwriter and poet currently based in Tehran. He teaches private classes in English language and literature. Both of the authors spent the majority of their childhood and teenage years in Phase 2 of Ekbatan. Bastani lived in the town from 1991 to 2006, and Soltani from 1990 to 2004. Since 2004 he lives between Iran and the UK.

Note on interviewees

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Maral Kazemi is a visual artist based in Tehran, Iran.

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Sina Shoaei is a sound/interaction designer and founder of the 'Alien N Proud' record label in Tehran, Iran.

Soheil Soheili is an interdisciplinary artist, researcher, and founder of the 'Noise à Noise' record label in Tehran, Iran.

References

- Farina, Almo and Gage Stuart. 2017. *Ecoacoustics: The Ecological Role of Sounds*. Hoboken (NJ): Wiley.
- Anderson, Ben, Frances Morton, and George Revill. 2005. "Practices of music and sound." Social & Cultural Geography 6 (5): 639–644.
- Ansari, Ali. 2001. "The Myth of the White Revolution: Mohammad Reza Shah, 'Modernization' and the Consolidation of Power." *Middle Eastern Studies* 37 (3): 1 24.
- Appadurai, Arjun. 1990. Theory, Culture & Society 7: 295–310.
- Arènes, Alexandra, Bruno Latour, and Jérôme Gaillardet. 2018. "Giving depth to the surface: An exercize in the Gaia-graphy of critical zones." *The Anthropocene Review* 5 (2): 120–135.
- Attali, Jacques. 2009. *Noise: The Political Economy of Music*. Translated by Brian Massumi. Minneapolis: The University of Minnesota Press.
- Banham, Reyner. 1976. *Megastructure: Urban Futures of the Recent Past.* London: Thames and Hudson.
- Bastani, Hadi. 2019. 'Recent Experimental Electronic Music Practices in Iran: An Ethnographic and Sound-Based Investigation'. PhD thesis, Queen's University, Belfast, Belfast. https:// www.hadibastani.com/phd-thesis.
- Bijsterveld, Karin. 2019. Sonic Skills: Listening for Knowledge in Science, Medicine and Engineering (1920s–Present). London: Palgrave Macmillan, https://doi.org/10.1057/978-1-137-59829-5.
- Blacking, John. 1973. How Musical Is Man? Seattle: University of Washington Press.
- Blesser, Barry, and Linda-Ruth Salter. 2007. Spaces Speak, Are You Listening? Experiencing Aural Architecture. Vol. 121. Cambridge (MA): MIT Press.
- Born, Georgina, ed. 2013. *Music, Sound and Space: Transformations of Public and Private Experience.* Cambridge: Cambridge University Press.
- Breyley, Gay Jennifer. 2016. "Between the Cracks: Street Music in Iran." *Journal of Musicological Research* 35(2): 72–81, http://doi.org/10.1080/01411896.2016.1165051.
- Bruyninckx, Joeri. 2018. Listening in the Field: Recording and the Science of Birdsong. Cambridge (MA): MIT Press.
- Bull, Michael. 2019. "Listening to the sirens." In *Sound objects*, by James Steintrager and Rey (Eds.) Chow, 228–245. Durham: Duke University Press.

Chion, Michel. 1990. L'Audio-Vision. Paris: Editions Nathan.

- Cobussen, Marcel. 2019. Listening and/as Imagination. Vol. 1, in The Oxford Handbook of Sound and Imagination, by Mark Grimshaw, Mads Walther-Hansen and Martin (Eds.) Knakkergaard. Oxford: Oxford University Press.
- Davis, Philip. 2003. "Comparing Bear Markets 1973 and 2000." *National Institute Economic Review* 183: 78–89.
- Delalande, François. 2008. "Music analysis and reception behaviours: Sommeil by Pierre Henry." *Journal of New Music Research* 27 (1-2): 13–66.
- Deleuze, Gilles. 2000. *Proust and Signs: The Complete Text.* Translated by Richard Howard. Minneapolis: University of Minnesota Press.
- Dewey, John, and Arthur Bentley. 1949. Knowing and the known. Boston: Beacon.
- Feld, Steven. 2015. "Acoustemology." In *Keywords in Sound*, by David Novak and Matt Sakakeeny, 12–21. Durham, NC: Duke University Press.
- —. 1994. "From Ethnomusicology to Echo-Muse-Ecology: Reading R. Murray Schafer in the Papua New Guinea Rainforest." *The Soundscape Newsletter* (Simon Fraser University) 8: 4–6.
- —. 1988. "Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression." *Cahiers de Musiques Traditionnelles* 1: 214–221.
- Frey, Aline, Céline Marie, Lucie Prod'Homme, Martine Timsit-Berthier, Daniele Schön, and Mireille Besson. 2009. "Temporal Semiotic Units as Minimal Meaningful Units in Music? An Electrophysiological Approach." *Music Perception* 26 (3): 247–256.
- Gal, Susan. 2002. "A Semiotics of the Public/Private Distinction." *A Journal of Feminist Cultural Studies* 13(1): 77–95.
- Gandy, Matthew, and B.J. Nilsen, 2014. The Acoustic City. Berlin: Jovis Verlag.
- García Canclini, Néstor . 2005. *La antropología urbana en México*. México: Consejo Nacional para la Cultura y las Artes-Universidad Autónoma Metropolita- na-Fondo de Cultura Económica.
- Gaver, William. 1993. "Synthesizing Auditory Icons." *CHI Human Factors in Computing Systems*. Amsterdam: ACM Press. 228–235.
- Gruen, Victor, and Abdolaziz Farmanfarmaian. 1968. *The Comprehensive Plan of Tehran: the General Ideas and Schemes (351)*. Masterplan for the city's development, The Planning and Finance Organisation, Tehran: The Planning and Finance Organisation.

- Haraway, Donna. 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 575–599.
- Harman, Graham. 2002. Tool-Being: Heidegger and the Metaphysics of Objects. Chicago: Open Court.
- Huron, David. 2003. "Is music an evolutionary adaptation?" In *The cognitive neuroscience of music*, by Isabelle Peretz and Robert (Eds.) Zatorre, 57–75. Oxford: Oxford University Press.
- Inoue, Miyako. 2006. Vicarious Language: Gender and Linsguistic Modernity in Japan. Berkeley: University of California Press.
- Javan Forouzande, Ali, and Ghasem Motallebi. 2012. "The role of open spaces in neighborhood attachment. Case study: Ekbatan Town in Tehran Metropolis." *International Journal of Architecture and Urban Development* 1 (3): 11–20.
- Kelman, Ari. 2010. "Rethinking the Soundscape: A Critical Genealogy of a Key Term in Sound Studies." *The Senses and Society* 5 (2): 212–234.
- Krebs, Stefan. 2012c. "Sobbing, whining, rumbling: listening to automobiles as social practice." In *The Oxford handbook of sound studies*, by Trevor Pinch and Karin (Eds.) Bijsterveld, 79–101. Oxford: Oxford University Press.
- Kreutzfeldt, Jacob, and Rune Søchting. 2019. "The Aesthetics of the Soundmark." *Public Art Dialogue*, 9(1): 65–81.
- Latour, Bruno. 2014. "Agency at the Time of the Anthropocene." *New Literary History* 45 (1): 1–18.
- Madani, Kaveh, Amir AghaKouchak, and Ali Mirchi. 2016). "Iran's Socio-economic Drought: Challenges of a." *Iranian Studies* 49 (6): 997–1016.
- Martín-Barbero, Jesús. 2001. Al Sur de la Modernidad: Comunicaci'on, Globalizaci'on y Multiculturalidad. Pittsburgh: Instituto Internacional de Literatura Iberoamericana.
- Matin, Kamran. 2013. *Recasting Iranian modernity: International relations and social change*. London: Routledge.
- Maturana, Humberto, and Francisco Varela. 1972. Autopoiesis and cognition: the realization of the living. Dordrecht: Reidel.
- Merriam, Alan. 1980. *The Anthropology of Music*. Evanston (IL): Northwestern University Press.
- Nancy, Jean-Luc. 2007. Listening. New York: Fordham University Press.

- Nettl, Bruno. 2005a. *The Study of Ethnomusicology: 31 Issues and Concepts*. Champaign (IL): University of Illinois Press.
- Noë, Alva. 2004. Action in Perception. Cambridge: MIT Press.
- O Keeffe, Linda. 2017. "Sonifying Memory: Creative Approaches to Representing Socially Constructed Soundscapes." In *Sensory Arts and Design*, by Ian Heywood (Ed.). London: Bloomsbury.
- Oliveros, Pauline. 2000. Quantum Listening: From Practice to Theory to Practice Practice, MusicWorks #75, Fall 2000 Plenum Address for Humanities in the New Millennium, Hong Kong: Chinese University.
- Reily, Suzel, ed. 2006. The Musical Human: Rethinking John Blacking's Ethnomusicology in the Twenty-First Century. Farnham: Ashgate.
- Rice, Timothy. 1987. "Toward the Remodeling of Ethnomusicology." *Ethnomusicology* 31 (3): 469–488.
- Roy, Stéphane. 2003. L'analyse des musiques électroacoustiques: Modèles et propositions. Paris: L'Harmattan.
- Samuels, David, Louise Meintjes, Ana Maria Ocho, and Thomas Porcello. 2010.
 "Soundscapes: Toward a Sounded Anthropology." *Annual Review of Anthropology* 39: 329–345.
- Samuels, David, Louise Meintjes, Ana Maria Ochoa, and Thomas Porcello. 2010. "Soundscapes: Toward a Sounded Anthropology." *The Annual Review of Anthropology* 39: 329–345.
- Schaeffer, Pierre. 1966. Traité des objets musicaux. Paris: Le Seuil.
- Schafer, Raymon Murray. 2006. "The Music of The Environment." In *Audio Culture: Readings in Modern Music*, by Christoph Cox and Daniel (Eds.) Warner, 29–39. New York: Continuum.
- Schafer, Raymond Murray. 2009. "I Have Never Seen A Sound." *Canadian Acoustics* 37 (3): 32–34.
- —. 1977. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester (NY): Destiny Books.
- Sedighi, Mohamad. 2018. "Megastructure Reloaded: A New Technocratic Approach to Housing Development in Ekbatan, Tehran." ARENA Journal of Architectural Research 3 (1): 1–23, https://doi.org/10.5334/ajar.56.
- Shamon, Hila, Paraskevopoulou Zoe, Kitzes Justin, Emily Card, Jessica Deichmann, Andy Boyce, and William McSheaa. 2021. "Using ecoacoustics metrices to track grassland

bird richness across landscape gradients." *Ecological Indicators* 120, doi.org/10.1016/j.ecolind.2020.106928.

Shapiro, Lawrence. 2019. Embodied Cognition. Abingdon: Routledge.

- Silverstein, Michael. 2005. "Axes of Evals: Token versus Type Interdiscursivity." *Journal of Linguistic Anthropology* 15 (1): 6–22.
- Smalley, Denis. 1986. "Spectro-morphology and Structuring Processes." In *The Language of Electroacoustic Music*, by Simon Emmerson (Ed.), 61–93. London: Macmillan.
- Staub, Alexandra. 2015. *Conflicted identities: Housing and the politics of cultural representation*. Basingstoke: Taylor and Francis.
- Stirling, Christabel. 2020. "Sonic Methodologies in Urban Studies." In *The Bloomsbury* Research
- Handbook of Sonic Methodologies, by Michael Bull and Marcel Cobussen, 115–139. London: Bloomsbury.
- Suchman, Lucy. 1987. Plans and Situated Actions: The Problem of Human-Machine Communication. New York: Cambridge University Press.
- Supper, Alexandra. 2011. "The Search for the "Killer Application": Drawing the Boundaries around the Sonification of Scientific Data." In *The Oxford Handbook of Sound Studies*, by Trevor Pinch and Karin (Eds.) Bijsterveld. Oxford: Oxford University Press.
- Thompson, Evan, Francisco Varela, and Eleanor Rosch. 1991. *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge (MA): MIT Press.
- Thornton, Sarah. 2013. *Club Cultures: Music, Media and Subcultural Capital*. Hoboken (NJ): Wiley.
- Tomlinson, Gary. 2011. "Musicology, anthropology, history." In *The Cultural Study of Music*, by Martin Clayton, Trevor Herbert and Richard (Eds.) Middleton, 59–73. Abingdon: Routledge.
- Touloumi, Olga. 2018. "Sound in silence: design and listening cultures in the Woodberry Poetry Room."*The Journal of Architecture* 23 (6): 1003–1029.
- Tuuri, Kai, and Tuomas Eerola. 2012. "Formulating a Revised Taxonomy for Modes of Listening."
 Journal of New Music Research 41 (2): 137–152.
- Varela, Francisco, Eleanor Rosch, and Evan Thompson. 1991. *The Embodied Mind* . Cambridge (MA): MIT Press.

- Vickers, Paul, and Robert Holdrich. 2019. "Direct Segmented Sonification of Characteristic Features of the Data Domain." *ICAD 2019: The 25th International Conference on Auditory Display*. Newcastle-upon-Tyn: Northumbria University, https://doi.org/10.21785/icad2019.043.
- Wilson, Andrew, and Sabrina Golonka. 2013. *Embodied cognition is not what you think it is*. Leeds: Leeds Metropolitan University.

Appendix 1

This section provides links to the original field recordings.

1. The entire playlist:

http://bit.ly/42ed2yn

2. Soundwalk (Day):

http://bit.ly/3ld8esk

3. Soundwalk (Night):

http://bit.ly/3TbRrT2

4. 5th Floor Corridor

http://bit.ly/3ZKA3XZ

- Emergency Exit Stairs: <u>http://bit.ly/3LmZTgo</u>
- 6. Lift:

http://bit.ly/408t5LY

7. Rotary Sprinklers:

http://bit.ly/3JAEKxV

8. Crickets Child Cat Crow

http://bit.ly/3Lqj88H

9. White-Eared Bulbul Warming Up

http://bit.ly/3mUxeFm

10. Standby Generator:

http://bit.ly/3YNCo39

11. Fan Coil:

http://bit.ly/42ffKn1