

Sound, Science, Islam: Music as Healing in Istanbul

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This dissertation examines the revival of Ottoman-era musical healing practices in contemporary Turkish biomedical research. Linked at once to physiology, Islamic cosmology, and Galenic medicine, Ottoman music therapy is a network of practices built upon *makam*: the microtonal melodic system for structuring musical improvisation/composition in Turkish classical music. In addition to physiological and religious healing, the Ottomans practiced music therapy with individual *makam*-s, each selected for their associations with the biological processes of the body according to humoral medicine. Currently, cognitive psychologists, nursing PhDs, and physicians study the relationship between *makam* and the body in order to elucidate how our bodies perceive and react to music. Their goal is to prove that Turkish classical music and *makam* recordings can be applied in biomedical settings with measurable physiological effects. Through interviews with these researchers and close analyses of their published studies, I ask, how is the contemporary relationship between Turkish classical music, *makam*, and healing narrated by my interlocutors, and how are these narratives situated within the legacy of Ottoman colonialism in Africa and the slave trade? How do these narratives reflect 19th century Ottoman modernization and early Turkish intellectualism and politics? What can cognitive psychology tell us about sound, the brain, and its effects on the body? How do such studies enact a philosophy of the sound-body relationship? Finally, what material and phenomenological shifts occur between historical contemporary practice, and what do they tell us about musico-medical futures?

Based on fieldwork in Istanbul, Turkey from 2018-2020, this dissertation demonstrates that such revivals of Ottoman practice signal the ongoing negotiation of intersecting Ottoman-Turkish histories and the adoption of European biomedical epistemologies. I argue that studies on cognition, pain, and pregnancy harken historical frameworks of medical practice while making their own epistemological claim to the body through sound practice. Through their work, I argue that my interlocutors raise difficult questions about music as a material-phenomenological practice that encourage a critical reexamination of how we conceive of sound, the body, and medicine in Turkey and elsewhere.

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Preface

The research presented in this dissertation took place during a total of 12 months of fieldwork in Istanbul between 2018 and 2020. I draw on published sources in Turkish, as well as my own interviews conducted primarily in Turkish. All translations from Turkish are my own, including all interviews conducted in Turkish, excluding that with Azize Güvenç which was conducted in English. Following O'Connell (2013), Turkish words in the text are made plural with the addition of an -s rather than the Turkish *-lar/-ler* suffixes. All other spellings follow standard Turkish conventions.

1.0 Introduction

This dissertation examines the revival of Ottoman-era musical healing practices in contemporary Turkish scientific and biomedical research. Music therapy is a burgeoning area of inquiry in medical practice on a global scale, and in Turkey manifests as renewed interest in the musico-medical practices of the Ottoman, primarily in the 17th and 18th centuries. The *Türk Klasik Musikisi Araştırma ve Tanıtma Grubu* (TÜMATA, Turkish Classical Music Research and Promotion Group), founded by the late Dr. Rahmi Oruç Güvenç in 1976, has been instrumental in this revival through published materials and workshops that inspired much of the research I study.¹ Today, research in several fields of scientific and medical practice cite TÜMATA as the locus of knowledge on this historical practice, and use TÜMATA-produced mp3 recordings in their research.

During the course of this project, my summarization has most often been met with the question, “does it work?” This dissertation does not seek to answer this question, and instead asks, “what does it mean for this musical healing practice to “work”?” “Work,” here, presents an epistemic problem. “Work” in this question most nearly refers to a notion of the body in biological and pathological terms: the body is knowable as both discrete parts and an operation whole through the language and practice of an acultural “biology.” Illness is understood as pathology, as a deviation from the normative healthy body that must be cured. These are the foundational

¹ Due to the presence of both Rahmi Oruç Güvenç and Andrea Azize Güvenç in this dissertation, I will refer to the former as he was primarily known—‘Oruç’—save for references and citations to his work, in which case I will use his full name. I will refer to Andrea Azize Güvenç as “Azize,” as she is known.

assumptions of the biomedical institution on a global scale. My interlocutors too work largely within this epistemology, informed by their disciplinary training and institutional employment. Thus, I will leave the question of “does it work” to them, as it is *their* question. I reframe the question as follows: under what epistemological and historical-discursive framework is *Turkish classical music therapy* operating, and how does it function as a heuristic of sociopolitical conceptions of health? How does this unfold across the fields where music research is common—psychology, pain management, and obstetric care?

The published studies analyzed in this dissertation, though conducted in Turkey, are primarily published in English. In conversation in Turkish, researchers most often refer to the practice as *müzikle tedavi*, “music therapy” or literally “therapy *with* music.” For the purposes of consistency, I will use the English terminology most often employed in the studies themselves: *Turkish classical music therapy*. While this term convolutes the already-difficult task of understanding Turkish classical music’s constitutive threads—*makam*, Ottoman court music, Mevlevi Sufi musics—it also crystallizes precisely the biopolitical stakes of my interlocutors’ research and this dissertation. A more accurate or simpler term may be *makam* therapy, but I have opted against this in order to preserve precisely those tensions present in my interlocutors’ use of Turkish classical music therapy.

Drawing on ethnographic research and interviews, this project contextualizes ongoing biomedical research on the uses of Turkish classical music therapy within the genre’s history, as well as within broader historiographical narratives about Turkish/Turkic society. Ethnography is balanced with close readings of published biomedical work to illuminate the ways study design and interpretation of scientific data reflects or contradicts the values and beliefs held by researchers and physicians. Drawing on literature from feminist science studies, disability studies, new

materialism, and medical ethnomusicology/anthropology, I argue that for my interlocutors, the resurgence of interest in Ottoman musical healing offers a space of emergent potentiality; that is, this research can be understood as working towards a more capacious understanding of scientific inquiry. And importantly, this emergent potential is contingent upon belief and one's openness and attentiveness to sound.

I do this through historical analysis of the Turkish classical music therapy origin story, close readings of studies across three fields, and a theoretical analysis of study design as it reveals broader implications for the study of music therapy in biomedical settings. I home in on studies in cognitive psychology, pain management, and obstetric care. These three disciplines offer unique yet interconnected perspectives on how the body reacts to or interacts with sound, and how the processes of perception and cognition play an important role not only physiology, but also in the broader theoretical conceptualization of studies. This is to say that each study offers some version of the following question: how does the biologized notion of the body inform the approach to studying music therapy, and how do such limitations or insights impact research results?

Answering this question involves taking a new approach to the study of the sound-body relationship, one that I call *soundbody*. Indebted to the disability studies and activism terms of *mindbody* or *bodymind*, which denote the inseparability of the mind and body and disabled folks' particular experiences of these entities and their treatment within ableist society and medical systems. Drawing on recent work in music and materialism such as that of Nina Sun Eidsheim, I deploy this framework towards an understanding of the listening process as intra-active and agential for the listener. Specifically, I conceptualize of such agential listening with a spaciousness that recognizes our bodies' capacity to resist sound. In contrast to recent work in sonic materialism and ontology that positions us within compulsory sound worlds regardless of consent, desire, or

agency, I think of sound and listening within these particular biomedical studies as the ongoing negotiation between sound and listener at the level of the material body.

My theoretical model and analysis of ethnographic and published materials draws from and contributes to a diverse body of scholarly literatures briefly outlined below. Within ethnomusicology, I offer a perspective on music and biomedicine that builds on medical and cognitive ethnomusicologists work, but also reorients us towards biomedicine as itself an ethnoscience that continues to be figurative within colonialism and biopolitics. In chorus with many scholars, I support a *critical* collaborative model between humanists and scientists that draws on the strength of quantitative inquiry with a recognition of its epistemological contingency. Such a perspective is formed through extensive reading in feminist and science technology studies and disability studies, both of which illuminate the social, political, gendered, racialized, and ableist frames within scientific/biomedical research. Working within and between these various fields, I propose in this dissertation an approach to musico-medical research grounded in the body and its cultural co-constitution with the politics of sound.

1.1 Ethnomusicology in Turkey and Post-Ottoman Territories

Ethnomusicological work in contemporary Turkey contends with a complex history of caliphates and empires, the rise of Islam and its confrontations with Christianity, and the ethnonationalism of the 19th century that played a significant role in the formation of contemporary nation-states and their ongoing geopolitical and domestic policy. This politics crystallized in the early 20th century at the founding of the Republic of Turkey, and musically too Turkey was reoriented—towards its

past, towards Europe, and towards itself, with diverse internal musical practices taking on new forms and new political valences.

In Turkey, the work of John Morgan O’Connell and Denise Gill on musical style and Turkish classical music are critical for narrating here the musical development of Turkey since 1923, a project with significant sociopolitical implications in that early era and still today. Gill’s work is further formative for this project through her attention to *makam* healing and its relation to the circulation of affect within situated listening communities.² Gill’s work, together with that of Martin Stokes, is also helpful in parsing the ways that emotionality and sentimentality operate within Turkish musics and their analyses: as modes of cultural intimacy (Stokes), as expression of suffering and piety (Gill), and as a lens of Orientalism cast upon the East.

Racialization and ethnic hierarchy in Turkey, addressed in Chapter 2, are increasingly visible within the ethnomusicological literature. Sonia Tamar Seeman’s recent book focuses on Romani communities in Western Turkey and gives a long historical view of the Roms’s positionality under multiple state powers, including both the Ottoman and the Turkish bureaucracies. In conversation with many studies of Romani musicking across South/Eastern Europe, Seeman highlights the ongoing negotiation of identity vis-à-vis ethnic majorities rather than simply their marginalization. In a similar vein, musician and ethnomusicologist Ozan Aksoy has written on the negotiation between Kurdish-Alevi and Turkish musicians, as well as the consumption of Kurdish popular music in Turkey. Finally, musician-journalist Suna Lee has written accounts of Kurdish musical performance and memory politics from her own personal

² See Gill, 2017 and 2018.

performance experience. Such works build a vital foundation for future works on racialization and ethnicity in the musical traditions of Turkey.

In Turkey and the Middle East/North Africa region broadly, ethnomusicologists have addressed the complex melodic *makam* system together with questions of emotion and affect, as well as piety and religiosity. One significant example is Ali Jihad Racy, who explicates *tarab*, a descriptor of musical experience often translated as “ecstasy” that denotes the performance of inner emotional subjectivity. Denise Gill, meanwhile, locates the circulation of particular affective registers through the performance of compositions and improvisations in specific *makam*-s. Such work necessarily too draws on Kristina Nelson’s research on Qur’an recitation, which has become a staple of the literature on ethnomusicology and Islam, as well as made her a public expert on the techniques of Qur’an recitation. But beyond the complexities of recitation, Nelson’s work too touches on piety and the divine as performed through techniques of performance—recitations rules called *tajweed*, including rules about ornamentation of the melodic line, and the rules of *maqām*—as well as the several contexts within which Muslims recite or hear recitation. Such work reflects the lifetime experts dedicate to the technical mastery of *maqām/makam*, and that such technical mastery is not learned in a vacuum, but within such cultural contexts that necessitate music and emotion, among other topics, be studied together.³

³ Following Turkish conventions, I will use *makam* throughout the dissertation, save for places where I specifically refer to the transliteration of the Arabic or Ottoman as *maqām/maqāmat*. These systems, while sharing name, are quite distinct, including great difference with regard to the division of the whole tone. Turkish *makam* utilizes 9 *koma*, or steps within the whole tone (see Aydemir, 2010; Signell, 1977) whereas Arab *maqām/maqāmat* divide the whole tone into 3, following a 24-tone equal temperament system, as codified at the First International Congress of Arab Music (Cairo, 1932) (see Katz, Craik, and Shiloah, 2015; Iino, 2009, particularly on the elision of regional difference in *maqāmat*).

1.2 Medical and Cognitive Ethnomusicologies

The subfield of medical ethnomusicology has demonstrated for at least two decades the integral role of sound, music, and dance to healing practices in myriad community contexts. Several studies have documented and described musical healing as a practice tied to religion, the environment, and broader socio-politics, offering perspectives on the belief systems that sustain such practices, as well as the cultural conditions that give rise to their necessity.⁴ Medical ethnomusicologists have also documented the importance of music in activism and educational campaigns surrounding public health crises, with a particular focus on HIV/AIDS education and activism in Africa.⁵ Further studies on music therapy, often conducted by ethnomusicologists within US communities, tend towards studies music therapy's role (in aiding, not curing) in emotionality, mental health, and other cognitive-developmental disorders.⁶ This corpus offers perspectives on music and health as intimately connected and ongoing processes, favoring a nuanced analysis of the social construction of health. Further, we see that that the process of healing is not a movement between pathology and health, but a movement within community and site-specific frameworks of health.⁷

Yet this social constructivist perspective has often come at the cost of critical ethnomusicological studies within biomedical frameworks. Often, ethnomusicological studies have addressed what some might call “ethnomedicine” or “traditional” medicine. The “ethno” prefix, which remains the center of heated debate within ethnomusicology, defines itself against unmarked categories of whiteness, Europeanness, and so on. “Traditional” is a term often

⁴ See Gioia, 2006; Manaranjanie, 2013; Mills, 2007; Roseman, 1991; van Deusen, 2004.

⁵ See Barz, 2006; Barz and Cohen, 2011; Bourgault, 2003; van Buren, 2010.

⁶ See Allison, 2010; Bakan, 2009.

⁷ See Gill, 2017.

employed to refer to those things outside modernity or progress and signifies a “being out of date.” Biomedicine, in contrast, is intertwined with modernity and the historical present, and is further imbued with the future of health. Some turn to “folk medicine” to refer to those practices falling outside of biomedicine’s imperial bounds. “Folk” is not without its problems but is helpful in its demarcation of sustained practices of the moment rather than “tradition,” as well as in signifying practices that may be associated with gender, ethnicity, and class, rather than biomedicine’s sterile assumptions of neutrality (read: whiteness).

One particular study that began to address the relationship between musical healing and biomedicine is Benjamin Koen’s *Beyond the Roof of the World: Music, Prayer, and Healing in the Pamir Mountains*, which details healing practices in Tajikistan. This healing comes through music and prayer, which Koen is careful to describe as deeply interwoven rather than separate processes. In addition to ethnographic research, Koen conducts a physiological study on musical-prayer healing. Using biomedical equipment, Koen and his research partners look for measurable physical response to musical-prayer healing practices. “Stress” is Koen’s primary unit for understanding how healing occurs, defining healing as “a downward modulation of stress (distress), assessed by measuring changes in the stress indices of systolic and diastolic blood pressure, and heart rate.” Pointing to a body of biomedical research indicating that both music and prayer are proven to lower stress levels, Koen attempts the first such study to take music and prayer in tandem.⁸

As will be demonstrated in Chapters 3 & 4, “stress” has become an important descriptor in biomedical research on musical healing practices. Because it is a broad characterization of easily

⁸ Benjamin Koen, *Beyond the Roof of the World: Music, Prayer, and Healing in the Pamir Mountains* (Oxford University Press, 2011), 156-7.

detectable changes to the primary vital signs (heart rate, blood pressure, respiratory rate, blood oxygen saturation), stress relief becomes synonymous with healing. While neither Koen nor most of my interlocutors, by my estimate, would suggest that music’s ability to relieve “stress,” common parlance, is the summation of musical healing, it does represent a conceptual limit for studying musical healing traditions with the tools of biomedicine. Music’s attribution to the mind in post-Enlightenment thought skews our orientation towards music as a bodily experience—a subject ethno/musicologists spend a great deal of time studying.⁹ Likewise, leaning on stress as the primary touchstone for this research reveals which assumptions continue to define research in biomedical research on the subject. A methodical dismantling of these assumptions should thus serve as the guidepost for ongoing research and will do so in this project.

In addition to problematizing “stress,” this project makes heavy use of the “healing” as a broad heuristic encompassing epistemological assumptions about the body as an object of study. For my interlocutors working in academic or biomedical institutions, healing functions in many ways as stress does for Koen: downward modulation of stress through changes in primary vital signs. However others such as TŪMATA use healing to refer to qualitative feelings of improved health, which might be physical/somatic but also religious or metaphysical. As such, healing in this dissertation appears both as a meeting point for differentiated modalities of bodily change, as well as an epistemological litmus test for biomedicine. My usage conforms to given case studies, and necessarily shifts throughout.

⁹ This body of literature across historical and ethnographic methods has grown rapidly since the late 1990s and early 2000s. Studies on music, embodiment, and experience often find their roots in theories of gender/sexuality and race/ethnicity. Embodiment is implicated in processes of listening (Alaghband-Zadeh, 2017; Meneses, 2016), cultural knowledge transmission (Hahn, 2007; Cannon, 2021), performance (Le Guin, 2005), and the intersections thereof.

Doing so means, in part, a turn towards cognitive research in both psychology and ethnomusicology. Ethnomusicologists have taken part in research and discussion on music cognition since at least the 1970s when Carol Robertson-DeCarbo laid out the “bio-cultural problem” of music as healing and the need for deeper consideration of cultural cognition in understanding how music effects healing.^{10,11} As noted by Ian Cross, approaches to music cognition from psychology and neuroscience have often relied on outdated and acultural conceptions of music’s operability.¹² Remedies for this problem are made difficult, as cognitive studies often cannot, or will not, address the significant difference in conceptions of music and musicality and their relation to highly localized cultural constituents across global contexts. That is, they instead seek a unified understanding of music around which they can design their studies.

Cognitive ethnomusicologists such as Elizabeth Tolbert and Judith Becker have each proposed and demonstrated new methodologies that might bring together these approaches and ameliorate the problems within each. As will be shown in Chapter 3, Tolbert proposes the integration of cognition into existing ethnomusicological methods towards a more situated and nuanced understanding of how cognitive perception, preference, and emotional response are co-constitutive of cultural meaning.¹³ Becker’s related work focusing on trance suggests that we

¹⁰ Carol E. Robertson-DeCarbo, “Music as Therapy: A Bio-Cultural Problem,” *Ethnomusicology* 18, no 1 (1974), 31–42.

¹¹ Even prior to the establishment of ethnomusicology as a contained discipline, however, key figures working in comparative musicology were regarded as psychologists: Carl Stumpf, Erich von Hornbostel, and Charles Myers, for example. While ethnomusicologists have largely moved away from the type of quantitative research carried out by many psychologists, it is unsurprising that even contemporary projects such as *The Natural History of Song* continue to engage in neo-comparative musicology. See Clayton, 2009.

¹² Ian Cross, “Cognitive Science and the Cultural Nature of Music,” *Topics in Cognitive Science* 4 (2012), 668-677.

¹³ Elizabeth Tolbert, “Theories of Meaning and Music Cognition: An Ethnomusicological Approach,” *The World of Music* 34, no 3 (1992), 7-21.

“think neurobiologically about culture.” In studying trance both ethnographically and through quantitative experimentation (she uses GSR, galvanic skin response, akin to the technology of a lie detector test), Becker sought evidence for similar physiological response between Pentecostal ecstasies and “Deep Listeners”: a term adapted from Pauline Oliveros that to Becker means listeners profoundly emotionally affected by listening to music. In conducting this research, Becker speaks not simply to the individual’s experience listening or trancing, but towards larger implications for the study of music, embodiment, and interconnection in group listening/trancing.¹⁴ Further, it points towards the need for continued studies of consciousness within musical experience. Together, Becker and Tolbert highlight the continuing rifts between ethnomusicological inquiry and quantitative/scientific inquiry, rifts that arose through both disciplinary development and disciplinary protectiveness. Such rifts do not necessarily serve us politically or intellectually, and cognition is a particular area that can propel ethnomusicological inquiry.

1.3 Feminist Science Studies

This project’s theoretical framework draws largely from the body of literature that emerged at the end of the 20th century often referred to as feminist science studies. The field began largely as the history of women in science, serving to document contributions women had made to scientific inquiry and discovery that most often went unawarded, unrecognized, or misattributed (to a man). As the field turned away from “women” and towards gender, scholars sought an explanation for how science became and functioned as a masculine endeavor, one which refused the contributions

¹⁴ Judith Becker, “Ethnomusicology and Empiricism in the Twenty-First Century,” *Ethnomusicology* 53, no 3 (2009), 478-501; *Deep Listeners: Music, Emotion, and Trancing* (Bloomington: Indiana University Press, 2004).

of women and insisted on biologically determinant male characteristics that suited (straight, white, or sometimes East Asian) men.¹⁵ These methods continually uncover gendered (and racialized) bias in science, including in study design and research results. Feminist science studies thus coalesced around the cracked facade of “unbiased” science.

Londa Schiebinger notes that while there are significant advantages to feminist history of science developing “into an exacting discipline,” labeling a discipline means cordoning it off; its application and yield exist only within publications and courses explicitly ‘about’ women and gender. Gender studies is likewise framed by many in the natural sciences as auxiliary, as special interest. Schiebinger notes that while “most would agree” that students of the natural sciences must be trained in those disciplines in order to practice them, “many seem to believe that one can just ‘pick up’ an understanding of gender along the way.”¹⁶

These issues of disciplinary taxonomy and androcentric “genderless” science are colonial structures. The delineation of disciplines, most often along rhetorical lines of object, method, and epistemology, remains an ongoing colonial enterprise of the academe. In parallel terms, the masculinist paternalism of modern biomedicine and science is but a symptom of a colonial legacy of sexual dimorphism, heterosexism, and violence. This is the same colonial legacy of race science and phrenology that both masculinized and hypersexualized African women, putting Sara

¹⁵ The myth of the model minority and racial stereotypes of East Asian peoples have worked together to construct within the White imaginary a framework of Whiteness and masculinity (rationality, logic, objectivity) inclusive of East Asian persons, particularly men. This framework acts too upon science, as discussed here and in Chapters 2 and 4. Such a framework of Whiteness envelopes East Asian men within the scientific project of Whiteness, though this specifically does not implicate East Asian men in Whiteness. On “honorary Whiteness,” see Kim, 2021; on Asian American identity and the “model minority” myth, see Chou and Feagin, 2015 and Zhou and Bankston, 2020.

¹⁶ Londa L. Schiebinger, “Feminist History of Colonial Science,” *Hypatia* 19, no. 1 (Winter 2004): 234-5.

(Sarah/Saartjie) Baartman on display as “Hottentot Venus” in 1810 at European colonial exhibitions and then conducting post-mortem dissections on her in search of racist connections between Africans and orangutans.¹⁷ This is the same colonial legacy that depicts black men as both hyperaggressive and emasculated, particularly from the 20th century. Conceptualizing gender and race as isolated, discrete abstractions external to the quotidian is an ongoing act of colonialism and white supremacy.

Feminist science studies has for four decades modeled an interdisciplinary epistemology for critically examining how these legacies play out in modern scientific research. According to Sandra Harding, many studies have ignored the most pervasive issues underpinning scientific discourse, including colonialism and its taxonomies of race and gender. “Such issues,” she writes, “have been left for the disvalued fringes of science studies, represented by feminist and postcolonial accounts, and by critical accounts of the alarmingly tight fit between projects of modern science on the one hand, and of national security and capitalist expansion on the other.”¹⁸ Writing about science means writing about capitalism and geopolitics. It requires writing about colonialism in the present rather than past tense. Perhaps most importantly, it requires that we understand how contemporary lines of difference are drawn not only in history, and not only in hate speech and overt bigotry, but in the mundanity of life and science-medicine. Scholars of critical race theory and ethnic studies, as well as feminist and queer theory, have long demonstrated how discrimination relies upon institutional and interpersonal networks alike. The same is true of

¹⁷ Mara Mattosco, “What’s in a Face? Sara Baartman, the [Post]Colonial Gaze and the Case of *Vénus Noire* (2010),” *Feminist Review* 117, no 1 (November 2017): 56. See also Haraway, 1989.

¹⁸ Sandra Harding, “Interrogating the Modernity vs. Tradition Contrast: Whose Science and Technology for Whose Social Progress?” in *Feminist Epistemology and Philosophy of Science: Power in Knowledge*, ed. Heidi Grasswick (New York: Springer, 2011), 88-9.

scientific-medical inquiry: the sexual-racial harassment of BIPOC/-women in the natural sciences is bound up in heterosexism, racism, and colonialism of the fields' minutia—study design, experimentation, data analysis, and so on (see below).

Grafting feminist science studies and ethnomusicology, I turn to medical anthropology and its embrace of feminism and science and technology studies in the 1980s and 90s, respectively. Emily Martin recounts this period of great development and argues that by the mid-90s “our conclusion...was that critical anthropology and critical science studies simply *were* feminist.¹⁹” While ongoing discussions of racial exclusion and disciplinary colonial legacies in three of the major US-based music studies societies—Society for Ethnomusicology, American Musicological Society, and Society for Music Theory—would indicate there is great work to do in fostering a queer-feminist and anti-racist culture at the levels of the individual and society structure alike, there is certainly more space for these methodologies than just a few decades ago. Thus, my intention in engaging feminist science studies as an amenable (or perhaps, necessary) partner to ethnography of medicine is simply to follow medical ethnomusicologists and further unsettle assumptions around health, care, and technology as they pertain to gender. This aspect has been largely missing from the ethnomusicological literature, and my project seeks to open these conversations around critical feminist studies of music in biomedicine.

¹⁹ Emily Martin, “Grafting Together Medical Anthropology, Feminism, and Technoscience,” in *Medical Anthropology at the Intersections: Histories, Activisms, and Futures*, ed. Marcia C. Inhorn and Emily A. Wentzell (Durham: Duke University Press, 2012), 29. Emphasis in original

1.4 New Materialism, Biotechnics, and Phenomenology

Within the feminist science studies literature, as well as my use of it here, questions of experience, subjectivity, and materiality drive co-related (but often competing) modes of analysis. Following the sensory turn of anthropology that began in the 1980s, phenomenology became increasingly central to theory in both humanities and social science research. Focused particularly on the work of Edmund Husserl and Maurice Merleau-Ponty, the anthropology of the senses was in part fueled by a critique of disciplinary reliance on text and language as the medium of knowledge production—a critique that would later drive the new materialists as well. Steven Feld was particularly influential in developing the anthropology of the senses and has profoundly shaped ethnomusicology too. Developing into the 1990s and influenced by work in feminist theory, modes of sensory inquiry found root in theories of embodiment, which had developed from two decades of black feminist thought and were adopted more broadly in this moment.

Phenomenological accounts of bodily experience relied, to some extent, on the stability of the subject for whom the world appears. But feminists' focus on the body of the 1990s soon turned away from its discursive construction and towards its materiality, a move that rejects such fixed subject positions through its emphasis on emergence and vibration. While the body remains the site of sensory experience and contact, the focus on materiality denaturalizes the body as a cultural object and draws our attention to the body's position within networks and assemblages of objects. Critical of object-orientated ontologies, however, new materialism claims to move beyond flat and closed ontological networks towards open, vibratory, and ever-shifting ontologies. Such instability necessarily morphs phenomenology into an account of becoming rather than an account of being. In particular, my thinking here is influenced by and indebted to the work of Karen Barad and Chikako Takeshita, whose work crosses feminist science studies, philosophy, materialism, and

more towards an understanding of experience as intra-active (Barad), particularly in the experience of pregnancy and childbearing (Takeshita).

Such a worldview—becoming, unfolding—is key to my discussion of biotechnics. While Chapters 4 & 5 address in depth new materialism and its current use/critiques in music studies, it is important to note that my use of biotechnics and materiality do largely stem from my own theoretical commitments to phenomenology as a guiding analytical framework. As laid out in Chapter 5, biotechnics refers to the tools of listening as well as the mediation of sound and individuals' orientations towards those tools and modes of mediation. Put another way, biotechnics include sound reproduction technology but also one's sensory orientation towards that technology; they include the instruments and bodies used to produce sound, as well as the architectural features that mediate such sound and create an idiosyncratic sonic experience; and they include the affectations and onto-epistemologies that are co-constitutive of phenomenological description. While I draw attention to these biotechnics' intermaterial ontologies, I acknowledge too the role of important role of phenomenology as the process of becoming that characterizes listening.

1.5 Coloniality, Indigeneity, and Ottoman Orientalism

Even amongst some music studies scholars working closely with indigenous communities, there is an implicit tendency to associate folk healing practices with indigeneity. Folk healing is sometimes thought of as antithetical to biomedicine, and therefore incongruent with modernity, cosmopolitanism, and Europeanness/whiteness.²⁰ A direct result of colonialism, the valuation of

²⁰ See K.D. Lasanthi Manaranjanie, *Music and Healing Rituals of Sri Lanka: Their Relevance for Community Music Therapy and Medical Ethnomusicology* (Colombo, Sri Lanka: S. Godage & Brothers, 2013), 22.

systems of musical-medical knowledge produces the complex contemporary relationship between biomedicine and folk healing. Understanding how music therapy functions as a part of these medical studies is thus difficult because the Ottomans don't fit neatly into post/colonial, indigenous/settler binaries. While those analytics have been useful in the analysis of histories of power and violence, they are unable to accommodate the unique political positionality of the Ottomans as neither a settler nor a displaced/colonized people in the European colonial sense.

I use "colonialism" as a polysemy describing both a particular set of practices and mode of power exerted by one people over another, as well as a worldview and lens for the critical study of history and present. That is, colonialism is both a project and a descriptor of the project. This is particularly important for understanding the Ottoman studies literature on postcolonialism of the past two decades—a self-fulfilling prophecy of sort, by virtue of its being written primarily in colonial-interventionist languages, French or English. Understanding "colonialism" in the Ottoman context relies, to some extent, on Islamic political philosophy and its development through the several centuries of the Ottoman Empire.

The Ottomans were conquerors, certainly, emerging from a long history of competing Western Asian empires, caliphates, and sultanates. Their method of governance, particularly during the expansions through the 16th century, did not explicitly seek the erasure of local cultural practices and identity. Some less-nuanced accounts frame the Ottoman Empire as a multicultural haven free of ethnic tensions. This, of course, is not a wholly accurate representation, particularly from the 18th and into the 19th centuries when European influence on the imperial elite became a driving force behind what historians have labeled as "Ottoman orientalism" (see below). But the Ottoman method was primarily to conquer and expand territory, tax citizens to fund the empire (particularly non-Muslims), and allow conquered peoples to remain semi-autonomous so long as

they guard the new Ottoman border from invaders. This did include, however, the attempted forced settling of nomadic groups beginning in the 16th century, which was later formalized following a decree in 1689.²¹ As this system failed, the sultan attempted to tighten his grip by banning all internal migration in 1719.^{22, 23} Ultimately the imperial center shifted towards policy that sought to make the most of the empire's nomadic peoples and, perhaps incidentally, reinforced tribalism through building strong relationships with tribal elders by bringing them to provincial centers and giving gifts in order to come agreements on land usage, taxes, and security for the empire and communities.

While there is certainly no litmus test for coloniality across geographic eras and time periods, the early Ottoman Empire is an idiosyncratic case study in the culture-power dynamics of a ruler-ruled society. But the Tanzimat reforms of the 19th century begin to fall in line with European rubrics of power and colonialism.²⁴ According to Özgür Türesay, Ottoman colonialism emerged as a worldview of the Ottoman bureaucracy in order “to formulate a discourse of difference with regard to the inhabitants of the peripheral provinces of the empire.”²⁵ But it was not “religious affiliation, confessional antagonism, or political and legal discrimination that distinguishes the populations of these peripheral provinces from those of the center,” according to Türesay. In fact, Kasaba notes that new laws aimed to define the subjects of the empire by

²¹ Reşat Kasaba, *A Moveable Empire: Ottoman Nomads, Migrants, and Refugees* (Seattle: Washington University Press, 2009), 54.

²² Kasaba, *A Moveable Empire*, 69.

²³ Several additional policies tested as means of forcing settlement by assigning localized duties to traditionally nomadic groups. One such example is the *derbend* system, which enlisted members of these groups as security within Ottoman territories far from Istanbul. See Kasaba 2009, p71.

²⁴ See Kechriotis, 2013 and Türesay, 2013.

²⁵ Türesay, “The Ottoman Empire”, paragraph 5.

individual rights rather than communities.²⁶ This ideological dissolution of discrete peoples under the empire, who might define themselves by their individual histories of genealogy or language, served to make an attempt at fostering “Ottomanism” between groups. “It therefore seems,” according to Türesay, “that it would be more correct to speak of imperial—rather than imperialist—politics and attitudes leading to colonial situations in given areas and at given times.”²⁷

For the purposes of this project, then, I understand colonialism and imperialism as critical parts of Ottoman governance, at least in the political philosophy of the 19th century. This structure of governance included the regulation of medical training and practice, as outlined in Chapter 2. Traditional health systems of the Ottomans—the *darüüşşifa-s*, hospital complexes often attached to medical schools and mosques—declined in use through the 19th century, with the most famous in Edirne closed by the early 20th century. The decline of *darüüşşifa-s* was accompanied by a rise in hospitals conforming to the European biomedical model growing in usage. My interlocutors’ narratives, however, tend to leave this era blank, relying instead on Evliya Çelebi’s 17th century travelogue accounts of musical healing. As will be shown in Chapter 2, this historical lacuna goes against many narratives of Turkish classical music therapy. This might be explained, in part, by the shift towards imperialist policy that fundamentally changed medical practice in state sanctioned spaces.

²⁶ Kasaba, *A Moveable Empire*, 113.

²⁷ Türesay, “The Ottoman Empire”, paragraph 18.

1.6 Soundbody

Understanding the relationship between sound and the body—how sound is received and the body’s intra-action with sound—is central to not only this project, but also to much of the biomedical research analyzed in Chapters 3 and 4. These reactions at the level of the body have long been framed as emotional or affective, and recent work drawing on affect theory has provided key insights into what those emotions and affects *do*.²⁸ Rather than a linear or unidirectional movement of affect from performer to listener, scholars have described the way that affect engenders reciprocal shifts in both performance and listening, anchoring musical communities in a given social and political space.

There remains, however, no framework for fully understanding moments when the body *resists* sound. These ruptures can be literal—when our mechanisms for hearing cannot handle the amplitude of stimuli, such as a burst ear drum—or metaphorical—when sound cannot be aurally, or perhaps even haptically, perceived. Deeply intertwined with the transmission of affect, a resistance to sound perceived as emotional or affective is deeply rooted in the body. That is, emotional, affective, and somatic experience can each alone allow us to hear a part of a sonic event, or as Nina Eidsheim quotes from Clifford Gertz, “the thick event.”

Soundbody is my framework for joining these modes of sonic experience together as a singular mode of expression. Rather than understanding the body as being acted-upon by sound, I posit that resistance to sound requires a new mode of analysis capable of accommodating instances of withdrawal, adverse reaction, or even hostility towards sound.²⁹ Soundbody is at once

²⁸ See Gill, 2017.

²⁹ Fred Moten powerfully addresses the refusal *by objects* (distinct, but related) in the opening of *In the Break: The Aesthetics of the Black Radical Tradition*, writing the following: “The history

emotional, affective, and somatic. While one strand of perception may be amplified in a given moment, all are necessarily present even if beyond recognition.

Such a framework is necessitated by my analyses that include the emotional and affective dimensions of listening but *foreground* the somatic experience of sound through music therapy. When sound is being deployed towards effecting specific, physiological change, inequities in analytic tools become further pronounced and require modification. That is, the somatic experience has received less attention and is often treated separately from affect.. In this project, then, soundbody is a tool for getting to the root of sonic experience and understanding emotional, affective, and somatic experience as a singular entity.

I use the term soundbody in order to denote the inextricability of sound and body as modes of phenomenological experience. Our bodies are in sound and produce sound across registers exceeding our conscious perception. Deborah Kapchan too has spoken of a “sound body” (with a space) in relation to Sufi practice: “a body able to transform by resonating at different frequencies.”³⁰ Kapchan situates the sound body alongside various other frameworks for theorizing what sound is and does: sound knowledge, “a nondiscursive form of affective transmission resulting from acts of listening”; sound writing, “a performance in word-sound of

of blackness is a testament to the fact that objects can and do resist. Blackness—the extended movement of a specific upheaval, an ongoing irruption that anarranges every line—is a strain that pressures the assumption of the equivalence of personhood and subjectivity. While subjectivity is defined by the subject’s possession of itself and its objects, it is troubled by a dispossessive force objects exert such that the subject seems to be possessed—infused, deformed—by the object it possesses.” While my reference to bodily resistance to sound is not specific to Black studies, Moten’s work here (which goes on to address sound as an integral part of Black politics) is a part of the critical genealogy to which I am indebted.

³⁰ Deborah Kapchan, “Body,” in *Keywords in Sound*, edited by David Novak and Matt Sakakeeny (Durham: Duke University Press, 2015), 38.

such knowledge”; and sound affects, the body’s “materialities of feeling” (among others).³¹ Kapchan’s use of sound body installs an originary analytic within the world of sound and music studies, that the body is born into sound. Echoing the psychoanalysis of Julia Kristeva and Didier Anzieu, the philosophy of Emmanuel Lévinas, and the sound theorization of Jean-Luc Nancy, Michel Chion, Don Ihde, and Jacques Attali, Kapchan’s sound body is an alternative to the hypercapitalist and legal-judicial notion of the body: “the sound body is a material body that resonates (with) its environment, creating and conducting affect.”³²

Literature in several disciplines—from the subfields of music studies to disability studies, gender studies, media studies, and so on—shows great concern for understanding the body as both a mediator and locus of sensory experience. Recent work in sound studies, for example, has drawn on feminist materialism in order to understand sound political and identitarian agency. Eidsheim stands out here: her first book, *Sensing Sound: Singing and Listening as Vibrational Practice* argues for a conceptualization of singing and listening as “intermaterial vibrational practices” that, rather than reducing sound to a singular event, thinks about these activities as relational practices.³³ Eidsheim’s work also contributes to a body of work rooted in disability studies of music that decenters the ear as the site of listening in favor of a model more attuned to other sites of vibrational impact on the body, such as our bodies’ largest organ: skin. A formulation of listening from the surface of the skin opens new listening space and importantly draws attention towards the body where most sound waves are actually received.

³¹ Deborah Kapchan, “The Splash of Icarus: Theorizing Sound Writing / Writing Sound Theory,” in *Theorizing Sound Writing*, edited by Deborah Kapchan (Middletown, CT: Wesleyan University Press, 2017), 2; Deborah Kapchan, “Body,” 39.

³² Deborah Kapchan, “Body,” 41.

³³ Nina Eidsheim, *Sensing Sound: Singing and Listening as Vibrational Practice* (Durham: Duke University Press, 2015), 5.

Complementary to Eidsheim, Steven Connor focuses on how the body is created through voice and sound. Connor's "vocalic body" posits that the autonomous operation of the voice has such a strong proclivity towards embodiment that, even in the presence of the sounding body, a vocalic (imaginary) body is produced by the listener. Taken together with Eidsheim's work on vocal timbre and race, we can understand these vocalic bodies as being produced within frameworks of gender, race, and disability, and are thus largely based on preconceptions about who has what type of voice, rather than on the voice itself.³⁴

Each of these heuristics is helpful in studying how bodies produce sound, are created through sound, and interpreted through sound. Drawing on these tools, soundbody is particularly interested in engagement and intentionality, the directed use of sound to achieve a specific corporeal goal. Engagement and engaged listening arise in interviews with both psychologists and obstetric researchers as important factors in planning and administering music therapy. Engaged listening, and its implicit constitutive "dis-engaged," map onto the active/passive therapy binary explained to me by nearly every interlocutor, and necessitates attention be given to sound and the body not as separate entities but as mutually entangled agential beings.

³⁴ This can be particularly important for marginalized groups like queer folks, as noted by Yvon Bonenfant. Bonenfant argues that vocal timbre can be understood as touch on the skin, that we can feel the vocal timbres of others. Timbre is difficult to pin down, to explain, and to describe, and thus lends itself well to post-structuralist ideas of queerness. Citing Connor's notion of the vocalic body, Bonenfant argues that in queer vocal production, or searching for a queer voice, the vocalic body is critical. For the queer listener, a virtuosic ear develops in order to locate queer vocalic bodies. All of this, however, is grounded in somatic, tactile, and material practices for Bonenfant. By thinking vocal timbre as touch, listening to the voice "becomes the act of paying intense somatic attention to the ways that our bodies engage with the sonic stimuli around them, in order to decide which emanators of vocal sound to gesture toward, which of these to want and to seek, and in which baths of sound to swim." See Yvon Bonenfant, "Queer Listening to Queer Vocal Timbres," *Performance Research* 15, no. 3(2010): 78.

This knot of soundbody relies heavily on disability studies and activism, an area that has long advocated for conceptualizations of the mind and body as not separate but intimately connected and reciprocal entities. Eli Clare notes this in the introduction to *Brilliant Imperfection: Grappling with Cure*, writing the following:

I followed the lead of many communities and spiritual traditions that recognize body and mind as not two entities but as one, resisting the dualism built into white Western culture. Some use the word bodymind or mindbody; others choose body/mind or body-and-mind. I settled on body-mind in order to recognize both the inextricable relationships between our bodies and our minds and the ways in which the ideology of cure operates as if the two are distinct—the mind superior to the body, the mind defining personhood, the mind separating humans from nonhumans.³⁵

Clare draws out the colonial dynamic that drives the mind-body separation, making the important distinction that disabled people are more deeply affected by colonial structures, especially under a medical-industrial complex whose underpinning lies in white supremacy and Euro-colonial formulations of health.

These conditions are critical in the way that I use soundbody as a tool and signifier for thinking through the ways in which European imperialism and Ottoman shifts towards European medical practice in the 19th century imported a new conceptualization of mind, body, and sound. The imperialist politics of the Ottomans, as explained above, were surely influenced by the European colonial framework as nationalism swept through Eastern European Ottoman territories in the 19th century. This Western conception of nationalism presents an analogous threat to the bureaucracy as the *millet*, a social organization of communities on the basis of shared religious belief. The Ottomans had attempted to address this well before the 19th century through a shift towards what we now call Ottomanism, or Ottoman orientalism: disintegrating the *millet* in favor

³⁵ Eli Clare, *Brilliant Imperfection: Grappling with Cure* (Durham: Duke University Press, 2017), xvi.

of an Ottoman imperialism under which the bureaucracy recognizes individuals rather than collective senses of belonging separate from the empire. These seismic shifts in geopolitics and political philosophy changed health and medicine, particularly in Istanbul and other major cities. Discussing health, sound, and the body in the post-Ottoman/Turkish context thus requires a framework for parsing how sound, body, and mind are singularly employed in research and therapy.

This takes the form of using soundbody to discern how engagement and engaged listening are both informed by mind-body/sound-body dualism *and* offer significant potential for undoing these assumptions in biomedicine. For the patient receiving music therapy, this takes the form of discussing music preferences and helping the doctor to find something suitable (within some parameters, as discussed in Chapters 3 and 4). For the physician, this means balancing patient preference with their own ideas about ideal musical choice specifically framed by medicalized discourse—that is, music that is “most appropriate” or “best suited” for medical application. As demonstrated in this project’s examples from both psychology and obstetrics, these decisions are made under a biomedical rubric of care and health that offers perspective on Turkish medical institutions in the historical present as a product of multiple (often conflicting or contradictory) histories. Soundbody gets to the core of these heterogenous practices by creating space to address multiple histories of musico-medicine at once.

1.7 Chapter Summaries

Chapter 2 of this dissertation, “Writing Turkish Musical-Medical History,” is an overview and critical analysis of Turkish historiographical method and trends in the literature. Born of a

discursive trend in my ethnography—interlocutors repeatedly narrating music therapy’s development in Turkic society for 6000 years—this chapter builds a rich contextual basis for ethnography with an account of how my interlocutors view and understand the Ottomans. This is particularly important in the era of the AKP, the Islamist-leaning party who has held a majority of Turkey’s elected governmental seats for nearly two decades.³⁶ The AKP has overhauled Turkish policy, particularly those rooted in Kemalist secularism, and has supported the revival of Ottoman cultural forms, including Janissary (*yeniçeri*) military bands (*mehter*) and Ottoman-themed television shows. In recent shows of their Islamist proclivity, the AKP has converted the Aya Sofya (the country’s most-visited tourist destination to the tune of several million per year) back into a mosque after a century functioning as a museum. A powerful and poignant symbol of religious conflict and several transfers of power, the Aya Sofya has been an important symbol for the Turkish state since 1923.³⁷ A similar project has begun at the Chora Museum (Kariye Mosque), a Greek Orthodox Church recently fitted with mechanically retracting covers for the Byzantine era mosaics so that prayer can take place without iconography. While the AKP did not invent this tale of 6,000 years of history, their political agenda continues to benefit from such tales that we can trace to the early Republic period, such as the Turkish History Thesis and the work of the *Türk Ocakları*.

In the context of this neo-Ottoman revival, Turkish classical music therapy functions quite differently than the aforementioned projects. Rather than attempting to reinvigorate a nationalist pride in the Ottoman past—one which was deliberately stamped out in the early Republic period—

³⁶ Adalet ve Kalkına Partisi, Justice and Development Party.

³⁷ Eve McPherson, “Political History and Embodied Identity Discourse in the Turkish Call to Prayer,” *Music & Politics* 5, no 1(2011): 1-20.

this revival offers a worldview wherein the relationship between medical and musical practices might be understood in different terms. By parsing Ottoman modernization efforts and their constitutive processes of racial science, I show how the Ottoman legacy of slavery, and its orientation towards East Africa in particular, are at play in contemporary narratives of musical development. Finally, I argue that a focus on positivism and Turkey's massive collection of Ottoman documentation, combined with current narratological politics such as the Turkish History Thesis, sustains a teleology that stretches 6000 years and 2500 miles from Central Asia to modern Turkey.

Chapter 3, "Sound, Psychology, and Pain" examines research in psychology and pain management in order to elucidate the relationship between music, culture, cognition, and somatics. With music cognition on the rise in music studies and the natural sciences alike, the implications of cognitive research for clinical application are crucial to this project. Drawing on studies in Turkey and interviews with researchers, this chapter begins by laying the groundwork for how cognitive researchers conceptualize of listening and the potential for sound to effect change in the body. Providing just one link in the chain, as one researcher noted to me, cognitive psychology leads into clinical applications of Turkish classical music for pain management and other conditions linked to the nervous system. Cognitive psychology is a rich site for the study of music's relationship to medicine and the configuration of health, the mind, and the body. In the Turkish context, the well-known psychologist and trained musician Dr. Adnan Çoban has written extensively on Turkish classical music therapy, and his work was cited to me by many. But through interviews with Çoban and others, I problematize the centrality of the mind as the locus of musical affect/effect and demonstrate how this isolation of the mind has significantly shaped research beyond psychology. In particular, psychology provides a mode for understanding how "stress"

modulates in meaning and usage across disciplinary contexts, as well as its importance in denoting particular physiological events.

Chapter 4 of this dissertation, “Obstetrics,” examines ongoing research on the uses of Turkish classical music therapy for pregnancy and childbirth, particularly with high-risk pregnancies. Obstetric care in the Turkish context grows from a unique history of obstetric care in the Ottoman era, with significant advances made in surgery and midwifery. Childbirth and childcare were also particular topics of interest at the end of the 18th century when *Turkish classical music therapy* was codified, and the 19th century brought centralization and reform to the education, certification, and observation of midwifery in the Ottoman Empire. Contemporary biomedical researchers draws on these histories in search of physiological evidence for music’s efficacy in treating pain and stress during late-term pregnancy, especially women experiencing preeclampsia. However, others have claimed that beyond the biomedical context, Turkish classical music therapy might have an effect beyond pain and stress to include procedures such as turning a breached fetus in utero. In order to understand these two case studies, I draw on work from feminist science studies and employ my framework *soundbody* towards an understanding of how assumptions about mind-body and mother-fetus dualism underpin study design and belief systems alike, as well as how the case studies themselves offer a glimpse of a more capacious biomedical epistemology that takes folk healing as inextricable from other modes of healing and health.

Chapter 5, “Sonic Materialism and the Biotechnics of Listening” pulls together threads from the preceding chapters and offers a feminist-materialist critique of music’s use in biomedicine. Studies from both psychology and obstetric care primarily use mp3 recordings and headphones for patients’ participation in Turkish classical music therapy. In addition to simple anachronism, this formulation ignores the fundamental differences between listening to music live

versus through headphones, principle among them the shift in materiality from live to recorded sound. Drawing on work in sound studies, particularly recent developments in the study of sound's materiality, and phenomenology, I argue that sound and music therapies, such as those examined in this project, function as a biotechnic, thus reconfiguring the relationship between sound, health, and the body. Understood in this way, music therapy and other sensory healing practices become unbound from top-down labels such as "folk healing" that deny the agency of sound, and the agency of practitioners who believe in and use such therapies.

1.8 COVID-19 and its Impact on this Dissertation

As of March 13, 2020, there were only two confirmed cases of COVID-19 in Turkey. The first was a patient who recently returned from Europe on March 9 and was diagnosed and quarantined on March 11. The family and close friends of this patient were too placed under immediate quarantine, and days later the second tested positive. From what others told me, it seemed as though there was great skepticism about the true number of cases, as was occurring around the world in these final moments before global lockdown. This was particularly poignant in Turkey and in cities like Istanbul, where one of the world's largest refugee populations is left vulnerable due to homelessness, food insecurity, and lack of medical care. Like other countries, Turkey banned incoming flights from several countries with early outbreaks, including China, South Korea, Iraq, Iran, and Italy. Outgoing flights too became sparse.

According to a close friend who worked as a neurologist at a hospital near my home, Turkey did not require preconditions of travel or contact for testing. He was careful to emphasize, however, that the test was not a part of routine labs and is based solely on the patients' symptoms.

Combined with a shortage of tests in Turkey, these extreme preconditions for testing came to define the early months of the COVID-19 pandemic on a global scale—a condition that was ultimately reversed as researchers learned about transmission.

On this same day, Fulbright researchers around the world received notification that the program would end, and we were either to return home or to remain without the logistical assistance of the program. When I left Turkey on March 18, Turkey recorded their first death, Greek and Bulgarian land borders were shut, and cafes were closed for the first time. The vast majority of flights were cancelled following the European Union travel restrictions two days prior, so only those of us with direct flights to the US remained. Hundreds of people, however, were crammed in the airport guest services area following the last-minute cancellation of a flight to Algeria. Those passengers were ultimately forced to spend weeks in an empty dormitory.

Given the emergence of a situation that none could have predicted, it was quite the conundrum for a medical ethnomusicologist: what is my ethical responsibility towards myself and my interlocutors under the conditions of extreme viral contagion? At what point does the “medical” supersede the “ethnomusicology,” become a force majeure, illuminating the moral underpinnings and methodological limits of fieldwork practice?

Conducting interviews with physicians is a peculiar thing in the best of times; much of the time, physicians and scientists ask very different questions in their work than we do as ethnomusicologists. In the setting of an interview, this becomes a game of mutual balance: asking questions that are specific to the data and design of an interlocutor’s research and slowing broadening the scope, testing the boundaries of how they might conceptualize of their own research. Several times during early interviews, when my line of questioning became too broad, or when I extrapolated in a way that didn’t make sense to an interlocutor, I was met with rich

disagreement. In moments when interlocutors felt that I misunderstood—due to language, disciplinary difference, any array of combinatorial factors—they became quite direct, and most often, incredibly clear about the implications of their research for my broader questions on the relationship between music, medicine, and Ottoman/Turkish history.

But under a global pandemic—particularly in those early periods of viral spread when so little was known, and the full extent of what was to come couldn't be seen by most of us—I felt a greater duty to “health”: the health of my interlocutors and their loved ones; the health of those around me in my apartment complex and on public transportation; and the health of those closest to me in Istanbul. “Will I get my data? Will I get the necessary interviews?” was no longer of concern, even as I was finally gaining access to networks of researchers that evaded me since I began preliminary fieldwork in 2018.

While my research circled health and followed its seemingly limitless strands of thought and practice, a global pandemic brings into sharp focus the material conditions illness and disease. And this focus represents both my biggest concern and most difficult restriction in this project's methodology: I am unable to speak to patients who participated in the published studies analyzed here. Due to the anonymous nature of biomedical research, those analyzing data do not know any personal information about study subjects. My interviews were thus limited to those designing the studies: the rationale for the particularities of subject eligibility, measures taken before, during, and after the study, and how the analysis was conducted. My own analysis of these studies, particularly in Chapters 3 and 4, thus draws on a limited perspective. In the afterlife of this project, I hope to work collaboratively with these researchers during the study in order to be able to speak to research subjects as well as get a more complete inside look at the process of study design and ethical approval in Turkey.

During my unexpectedly short fieldwork experience, I was able to conduct interviews with the majority of key players in the realm of Turkish classical music therapy. That includes Azize Güvenç, for instance, who heads TÜMATA, the organization that was surely the catalyst for the growth of biomedical research conducted in the past two decades. Other researchers, such as Adnan Çoban, have written foundational texts that themselves became recurring characters in the narrative of musical healing practice. When fieldwork ended and I returned to the US, I cancelled roughly a dozen interviews I had scheduled for the following month alone, and these people too became inundated with the drastic shifts of daily life under quarantine, with the difficulties of remote work compounded by duties in the home. It thus took several months for all of us to adjust to our difficult new world before I was able to conduct a fraction of those cancelled interviews via Zoom, and I was able to spend roughly one month in Istanbul during Fall 2020 attempting to wind down this project. No such luck.

This dissertation thus relies on a relatively small set of ethnographic data but is nonetheless a rich study in the work of truly dynamic researchers and amateur musicians. This data contextualizes my close readings and analysis of their published works, and provides the critical, if implicit, humanity behind the highly technical mechanisms of biomedical research. This method is fitting insofar as this project was not conceptualized as (and could not feasibly be executed as) a deep ethnographic study of a musicking community. My interlocutors' primary engagement with one another is citation—itsself a fascinating insight into epistemology—and they often do not have personal relationships. I likewise could not be in the hospital with the nurses who collect research data due to the timing of my fieldwork, though this remains an exciting potential for future work.

2.0 Writing Turkish Medical-Musical History

2.1 The Genesis of Music Therapy

This chapter addresses the origin story of Turkish classical music therapy. Many interlocutors shared this story in interviews and published it in their research.³⁸ It is the central character of the contemporary narrative of music therapy development in Turkey and goes as follows.

Approximately 6000 years ago, the Turks of Central Asia were known to heal the body through myriad sensory therapies, chief among them music and dance. And while we do not have record of this music, we do have today images of dance. For example, the rock drawings in Qobustan, Azerbaijan (Figure 1). These drawings of dance carry with them a silent, implicit record of music-making, and offer up imaginative ideas about the relationship between sound and the body (but more on this later). *Baksı* dance, as it is referred to, comes to Eurasia from the shamans of Central Asia, travelling across the steppe with the migration of the Turks. From contemporary Turkmenistan and Azerbaijan into Anatolia, contemporary Turkey, these societies each develop their own musical systems and forms but remain themselves a link in the etiological chain to Central Asia as a source of historicity.

³⁸ Much of this work is foundational through the remainder of the dissertation and is further explicated in the remainder of this chapter as well as subsequent chapters. Some such studies provide explicit accounts of this history, and others small pieces. A remaining few are influenced by and cite such studies. Examples include, Ak, n.d.; Altınölçek, 1998; Bekiroğlu, Ovayolu, Ergün, and Ekerbiçer, 2013; Çetin, Tan, and Doğan, 2017; Çoban, 2005; Erdal and Erbaş, 2013; Erer and Atıcı, 2010; Gençel, 2006; Güvenç, 1985; İşeri, Güney, Güvenç et al 2014; Kaya and Kömürcü, 2017; Kılıç, 2016; Kömürcü, 1992; Özer, Karaman, Arslan, and Güneş, 2013; Sezer, 2013; Somakçı, 2003; Toker, 2019; Toker and Kömürcü, 2017; and Uçaner, 2013.



Figure 1: Rock Relief in Qobustan, Azerbaijan

Contact with the Persians and Arabs of the Eastern Mediterranean meant a mixing of musical style, including the adoption of Arab *maqām* and its associations with the humors and Galenic medicine, particularly during the Golden Age of Islam (mid-8th through 13th centuries). Syriac-speaking Christians translate the major Greek texts into Syriac, and then into Arabic, which form the basis of germinal Arabic texts on medicine, such as Ibn Sina's *al-Qānūn fī'l-Tibb* (The Canon of Medicine, 1025). These texts lay the foundation for the development of musical-medical practice in the region as al-Farabi, drawing on Ibn Sina, codifies relationships between 12 primary *maqām* and humoral medicine. The Seljuks practice this medicine at their *bimaristan*-s and *darüşşifa*-s (hospitals) in the Eastern Mediterranean (Şam) and into central Anatolia (Amasya, Kayseri), a practice which then is taken up by the Ottomans as they establish their empire in northwestern Anatolia, expanding to former Seljuk territories and other *beylik*-s (small

principalities) established as the Seljuks decline. From a *beylik* along the Marmara Sea to an empire spanning three continents, the Ottomans developed and perfected these *makam* healing practices, building on Seljuk, Arab, Persian, and old Turkic knowledge and codifying the Turkish *makam* system's musical properties at the end of the 18th century in the work of Gevrekzâde Hafız Hasan Efendi, the chief physician under Sultan Abdülhamid I.³⁹

Or so the story goes. The period between roughly 1794 and contemporaneity remains untouched in these narratives, the period wherein Ottoman bureaucracy and institutions such as medicine underwent drastic reforms (*Tanzimat*). While some Ottoman *dariüşşifa*-s such as the Beyazıt II complex in Edirne operated late into the 19th century, there are few available sources documenting how long music therapy practice occurred here, and this remains a fruitful site for my own future research. But for my interlocutors, who are academic researchers and health care professionals, this historical gap is relatively unimportant. Few if any claim to be reviving Ottoman musical healing in its exact historical form, particularly with the medical advancements of the 20th and 21st centuries. Instead, they tell me, music offers an alternative, holistic approach whose application might serve to augment existing clinical standards of practice. It might lift patients' spirits, improve their moods, and even help relieve pain without the side effects of pharmacological medicine.

In their efforts to carry on this legacy of practice, practitioners and researchers also take on the crucial project of reinscribing a Turkic musico-medical history that functions as a discursive tool for the construction of a musico-medical lineage, a teleology that places contemporary Turkish

³⁹ Pınar Somakçı notes that the 18th century is considered the age of Turkish music's maturation, but must likewise be considered a continuation of a development begun in the 17th century (2018). Cem Behar likewise notes that the contemporary art/classical tradition in Turkey can be traced to the 17th century (2015).

music therapy research at the apex of a trajectory that spans nations, empires, space, and time. This story is continually retold and has become the dominant narrative of musical healing history in Turkic society. But “dominant” doesn’t necessarily mean “well-known.” On the contrary, my day-to-day life in Istanbul included surprised and confused reactions to my dissertation topic, even by close friends of my age who recently completed medical school and had compulsory training in the history of medicine. But for those with an investment in this history—that is, more than a mere cursory knowledge or familiarity—the particular teleology from Central Asia to contemporary Turkey is foundational. The retelling of this story reinscribes etiological claims common in Turkey, including claims to Anatolia as the birthplace of civilization (thousands of years prior to the arrival of Turks), as well as to Central Asia as being their former homeland prior to the conquering of Anatolia. Each retelling etches deeper into the stone upon which they stand.

But this story does something else, something quite unique in Turkey: it creates a linearity inclusive of the modern nation state, its Ottoman past, *and* pre-Ottoman Turkic societies. I found myself constantly struck by the breadth and scope of the history being recounted in this story, particularly in light of Turkey’s troubled relationship to the Ottoman past. The Early Republic Period of Turkey (1923-38) was characterized by dramatic shifts away from Islam and the empire. Mustafa Kemal Atatürk and the leaders of his new state worked tirelessly to stamp out remnants of the Ottomans in Turkish society and culture: the government and public sphere were established as staunchly secular (1924); a language reform (begun 1928) rid the language of many Arabic and Persian words in favor of “original Turkish” or European vocabulary, with the writing system converted to the Latin alphabet through a massive reeducation campaign headed by the new Turkish Language Association (*Türk Dil Kurumu*, founded 1932); and for a period (1932-50), the

call to prayer was translated into Turkish and Arabic recitation was outlawed.⁴⁰ While the Turkish recitation of the call to prayer was short-lived, the erasure of the Ottomans through other means underpinned Turkish society for much of the 20th century.

Under the rule of the Justice and Development Party (AKP) for the last two decades, a shift towards Islamist governance has included revigorated interest in the Ottomans, from revivals of Ottoman cuisine and performances of the Ottoman janissary band (*mehteran*) to political interest in Ottoman political figures previously disgraced or otherwise not highlighted in Turkish education (Sultan Abdülhamid II, for example). Neo-Ottomanism, as a constellation of political, religious, and cultural ideologies, hovers above the primary topic of this project: Ottoman *Turkish classical music therapy* and its revival in contemporary biomedical research. While interest in Turkish classical music therapy among amateur musicians and independent organizations began in the 1980s, it has only been since the early aughts that researchers in Turkey have taken this in as a central part of their academic research.

In light of these shifts in political ideology, the story above is both unsurprising and endlessly fascinating insofar as it captures the particular moment of the political and musical imaginary. It would be easy to simply store the revival of musical healing on the shelf of Neo-Ottomanism and move on, but in telling this particular story in this particular way under this particular political regime, my interlocutors and other scholars are taking a new perspective on nationalist historiography and its guiding principle.

By bridging the modern history of the Republic, Ottoman history, and pre-Ottoman Turkic history, even in spectacular and speculative fashion, my interlocutors engage in a mode of

⁴⁰ Eve McPherson, “Political History and Embodied Identity Discourse in the Turkish Call to Prayer,” *Music & Politics* 5, no. 1 (2011), 1-20.

historiography that serves their present goals: to root contemporary musico-medical practice in a lineage (teleology) of Turkic healing practices. This is not to say they are without evidence, as their sources and historical accounts are essential, if understudied, parts of Ottoman medical history. However, this chapter will demonstrate that these sources and accounts serve only as a superficial backdrop to their ongoing research. My own project here does not provide some corrective historiography that fills this gap, but rather demonstrates how “history” functions as a character itself in the ongoing conversations and research that my interlocutors conduct. History, even without a root in the texts cited (Gevrekzâde) or training in the language (Ottoman) is key to the discursive construction of music therapy practice in Turkey.

Writing history in this way must also be contextualized within trends of Ottoman historiographical practice in the early 20th century. According to Mehmet Mert Sunar, some of the most influential early historians of the early Turkish state approached the task of narrating the Ottoman Empire through focus on the incredible documentary of the Ottoman bureaucracy.⁴¹ This project, during the early years of the Republic of Turkey, included a great deal of transliteration (Arabic to Latin script) and documentation of items’ original locations. Suraiya Faroqhi notes that some Ottomanists, particularly in Turkey, work from the perspective that the entire bodies of critical works—tax registers, foundation accounts, and so on—in Ottoman must be explicated before beginning the work of a broader historiographical analysis.⁴² This chapter thus centers the friction between document-focused and speculative *longue durée* histories as a site of inquiry for

⁴¹ Mehmet Mert Sunar, ““When grocers, porters and other riff-raff become soldiers:” Janissary Artisans and Laborers in the Nineteenth Century Istanbul and Edirne,” *Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 17, no 1 (2009), 176.

⁴² Suraiya Faroqhi, *Approaching Ottoman History: An Introduction to the Sources* (Cambridge: Cambridge University Press, 1999), 38-9.

explicating how practitioners of Turkish *classical music therapy* view themselves and their practices. Such an account illuminates teleologies of musico-medical development that do not account for centuries of contact between Turks, Europeans, and the very peoples of their own empire, including Arabs, Kurds, Persians, and more.

I begin by examining how genealogy and contact as methodologies for studying the history of medicine (and music) operate within and produce difficult concepts such as biomedicine, modernity, Westernism, and so on. Drawing on theory and method from historians, I offer an explication of how these terms and concepts will be used in this chapter and dissertation, as well as an acknowledgement of their inherent problems and limitations in this study and others. I do this, in part, through a brief explanation of Ottoman reforms that occur during the late 18th and 19th centuries, when Sultans Abdülhamid I, Selim III, Mustafa IV, and Mahmud II. The *Tanzimat* period of Mahmud II's reign is particularly important for understanding how to the Ottomans responded to the continued loss of territory and encroachment of ethnonationalism in the last 70 years of the empire.

I then provide an overview of several overlapping histories embedded within the music therapy origin story. In both interviews and published texts, Turkish scholars not only study Turkic/Central Asian history, but they offer too stories about “primitive tribes” in sub-Saharan Africa in contrast to other societies in antiquity. The ancient Greeks, for example are positioned as main characters in the story of music therapy, but as these researchers reach further beyond the Mediterranean, they seem to point to the type of universal claims of humans' inherent musicality that appear in some modern cognitive psychology and neuroscience (see Chapter 3). Beyond serving to provide further cross-cultural evidence of music therapy's ubiquity and efficacy, the perceived distance (in both space and time) between Turkey and sub-Saharan Africa acts

discursively to produce difference through the Ottoman orientation towards East Africa in particular. An examination of the relationship between the Ottomans, Turks, and Black East Africans is tantamount to fully understanding why Africa reappears during my research.

Examining the Turkish literature, the final section argues that the Turkic origin story reflects, in part, the positivist method that characterized Turkish-language Ottoman historiography during the early decades of the Republic. With millions of archival documents housed in the state Ottoman archive (formerly the Ottoman Archive of the Prime Minister's Office, *Başbakanlık Osmanlı Arşivi*), such a positivist methodology led to Ottoman history being narrated first through the “Great Heroes” and the voice of the bureaucracy during the early to mid-20th century. Contemporarily, my interlocutors' story does not generally include specific citation, save for mention of a handful of historical characters. But it is precisely this combination of early 20th century positivism and a contemporary speculative history that form a feedback loop; with each character functioning as a verifiable historical node—a person, place, and moment in time with a known history—the rest gets filled in (1794-present).

2.2 Genealogy versus Contact in Medical History

In this section, I will establish a foundation for working with convoluted terminology and their deployment in discussion of historical method. In particular, terms such as “Europe,” “biomedicine,” “modernity,” and “Western” are particularly difficult to parse given their various usages across disciplinary boundaries. But they require a careful explanation in order to more fully frame the work of this dissertation. Scholars in the history of science/medicine, postcolonialism, and feminist science and technology studies have provided a useful ground from which I work.

Addressing how these concepts are co-constitutive of the politics inherent to methodology and theory clarifies their role in the actual narrativization of the history of science and medicine.

I begin by addressing genealogy as a central concept to the various intersecting disciplinary histories. Genealogy has played a prominent role in the research for this dissertation. Of course, the story that spurs this chapter is an enactment of genealogy, a claim to lineage. And genealogy is an important tool for work in both the present and past but is only one of many tools available to the researcher and runs the risk of sliding into teleology. In sub-fields such as the history of science and medicine, the same problem appears in different terms: as “circulation.” For historians of science and medicine, the Scientific Revolution poses a significant problem to escaping Eurocentrism, because the genealogy of modern biomedicine necessarily includes the scientific developments of Europe during and after the early modern era. Circulation refers of course to the movement of knowledge across the globe through the process of colonization. Post-colonial critiques from the position of colonized peoples describe the violence of medical imperialism and the suppression of traditional healing practices. But can this story of circulation be told differently? How can the interaction of local medicine and biomedicine be told without centering Europe?

Of primary concern is what Kapil Raj characterizes as the “Where?” question of science. Where is science done? Where are contributions to scientific knowledge occurring? As a universalizing concept, science and its rationality, objectivity, and verifiability are positioned as the Truth of matter. Raj notes that histories of science focused on non-Western locales “mainly focused on bringing to light the contributions of non-Western cultures to the “ocean of modern science,” on the one hand, and on the diffusion and response to modern science, on the other.⁴³

⁴³ Kapil Raj, “Beyond Postcolonialism...and Postpositivism: Circulation and the Global History of Science,” *Isis* 104, no 2 (2013), 339.

Asking “where” science happens homes in on both the receiver’s active processes of negotiating science, and the remaining assumption that science “is the embodiment of the basic values of truth and rationality, the motor of moral, social, and material progress, the marker of civilization itself.”⁴⁴ Getting away from this idea means undermining Science, the perfected European system for understanding the world “as it is,” and moving instead towards science as a culturally and geographically situated practice.

Such an approach is still largely relegated to those specializing in particular areas, such as anthropologists (and ethnomusicologists!) or historians. And as long as the core of the philosophy of science remains rooted in a Euro-centric model, so too remains the center-periphery model that grounds genealogy in Europe and “circulation” as less circular and more monodirectional. This is to say that if scientific inquiry outside of Euro-American laboratories is seen as contributing to an “ocean of modern science,” as Raj calls it, then this ocean in Raj’s sense is still an ocean whose tides touch only Europe and the United States. This is precisely the problem of tracing a genealogy of the history of science, and quickly becomes the problem of a circulation model too. Instead, Raj notes, circulation cannot simply mean transmission or dissemination in such linear terms, but rather “the processes of encounter, power and resistance, negotiation, and reconfiguration that occur in cross-cultural interaction.”⁴⁵

“Cross-cultural” and “circulation” necessitate a degree of locality to become meaningful descriptors—a “where.” And in describing such localities, the temptation is certainly to construct a map of intersections and meeting points. Carla Nappi describes genealogy, too, as “a way of

⁴⁴ Kapil Raj, “Beyond Postcolonialism...and Postpositivism,” 340.

⁴⁵ Kapil Raj, “Beyond Postcolonialism...and Postpositivism,” 343.

treating time as a sort of space.”⁴⁶ How can we think about locality, Nappi asks, without the Scientific Revolution too becoming a locality and ultimately staking a claim once again to the center? Similar to Raj, Nappi thinks through encounter and contact as modes of inquiry that get away from genealogies and origin stories of science. Because even circulation and encounters “occur within bounded spaces,”⁴⁷ these modes of thinking tend to stabilize categories that fluctuate and shift—Nappi gives the examples of languages, geo-political entities, and objects.⁴⁸ Instead, Nappi posits, histories of science might work through a method of juxtaposition, a way to “ride the thematic and conceptual waves that emerge and recede from a rather fluid landscape.”⁴⁹ And while she refers to textual evidence and the archive of primary sources, such an approach to the locality and materiality of historical artifacts is clarifying in oral histories and the contextual specificity of who shares them, where, and under what conditions.

Another lens for thinking through modernity in this project is, following Sandra Harding, the relationship between substantive and temporal modernities. In particular, Harding draws out the tension between modernity and tradition, which can be helpful for thinking through the types of healing practices discussed in this project relative to the project of biomedicine (more below). “Early modernity” often marks the 16th and 17th centuries as a conceptual pivot towards a worldview defined in part by scientific advancement. Modernization theorists of the 1950s, according to Harding, elide modernization with Westernization, and expected that efforts to disseminate or transmit Western rationality to what became known as the Third World are the only

⁴⁶ Carla Nappi, “Paying Attention: Early Modern Science Beyond Genealogy,” *Journal of Early Modern History* 21 (2017), 461.

⁴⁷ Kapil Raj, “Beyond Postcolonialism...and Postpositivism,” 345.

⁴⁸ Carla Nappi, “Paying Attention,” 463.

⁴⁹ Carla Nappi, “Paying Attention,” 465.

path to such singular modernity. Through aid projects and institutions in the mid-20th century, their version of Western modernity would have a homogenizing effect on global social organization.

Such temporal organizations are built upon substantive modernity:

the emergence of a differentiated social structure with political, economic, religious/moral, and educational (including scientific) institutions which are independent of family structures; the separation, therefore, of public and private spheres; and such democratic institutions as representative government, free elections, and a free press. Such conceptions also focus on a secular worldview, the idealization of universal instrumental rationality, and a social orientation toward the future rather than the past.⁵⁰

These ideals have yet to be fulfilled anywhere in this world, even under the most exceptionalist of worldviews. And the rise of right-wing populism on a global scale shows us that this particular understanding of modernity cannot serve the neoliberal capitalist economy that dictates governmental action (see the end of Chapter 3).⁵¹

But we can grasp modernity through Harding's apt description: as being haunted by the specters of the feminine and primitive. Accounts of the Turkish turn towards modernity at the beginning of the nation-state fit quite well into this characterization. After the utter destruction and massive loss of human life in World War I, the Turkish Republic emerged with young leaders espousing values of universal equality and humanism (which stand in stark contrast to the further mass death of the Greek population exchange and the Armenian Genocide). As Aslihan Sanal describes it, "Turkish people were a great example of the execution of modernity upon a population that had become members of a young nation."⁵² Abolishing Islam as the state religion and giving

⁵⁰ Sandra Harding, *Sciences from Below: Feminisms, Postcolonialities, and Modernities* (Durham: Duke University Press, 2008), 11-12.

⁵¹ Populism was a founding principle of Turkish politics in the 1930s and was enshrined in the Constitution as one of the *Altı Ok* (Six Arrows): republicanism, secularism, nationalism, reformism, populism, etatism. See Zürcher, 2005.

⁵² Aslihan Sanal, *New Organs Within Us: Transplants and the Moral Economy* (Durham: Duke University Press, 2011), 60.

women the right to vote, for example, is demonstrative of how the young state quickly attempted to move towards the ideals Harding lists above.

This version of modernity has been likewise critical in producing biomedicine as it exists today, both in Turkey and on a global scale. Biomedicine as a set of tools, techniques, and worldviews co-evolved with practices of colonialism since the 16th century, and medicine “rendered colonialism possible, facilitating provision and maintenance of healthy workforces, protecting colonists from the pathogens of the new territory, and drawing colonized populations into colonial institutions.”⁵³ Biomedicine has operated within colonialism through to the 21st century as the primary tool of biopower, and we can observe this most immediately in the massive inequities of care provided during the COVID-19 pandemic, among other such public health situations. But even while it has been central to colonial necropolitics, it cannot simply be characterized as Western biomedicine or modern biomedicine: “although originally imported from the West,” writes Sylvia Wing Önder, “it has taken root and become integrated into the local scene.” She argues that calling it modern doesn’t fit, “because that would suggest that traditional practices were somehow left in the past, over and done with, obsolete—when in fact they continue to be practiced, modified (“modernized”), and used in the present.”⁵⁴

While Önder’s critique of these terms perhaps occurs at the level of denotation rather than at the level of ideological connotation, she does bring into relief the incredible contingency of biomedicine’s purported universality. That is, biomedicine is “universalized knowledge” only as

⁵³ Poonam Bala and Amy Kaler, “Introduction: Contested “Ventures”: Explaining Biomedicine in Colonial Contexts,” in *Biomedicine as a Contested Practice: Some Revelations in Imperial Contexts*, ed. Poonam Bala (Lanham, MD: Lexington Books, 2009), 1.

⁵⁴ Sylvia Wing Önder, *We Have No Microbes Here: Healing Practices in a Turkish Black Sea Village* (Durham: Carolina Academic Press, 2007), 36.

it is deployed through the mechanisms of Western modernity, such as the continuation of imperialism, settler colonialism, and eugenics movements.

Biomedicine itself is not always “Western” in its modernity, however. Önder’s rebuke of “Western” on the basis of locality reminds us of Nappi’s commitment to locality and juxtaposition. The biomedical institution, with its rational view of the body as knowable through a set of established practices and terms, is established across the vast majority of the world through Euro-American imperialism. But it is practiced by people with differing and often incompatible beliefs about the role of biomedicine vis-a-vis the “tradition” that haunts such modernity. In the context of post-colonial or otherwise medically colonized communities, there remains tension between varying forms of expertise in the body. Rather than placing them into binary opposition, a critique of biomedicine as itself an ethnoscience founded upon knowledge systems preceding European early modernity creates opportunity to re-conceive the modern and traditional as negotiating their spaces within local healing apparatuses. This type of juxtaposition, to slightly adjust Nappi’s use of the term, displaces modernity as the horizon for knowledge production.

Discussing biomedicine in Turkey necessitates a reorientation towards historical development, particularly from the late 18th century, as well as a nuanced understanding of how my interlocutors work within biomedicine and incorporate music therapy. Historicizing the contact between Europe and the Ottomans and its influence on Ottoman medical practice neither negates Ottoman medical history as an idiosyncratic and worthy topic of study, nor does it necessarily center Europe and the Scientific Revolution. We need not justify the contributions of the Ottomans to the “ocean of modern science,” to call back Raj’s terminology, as a mode of credentialization. This contact, rather, can reiterate the scientific development of Europe was itself a highly situated practice—an ethnoscience of its own—who specific interaction with the Ottoman Empire did not

yield a wholly subjugated field of traditional health practices, but rather a series of localized negotiations. As Alper Yalçinkaya writes, “the nineteenth-century Ottoman debate on science can also be seen as a debate on Ottoman identity.”⁵⁵ Certainly, medical imperialism played a role, but such an approach also prevents the obfuscation of the Ottoman bureaucracy’s role in actively promoting such top-down reform of medical practice. So while the late Ottoman period was characterized in part by a “belief in science as the exclusive foundation of a new Ottoman society,” as M. Şükrü Hanioglu puts it, this too is a form of negotiation-contact offering us an opportunity to center actual practitioners of medicine rather than the bureaucrats.⁵⁶

The terms here remain difficult to contend with, but the contextual analysis above frames the work remaining in this chapter, as well as the remainder of the dissertation. In the following section, I give overviews of two interconnected histories that are contingent upon and constitutive of the processes of Ottoman modernization, colonization, and medicalization. Musical practices figure into each as a product of and lens for the uniquely-Ottoman process of modernization that occurred from the turn of the 19th century. With the context for terminology above, I provide key Ottoman context for a full analysis of musicking in the wake of the Ottomans.

⁵⁵ M. Alper Yalçinkaya, “Muslims’ Contributions to Science and Ottoman Identity,” in *Living in the Ottoman Realm: Empire and Identity, 13th to 20th Centuries*, ed. Christine Isom-Verhaaren and Kent F. Schull (Bloomington: Indiana University Press, 2016), 273.

⁵⁶ M. Şükrü Hanioglu, “Blueprints for a Future Society: Late Ottoman Materialists on Science, Religion, and Art,” in *Late Ottoman Society: An Intellectual Legacy*, ed. Elisabeth Özdalga (New York: Oxford University Press, 2005), 28.

2.3 Narrating Music Therapy in a Global Perspective

In this section, I offer two historical vignettes: long histories of music therapy in a cross-cultural perspective, and specific details of musical aesthetic development during a transition of Ottoman power. The former makes itself known in interviews and published materials—an attempt to demonstrate that music therapy is not an invention of any one society, but an innate knowledge resulting from the supposed musicality of humankind. The latter fills in the untold part of the story—a cursory account of Ottoman musical history that ultimately shapes Ottoman musical taste for decades. Taken together, these two vignettes are actors within the larger script, rehearsed time and again, themselves practices in writing history.

In the first sub-section, I attend to the geographic trajectories of music therapy, as explained by my interlocutors. Beyond the footsteps they follow from the Central Asian steppe to Anatolia, other routes appear: multiple interlocutors and publications point to sub-Saharan Africa, narrating music therapy practice as not only a part of healing, but a part of the formation of subjectivity at birth. At times, these stories seem to fetishize the Others of the Ottomans: stories of Africa are identifiable as sub-Saharan only through the depiction of Black bodies, and are absent of further detail, citation, or evidence. Such speculative histories function as supporting characters in the arc of Turkic music therapy history, lending their confirmation to what is ultimately a claim to the body through sound.

In the second sub-section, I provide brief historical detail to start to fill in the gap between 1794 and the present. In actuality, I focus primarily on the early 19th century and a moment of transformation that not only set the stage for larger processes of bureaucratic transformation in the long 19th century, but also became key players in the teleology of Turkish modernization. This overview, which recounts the musical performance and abolition of the Janissary corps,

demonstrates that the intervening years of the music therapy origin story bear on the specific type of genealogical history that my interlocutors and some historians attempt to construct. While the following major section will deal in more detail with genealogy and teleology specifically within the context of Ottoman-Turkish historiographical methodology, this section offers necessary information that might shape how the history of music therapy is told relative to this history of music—two distinct, if closely related, projects.

2.3.1 Tracing Long Histories: East Africa and Ottoman Slavery

During an interview with Nuran Kömürcü—the head of the department of nursing at Istanbul’s Aydın Üniversitesi and a researcher on music and childbirth—she opened on her computer a PowerPoint presentation that she told me she uses from time to time when teaching about music therapy. She didn’t make it herself but came across it online and saved it for use. Titled “A Song in an African Tribe,” the presentation began with a drawing of three black women: one carrying sticks, another a child, and the third looking over her shoulder at us through the screen. All were dressed in nondescript “Africanized” clothing of bright colors, including head wraps and large earrings. The text of the slide reads, “Do you have a song too?”

Throughout the presentation, the text describes a non-specific “African tribe” and its birth rituals. Many of the photos are of the type one might expect to see in National Geographic (well-lit and well-composed primitivism, depicting intimate parent-child relationships, elders wearing lip-stretchers, etc.) while others are illustrations and stylized drawing (see Appendix A). According to this presentation, the women of this tribe gather when the time comes for a pregnant woman to deliver her child. Based on a supposed belief that each soul has a unique sonic vibration, the women gather sing/vocalize during the birth. When the child is born, they discern that child’s song,

and return to the tribe to teach everyone. Upon the arrival of the child, the entire tribe sings the song together. The song continues to play a role during life-event rituals and celebrations for that individual, including at death. Should that individual transgress against the tribe, the song is meant to remind them of their identity and sense of belonging to the tribe. Finally, the presentation zooms out to speak more broadly to the songs within us all and the longing for recognition that comes with difficult periods of life. “True companions are those who hear our songs and repeat them to us when we need them.”

Depictions of primitiveness in sub-Saharan Africa appear frequently throughout literature on music therapy, and as with the presentation, they come without citation. Haşmet Altınölçek, for example, has written the following:

It is known that today such traditions [of musical healing] endure among those primitive tribes living in the central regions of Africa. In Zambia, it is done through dance therapy accompanied by drums. In this method, an environment that excites the patient is created. With the rhythm of the drum, they attempt to effect change in the patient’s nervous system. Feeling relief, the patient leaves this environment feeling good.⁵⁷

Similar claims appear in Adnan Çoban’s well-known book on music therapy, citing Ahmet Şahin Ak’s *Müzikle Tedavi Tarihi* (History of Music Therapy), which ultimately says very little about Africa at all. Another history of music therapy written by Özge Gençel notes the use of music therapy practices in Africa, broadly defined, citing the doctoral thesis of Rahmi Oruç Güvenç, founder of TÛMATA, who characterizes such practices as follows:

Spiritual beings play an important role in the lives of primitive villages, and physicians try to heal their patients with herbs, medicine, music and dance. In many societies, to restore one’s health, the patient hands themselves over to the priest, the wizard who believes he has power to heal. Mutual trust and belief play an important role in healing. The power of the healer is important in this method of treatment. It is said that there are three types of therapists dating back to the 3rd century BC: Wizard, Priest, and Physician. Primitive

⁵⁷ Haşmet Altınölçek, “Bir İletişim Aracı Olarak Müzik ve Müzikle Tedavi Yöntemleri” (PhD diss., Anadolu Üniversitesi, 1998), 30.

people believed that their illness was caused by evil spirits or demons. These evil beings were placed under control by the priest, physician, or shaman, and music, dance, rhythm, and songs played a major role in these healing ceremonies. Saving the patient from evil beings and spirits was the basis of treatment. Sound and music were also a means of communicating with these hidden beings.⁵⁸

A quick internet search of the phrase *Afrika kabilesinde şarkı* (A Song in an African Village) yields listicle-type articles from multiple Turkish news outlets, with titles such as “They sing a song before birth”⁵⁹ or “Africa’s most interesting tribe!”⁶⁰ The same text appears in each subsequent blog post or share on social media, and at least part of the text is attributed to an audio book by self-help author Alan Cohen titled “Living from the Heart.” Set seemingly without reason to Andy Williams’ 1958 version of “The Hawaiian Wedding Song,” the presentation begs the question, what narrative role is this playing in the construction of the history of Turkish music therapy? What do this presentation and these publications tell us about the historical and contemporary relationship between the Ottoman Empire/Turkey and sub-Saharan Africa? How do such relations function to make a claim about the innate musicality of humankind? The remainder of this section will address these questions through a brief history of the Ottoman slavery economies and East Africa, as well as the construction of race in the late Ottoman/Early Republic period.

Stepping back: Islamic civilization has long been connected to the enslavement of East Africans, before the Atlantic slave trade of stolen West Africans began. While evidence of East Africans being castrated and forced to serve as eunuchs for Islamic leaders can be traced to the Abbasid caliphate as early as the 8th century, the enslavement of Nubians by Egypt is reported

⁵⁸ Rahmi Oruç Güvenç, “Türklerde ve Dünyada Müzikle Ruhî Tedavinin Tarihçesi ve Günümüzdeki Durumu” (Diss., Istanbul University Cerrahpaşa School of Medicine, 1985), 8.

⁵⁹ <https://www.sabah.com.tr/galeri/dunya/dogmadan-once-sarki-soyluyorlar>

⁶⁰ https://www.sozcu.com.tr/2015/dunya/afrikanin-en-iliginc-kabilesi-903891/1/?_szc_galeri=1

even earlier.⁶¹ Jane Hathaway argues that this is enough evidence to infer that eunuchs were a feature of the Umayyad empire (680-750). Certainly after 750, African eunuchs comprised a small percentage of the total enslaved East Africans by Muslims in Baghdad and surrounding territories.⁶² While East Africans comprised the majority of the enslaved during this period, the Abbasids also enslaved several thousand white Slavic eunuchs, and Abbasid caliph al-Amin divided his slaves into white and black corps—a move, Hathaway notes, that “anticipated the Ottoman division by some seven centuries.”⁶³

Subsequent Islamic polities too preferred East Africans as eunuchs, and resorted to enslaving Slavic, Turkish, or South Asian eunuchs only if they lacked enslaved East Africans. This falls in line with other such ethnoregional preferences, such as preferring Central Asian Turks as *mamluk*-s (enslaved or free-assigned soldiers). And by the time the Ottomans take Constantinople in 1453, these military slaves are coming primarily from the Caucasus, taken by the Turks of the Mamluk Sultanate along the Black Sea Coast and through Constantinople.⁶⁴ This opens the door for the Ottomans to control the slave trade from the critical juncture that is Constantinople, developing into the primary practices that comprised the Janissary corps, among other enslaved work forces (see below). And as the Ottomans expanded territory into Egypt and across Northern Africa, their proximity to Ethiopia via Sudan enabled thousands of enslaved to be easily transported to Constantinople and other metropolises yearly.

⁶¹ Stanley Burstein, *Ancient African Civilizations: Kush and Axum* (Princeton, NJ, 1998), 118–20, 127–31.

⁶² Jane Hathaway, *The Chief Eunuch of the Ottoman Harem: From African Slave to Powerbroker* (Cambridge: Cambridge University Press, 2018), 14.

⁶³ Jane Hathaway, *The Chief Eunuch of the Ottoman Harem*, 15.

⁶⁴ Jane Hathaway, *The Chief Eunuch of the Ottoman Harem*, 18.

The racialization of East Africans in the Ottoman Empire delineated groups further than “Black,” specifying ethnoregional categories that were prescribed as having qualities suiting particular tasks. These stereotypes draw on medieval practice and were heavily influenced by the view that those of “Rum” descent were racially superior (those descending from peoples central to the empire: Istanbul, the Balkans, and Western Anatolia, named such after former Roman control of the area). These attitudes took root particularly as the empire expanded through the 16th century.⁶⁵

Understanding the effects of this Ottoman legacy on contemporary racial politics involves addressing the modernization project of the late Ottomans and Turks, which will be addressed below. But for the purposes of positioning the rhetorical deployment of Africa here, we turn to racialization under Kemalist politics from the Early Republic Period. In particular, the “Turkification” project of Kemalism meant proclaiming all those living within the bounds of the new republic were Turks in the eyes of the state and law, regardless of difference. And while proponents wish to paint this as a promotion of equality amongst diversity, it ultimately rendered invisible (yet tangible) the power differentials between minoritized and subjugated groups within Turkey. Ilia Xypolia notes that race has acted as an “evaluative criterion for Turkish citizens” since the early 1930s, and that in this early period terminology such as “‘Turkish blood’ and ‘Turkish ethnicity’ were being used interchangeably in official documents.”⁶⁶

Such racial classifications can be traced to scientific racism in the preceding decades, including the foundation of the *Türk Ocakları* as well as the promotion of the *Türk Tarih Tezi*

⁶⁵ See Hathaway, 2018; Toledano, 2007.

⁶⁶ Ilia Xypolia, “Racist Aspects of Modern Turkish Nationalism,” *Journal of Balkan and Near Eastern Studies* 18, no 2(2016), 116.

(Turkish History Thesis). Founded in the 1910s, the *Türk Ocakları* is a non-governmental organization with four missions, according to Xypolia: “to reinforce the ethnic conscience among the Turks; to elevate their social and intellectual level; to purify their language; to increasing their economic prosperity.” The Turkish diplomat Rechid Safvet is quoted in 1929 as proclaiming the following:

The Turks had, always and profoundly, the consciousness and the pride of their origins, their ascendances, so much that there was almost no leader among them that has stood with honour to trace back their ancestors to Altai, the birthplace of the white race itself.⁶⁷

By arranging a series of equivalencies between whiteness, modernity, Turkishness, and so on, these policies can hardly be understood as the “universal equality” touted by the founders of the republic. Even more insidious is the naturalization of racial and ethnic difference in racial science/phrenology, inscribing in the body one’s status in the new state through anthropological projects documenting physical characteristics. Numerous examples from the Early Republic Period show scholars and government officials appealing to Turkish superiority by aligning themselves with whiteness through the refusal of “yellowness.”⁶⁸ Such inscribed, racialized, inherent difference is then projected into the imagined past, long before the Ottomans into pre-Islamic history. Aside from the rejection of backward Ottoman society, itself too foundational to the new republic, a return to the origin of Turkic society underpinned the promulgation of Turkish superiority and homogeneity. Coupled with messages of unity and Kemalist principles of Turkish ethnonationalism, there remains today a staunch denial that racism exists in Turkey—a claim

⁶⁷ TNA: FO 371/14579 (1930) ‘Turkey. Code 44 Files 961–1511 (to paper 2185)’. Rechid Safvet, *Les Turk-Odjachis*, Ankara, 1930. Quoted in Xypolia, “Racist Aspects of Modern Turkish Nationalism,” 117.

⁶⁸ See Ergin, 2008.

multiple made to me immediately before or after expressing distaste for Arab and Chinese tourists, or Arab refugees.

For contemporary Afro-Turks descended from those enslaved by the Ottomans, such refusals of racial difference and discrimination are political falsities. *Zenci*, one Turkish word for Afro-Turks, is understood as a pejorative and has been used by President Recep Tayyip Erdoğan to contrast the educated and cultured elite of his party from those “looters and rioters” who protest neoliberal policy in Turkey. But simultaneously, in positioning himself as “of the people” rather than a career politician, he has been quoted as saying, “[i]n this country there are White Turks, as well as Black Turks. Your Brother Tayyip is from the Black Turks.”⁶⁹ Michael Ferguson explains this quotation as an “attempt to demonstrate the level of disdain his opponents have for his party’s success and his everyman roots operates on the steam of an ugly racial stereotype.”⁷⁰ Afro-Turks tend to live in segregated communities, settled outside cities such as Izmir and Istanbul in the late Ottoman period to meet labor demands. But their communities were always heavily surveilled, making it unsurprising that racist descriptors have been operationalized towards conservative political ends without redress for their simultaneous subjugation, as they are forced into the role of the constitutive, racialized, foreign Other living among the majority.

Such a history points to numerous contextual frames acting upon the presentation Dr. Kömürcü showed me that day in her office, and certainly upon these texts published over a span of nearly 40 years. The project of tracing a genealogy of music therapy in the myriad cited sources

⁶⁹ Hugh Pope, “Erdoğan’s Decade”, Cairo Review of Global Affairs. <http://www.aucegypt.edu/gapp/cairoreview/pages/articleDetails.aspx?aid=149>. Quoted in Ferguson, “White Turks, Black Turks and Negroes: The Politics of Polarization,” in *The Making of a Protest Movement in Turkey: #occupygezi*, ed. Umut Özkırmı (New York: Palgrave Macmillan, 2014), 79.

⁷⁰ Ferguson, “White Turks, Black Turks and Negroes,” 79.

is less indicative of a generalist interest and functions instead to demonstrate the ubiquity of musical healing, but towards what end? Often singled out in these publications, Africa stands in stark contrast to overviews of China, which reference the rich history of Chinese medicine; or of ancient Greece, which are contextualized within the view of Greece as the major origin of Western thought; or of Europe and the US, where authors tend to focus on the uses of music therapy after World War I, when the practice was used for treating shellshock. “Africa” is almost always referred to continentally and never with the specificity of an ethnic group and remains the sole primitivized example. Within the specific historical orientation towards Africa inherited from the Ottoman era, there seems a dual move towards naturalization of music: as inherent to the human via the primitive and feminine Other, who represents an unimpeded connection to the objective nature of the world.

First: with this depiction of Africa so prevalent amongst those interested in music therapy, these researchers make an implicit (and sometimes explicit) argument that the presence of music therapy in other contexts signifies the innate musicality of humankind. Beyond simple niceties, that we “all have a song in us” is an argument for the role of music in a universal perspective. Within the specific context of biomedicine, this universal is particularly important in melding together the long history of Turkish classical music with the universal rationality of biomedicine (see above). Such a project reminds us, in part, of Alan Lomax’s *Cantometrics*, or the current *Natural History of Song* project at Harvard University. While both of these examples have slightly different focuses and goals, they ultimately point towards supposed universals of inherent musicality.

Second: this inherent musicality is specifically made legible through the primitive and feminine. Following Harding in taking the primitive and the feminine as those haunting specters

of modernity, their particular instrumentalization towards a narrative that naturalizes music and health *within* the framework of biomedicine is made *even more poignant* by the (post) Ottoman orientation towards sub-Saharan Africa as a primitive site that supplied enslaved labor. Within this historical context of Ottoman racialization, then, Africa is the constitutive outsider, the haunting specter of precisely the type of Western modernity sought by Turkey from the 19th and early 20th centuries. Africa was made the negation and shadow of Western modernity through colonialism and the slave trade, and while Ottoman imperialism occurred along very different lines than those of Europe, Africa still functions here as the primitive and feminine against which modernity defines itself. To cite music therapy in Africa is thus not merely another history or cross-cultural comparison, but a rhetorical tool in the perpetuation of particular modes of modernity within biomedical practice.

Ottoman practices of slavery profoundly shaped their politics, given the role of enslaved East African eunuchs, and thus also racial politics of the past century. Such political orientations manifest in the telling of that history, even if their particular enactments are largely excluded from the narrative. The same can be said for the second vignette below, which homes in on the Janissary corps: an elite military unit long comprised of enslaved young boys stolen from the Ottoman Balkans at a young age, converted to Islam, and trained as musicians and members of the Sultan's innermost protective circle. While the Janissaries later became a potential site for social mobility and families would send their sons away to serve (not dissimilar to current US military predatory recruitment), the slave trade of the Mamluk Sultanate through Constantinople shaped this particular institution, and with it the trajectory of music in the last century of the Ottoman Empire.

2.3.2 The Role of the Janissaries in Musical/Political Development

The origin story of Turkish classical music therapy misses some details—it inevitably must, given that it spans roughly 6000 years of complex historical development. Tracing the timeline of historical nodes back from the present, the most recent location of specific historical activity is the late 18th century publication of a treatise on music and childbirth. This treatise, *Neticetü'l-fikriyye fî tedbir-i vilâdetü'l-bikriyye* [Final Thoughts on the Treatment of First/Virgin Birth], was written by Gevrekzâde Hafız Hasan Efendi, the *hekimbaşı* (head physician) for Sultan Abdülhamid I (and briefly Selim III). While few of my interlocutors know much about Gevrekzâde himself, and none read Ottoman, this document and its author remain a critical discursive tool for the construction of the imagined past. This historical node carries the weight of 6000 years into our present, and functions narratively as the height of Turkish classical music therapy: the codification in a document by the highest doctor of the empire.

But in the intervening century (and a few decades) before the end of the empire, the musical landscape of the Ottoman bureaucracy undergoes significant changes, in part due to contact with European art forms.⁷¹ Since at least the 18th century, the Ottoman bureaucracy set its sights on the European colonial powers as they searched for a way to save the vestiges of an empire in crisis. Rapidly losing territory, the Ottomans were on the defensive for the first time, and eventually found themselves outpowered in regard to military technology. The Janissaries, an elite corps of the Ottoman military who functioned both as house guards and as an impenetrable singular unit on the warfront, had long been a highly effective tool of the Sultan. The Janissary corps was the

⁷¹ Gill, 2017; Kutlay, 2019; Somakçı, 2017, 2018.

also the primary sonic representation of the Ottomans abroad, and it was their musical training that inspired European composers' caricatures of the Turks. Changes to the military structure so as to more effectively engage in warfare meant likewise a significant shift in musical culture within both the Ottoman palace and at the edges of the empire.

Founded in the earliest days of Ottoman rule, the Janissaries were the household guards of the Sultan and became the first standing army in Europe. The Janissaries were not free citizens enlisted but slaves, often stolen as young boys from non-Muslim families in the Ottoman Balkans. Popular narratives of the Janissary posit that as the empire began its decline in the 17th century after the failed second siege of Vienna, the Janissary too shifted from loyal and disciplined soldiers of the Sultan to a privileged, unchecked threat against the Sultan and loyal Ottoman subjects. The Janissary revolted several times to achieve advancements such as higher pay, but by 18th century, they were thought to be colluding with the “impoverished *esnaf* (artisans, petty tradesmen, and men of odd jobs)” so that they might “live parasitically off the government treasury.”⁷² According to Sunar, historians have highlighted the social and economic functions of the Janissaries and focused on the dominant 19th century view of them as disconnected from the Ottoman populace, serving only themselves from the hands of both the empire and the working citizens. Sunar counters this to claim that the Janissaries were key players in social, political, and economic life, particularly at the beginning the 19th century, and their resistance to bureaucratic control protected the interests of various urban groups in particular.⁷³

⁷² Niyazi Berkes, *The Development of Secularism in Turkey* (Montreal: McGill University Press, 1964), 52. Quoted in Mehmet Mert Sunar, “When Grocers, Porters, and Other Riff-Raff Become Soldiers: Janissary Artisans and Laborers in the Nineteenth Century Istanbul and Edirne,” *Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 17 (2009), 179.

⁷³ Sunar, “When Grocers, Porters, and Other Riff-Raff Become Soldiers,” 184.

The Janissary corps was well-known for its musical achievement. Training in military music took place at the *Mehterhane-yi Hümayûn*, where young boys (enslaved, sons of the enslaved, and only later semi-voluntary recruits) learned to perform the military repertoire at an extraordinarily high level. *Mehter* consisted of many of the same elements that comprise Turkish classical music as we know it today, from musical structures such as *makam* and *usûl* to forms of composition such as the *peşrev*, *semai*, *beste*, and *fasıl*.⁷⁴ Janissary musicians accompanied Ottoman ambassadors to Europe, and the two traditions of military music were highly influential on one another.⁷⁵ Just as the Europeans took from *mehter*, European musical styles were introduced to the Ottoman army. According to Evren Kutlay, this began with the formation of a brass ensemble in the late 18th century under the supervision of French military officers.⁷⁶ During a period known as the *Nizam-i Cedid* (New Order), Sultan Selim III set in motion such westernizing reforms to military structures and cultural institutions alike, which set the stage at the turn of the 19th century.

Such shifting political tides meant that the Janissary wouldn't last long into the 19th century, and so too would their important cultural institutions come to an end. During a bloody rebellion in 1826, the Janissaries were defeated by members of the empire's artillery and bombardier corps, and Sultan Mahmud II formally abolished the Janissary corps. An estimated 6,000 janissaries died by artillery during the rebellion or by execution afterward, and their bodies were left in the square of Sultanahmet, the central district of Ottoman Istanbul. Erasing the Janissary meant too ridding

⁷⁴ Eduard Rusu notes that the historical sources are unclear on the actual format of a *fasıl* in the mehter context, given that a *fasıl*, in the classic context, is a performed suit of music comprised of several other pieces, including *peşrev* and *semai*, among others. See Rusu, 2020.

⁷⁵ See Head, 2000.

⁷⁶ Evren Kutlay, "A Historical Case of Anglo-Ottoman Musical Interactions: The English Autopiano of Sultan Abdülhamid II," *European History Quarterly* 49, no 3(2019), 389.

the empire of the *Mehterhane-yi Hümayûn*. In his vision of a modernized, Europeanized empire, Mahmud II replaced this institution with *Muzıka-yı Hümayûn* a year later. Eventually leading to the first imperial conservatory of the empire, the *Muzıka-yı Hümayûn* was led by Giuseppe Donizetti (Donizetti Paşa), brother of Italian composer Gaetano Donizetti. Students here learned to perform marches in the style of the Western European tradition, a marked shift in the musical aesthetics of the Ottoman Empire.

The remainder of the 19th century included the adoption of other cultural forms and aesthetics from Western Europe, in not only music but architecture and art as well. But the abolition of the Janissary represents a particularly poignant node within the long-view historical development of the Turkish Republic from the rubble of the Ottoman Empire. Howard Reed characterizes the abolition of the Janissary corps as “a watershed moment in the teleological process that led to the founding of the Turkish Republic.”⁷⁷ In making such a radical change to the structure of the Sultanate and military, Mahmud II strongly defied the traditional order in a move that preceded what would ultimately be the drastic changes of the *Tanzimat* era. But these changes in the name of modernization were not simply imitation of European life. Rather, they were a negotiation of Ottoman identity in light of significant decline and rapidly changing geopolitics in the 19th century and included the negotiation of a racial hierarchy.

Approaching the problem of Ottoman music therapy’s speculative history means addressing precisely these processes that shape the contemporary institutions within which my interlocutors work. A simple slide presentation unfurls centuries of colonialism and slavery that

⁷⁷ Howard Reed, “The Destruction of the Janissaries by Mahmud II in June 1826,” Ph.D. dissertation (Princeton University, 1951), 357. Quoted in Sunar, “When Grocers, Porters, and Other Riff-Raff Become Soldiers,” 179.

were at the front of the minds for Young Ottomans and Young Turks as they structured their new nation. And the genre of music invoked by my interlocutors carries with it roots in one of the empire's most contentious institutions. Those stories above rely on the immense body of documentary evidence left behind by the empire, and scholars' orientation towards that archive has been co-determined by its very availability. I will demonstrate how early 20th century approaches to Ottoman (and broader Turkic) histories have been instrumental in shaping the narratives above.

2.4 The Positivist Paradigm and the Stories It Tells

For researchers working in Turkish and Ottoman studies, the written culture of the Ottomans left us with an indescribable trove of sources. The Ottoman Archive of the Prime Minister (*Başbakanlık Osmanlı Arşivi*) alone contains more than 150 million *evrak*-s (loose papers) and roughly 300,000 *defter*-s (bound notebooks/registers). The Süleymaniye Library holds one of the world's largest collections of Islamic manuscripts, in addition to print sources in Ottoman, Arabic, and Persian, and the extensive personal archive of Turkish historian Süheyl Ünver, who played a key role in early efforts towards an Ottoman historiography. These massive collections, as well as those at the many other major research institutions across Istanbul and Turkey were organized as an archive first in the mid-19th century as the *Hazine-i Evrak* on the grounds of Gülhane, the flower garden in the outer ring of Topkapı Palace. These collections were extensively cataloged at the beginning of the 20th century as a way of making sense of the incredible written culture of the empire, and the cataloging continues today. During the first few decades of the Turkish Republic in particular, this was the central resource for constructing a history of the now-defunct empire.

Historians of the Ottoman Empire working in the early 20th century were often influenced by the *vakaniivis* (official court chronicler) tradition, which involved impressive, exhaustive reviews of primary source evidence relating to a particular subject or time period. According to Sunar, “[t]he logical consequence of this method was the repetition of the official view” of the Ottomans. In particular, Sunar points to a project of the 1940s that involved attempting a comprehensive history of the origins of Turkish modernization.⁷⁸ As shown above, the late 18th and 19th centuries are seen as the genesis of the modern state, and the Janissaries are the villain of the story. Music’s central role to modernization—from the codification of *Turkish classical music therapy* in the late 18th century to the closing of the *Mehterhane-yi Hümayûn* in favor of Western European musical training, to the formation of the Turkish classical music genre in the Early Republic Period—is a fruitful site for reimagining the connections between the Ottomans and Europeans. Such a project is beyond this chapter, but worth mentioning towards an understanding of how the blank space in popular histories of Ottoman musicking don’t address such points.

This positivist approach to history in the early 20th century is, at least partially, co-constitutive of the near-absolute historicism that characterizes some popular narratives of Ottoman/Turkish history, such as the story of 6,000 years. And this historicism in the teleology of Turkish modernization has benefitted a political movement under which a conservative leader continually consolidates power. Islamist-leaning politics of the past two decades in Turkey—though they would likely reject the label of Islamism—have been progress-oriented under the same neoliberal rubric as many right-leaning countries, including the United States. Unlike the Early Republic Kemalists, who rejected Ottomanism as a backward or regressive period and founded a

⁷⁸ Sunar, “When Grocers, Porters, and Other Riff-Raff Become Soldiers,” 177.

secular republic, the contemporary AKP revives this Ottomanism out of empathy not for those living under the empire, but for the imperial bureaucracy itself: Islam as a central political tool governing the public, the centrality of singular pious figures, and other tools of populist theocracy.

Far from blaming academic-historical inquiry for contemporary Turkish politics, however, I argue that these are both products of the longer history of the Turkish Republic, particularly the shifts in the Turkish outlook on the Ottomans. Kemalists rejected the Ottomans as a failed state, and initiated significant reform, such as the massive campaign of re-education to convert the Turkish alphabet to Latin characters, or the amalgamation of national musics into a cohesive repertoire. But the Kemalists also engaged in significant projects of racialization, as above, in order to foster ethnonationalism as a driving force within Turkish politics—one which continues today.

Contemporary neo-Ottomanism takes on a diffracted view of the past, borrowing from the empire a global outlook that has dramatically shifted Turkish geopolitics. And with such detailed records available that outline the Ottoman bureaucracy's intellectual, political, and military histories, the relationship to the Ottoman past continually shifts alongside Turkish policy. These shifts often create generate important frictions, such as that between ethnonationalism and the purported multiculturalism of the Ottomans, and such tensions require framing by the history of racialization offered here. But the negotiation of the historical present occurs often in the archive of the bureaucrats, where one can read and repeat the Ottoman perspective.

In this dissertation, this explanation is helpful in framing why it is my interlocutors tell the story of Turkish music therapy as they do. Taken together the Turkish History Thesis, there remains a proclivity towards these forms of long history narrativization within Turkish discourse, as they undergird the story of Turkey itself. The speculative history of Turkish classical music therapy is itself an ongoing negotiation of the relationship between biomedicine,

traditional/historical healing, and the identity of Turks *as an historical node of the Turkish teleology*. While my analyses in subsequent chapters remain primarily within the ethnographic present, they rely on this historical context to illuminate present debates about science, sound, and identity in Turkey. My interlocutors work at complex intersections of social, political, and economic vectors traced back in time and across geopolitical boundaries. By focusing on the locality of the studies in this project, I invoke the history towards a contemporary understanding.

3.0 Sound, Cognition, and Pain

In this chapter, I examine the relationship between Turkish classical music therapy, psychology, and pain in order to demonstrate how contemporary mental health and pain treatments signify marked shifts in practitioners' orientations towards the history of music therapy and the mind in the Ottoman era. Historians note that psychology and psychiatry were not developed fields of practice for the Ottomans prior to the 19th century, but that conditions of the mind were conceptualized in different terms. Relating more closely to the religious, spiritual, and even magical realm, mental health was connected to both the body and the cosmos and was treated as such with remedies for the physical manifestations (humoral imbalance) and spiritual implications (disconnection from God). This chapter approaches psychology and pain as interrelated and contingent modes of describing experiences that, regardless of overlap or distinction, are delineated under medical imperialism and the bio-scientific rubric imported in the 19th century to the Ottoman Empire. This chapter includes analysis of studies in cognitive psychology and pain management, as well as ethnographic evidence from interviews with psychologists, cognitive researchers, and academics who study the treatment of pain. Chronic pain and clinical depression are of course distinct conditions, but in this chapter, I examine them together in order to show how the biologization of the body has to some extent excluded the mind, rendering it unknowable. The use of music as a form of healing has largely been associated with the mind. But through an understanding of the neuro-physiological basis of both pain and mental health, broadly defined, we come to a new understanding of how cognition and feeling are interconnected registers of musical interpretation. In this way, the radically divergent types of neuro-physical experience and

their subsequent pathologization are helping as guides for parsing the varied understandings and applications of Turkish classical music therapy.

I start with a brief overview of mental health and its treatments in the historiography of Islamic medicine prior to the influence of European biomedical practice in the 19th century. Growing in large part from the Arab-Islamic scientific practice of the Golden Age of Islam (medieval era), Ottoman medical practice drew heavily on Galenic and humoral medicine, as translated from Greek to Arabic, as well as Prophetic Medicine (*al-Tibb al-Nabawi*) based on the *Hadith* (traditions and teachings of the Prophet Muhammad). These modes of treatment worked together, and each saw itself as a remedy to popular beliefs about illness as coming from the evil eye or djinn possession. The Ottomans drew on and developed these traditions for the duration of the early modern era, despite their increasing awareness and fluency in European medical thought. This history demonstrates how understandings of the body, even under physical manipulation and treatment, were not purely biological. This shapes conceptions of illness and health as inclusive of body and mind, and sharply contrasts contemporary narratives of Ottoman musical healing practice filtered through contemporary biomedical taxonomies of practice.

With this evolution of psychological practice and the body in mind, I then discuss how this history of medical development, together with the history of music therapy outlined in Chapter 2, come together within the framework of active versus passive listening. Nearly every interlocutor noted to me that music therapy can be practiced actively with dance, movement, or musical performance, or passively with the patient simply listening and absorbing music. The latter is the primary topic of this dissertation, given the limitations and mechanics of biomedical study design (see Chapter 5). Importantly, “passive” seems a glaring misnomer for what Adnan Çoban describes

as *engaged* listening in our interview.⁷⁹ He differentiated between passive music therapy and laying in bed listening to music, for example. Passive music therapy in his view is not simply relaxation, but a stationary mode of intervention that requires mental focus on the music. This point is not necessarily agreed upon between interlocutors but does seem to represent the dominant view amongst those with medical or advanced academic training who study and apply music therapy in those settings.

This leads to a critical study in cognitive psychology on *makam* and listening carried out by Esra Mungan, Z. Funda Yazıcı, and Mustafa Kaya. Through discussion with Mungan and an analysis of this study, I argue that music cognition offers insight into listening that we see already in ethnomusicology in different terms. In particular, Mungan et al come to remarkably similar conclusions to those of Denise Gill in her book *Melancholic Modalities*. Gill's notion of biaurality, which explicates the process of learning to listen within particular sociocultural frameworks of knowledge, very nearly matches those conclusions drawn by Mungan et al about how we listen to and hear *makam*. From this study emerges a critical question: what is the relationship between cognition and affect in listening to music? Between cognition and the neurological activity that comes with listening to music? Mungan et al focus on the cognition and segmentation of *makam* performances based on musical structure, asking how participant groups of varying exposure to Turkish classical music hear harmonic and melodic structure. And according to Dr. Esra Akin Korhan, a nursing PhD and researcher based in Izmir, *it is specific musical structures that are conducive to healing rather than the musical context in which they appear*. Thinking through

⁷⁹ Adnan Çoban, interview by author, January 23, 2020.

affect, cognition, and neurology together as intra-active processes of listening is critical to understanding how Turkish classical music therapy is conceptualized.

Each strand of historical narrative and each epistemological orientation informs my analysis of select studies on music as a treatment for pain. Working with the set of questions above—about music, cognition, affect, structure, cultural context—I draw out tensions between contemporary instantiations of Turkish classical music therapy and the historical practices they seek to emulate. In some cases, researchers express to me clear recognition that their work includes key irreconcilable differences to the Ottoman practice. Often, this recognition goes as far as disinterest in attempting an accurate revival. Rooted in epistemic perspective, this disinterest stems from not only sincere belief in the biomedical outlook, but also the lean towards neoliberal models of the medical institution that rely on and perpetuate technological progress and highly individuated modes of labor. Close analysis of these studies illuminates the larger social and biopolitical structures that frame these studies and highlight exactly how these historical narratives operate as discursive tools for emplacing contemporary practices within a (teleological) lineage of musico-medical development.

Holistic/alternative healing practices, under which music therapy falls, are easily subsumed by the medical industrial complex. Researchers often note to me that music therapy with an mp3 player and headphones (as opposed to live performance or community/group therapy, see Chapter 5), is cost effective and easy to implement. These calculative markers of cost-benefit analysis comprise many of these studies' conclusions. As in other countries, the effects of increasing neoliberalism in Turkey, combined with the government's unique brand of Islamist-populist politics and interest in neo-Ottoman cultural forms, can be seen in studies of music, the mind, and pain insofar as market logics dictate not only treatment options and costs, but also frame how

mental health, pain, and medicine broadly are continually redefined. In the case of Turkey, this manifests within the particular political-cultural form of Turkish classical music therapy.

3.1 Islamic Medicine: Head, Heart, Soul

Ottoman medical practice drew on several competing traditions from the medieval era, which further complicates the production of a cohesive history (especially for those from the Euro-American tradition). Several intersecting systems of understanding the body and illness meant competition for legitimacy, and each adopted a unique etiological outlook meant to lend credibility to their practice. Galenic medicine, adopted from the ancient Greeks as translated by Syriac Christians, saw the body in its humoral composition and illness as the imbalance of blood, phlegm, black bile, and yellow bile.⁸⁰ Folk medicine practices, based on community oral traditions, and included belief in supernatural phenomena. Prophetic medicine draws largely on the *hadith* and includes religious healing in the form of prayer and ritual, as well as physiological medical intervention. The spread of Islam meant the intermixing of prophetic and Galenic-humoral traditions, often to the purposeful exclusion of folk medicine on the religious basis of denying superstition. Of course, beliefs in the evil eye and *jinn* (supernatural spirits) persist within Islamic cosmology.

The development of the prophetic-Galenic tradition during the Golden Age of Islam certainly included the treatment of psychological illness, but historians find the record to be largely prescriptive about practice at the expense of description of illness itself. Michael Dols uses the

⁸⁰ See Gill 2017 for more on the humors and their use in Turkish classical music therapy.

word *majnūn* (madness) in his account of mental health in the medieval era but notes that it is imprecise. Appearing frequently in Arabic, Persian, and Turkish sources, *majnūn* denotes little more than the contemporary phrase “mental illness.” Other scholars have offered the phrases *al-tibb al-ruhani* (spiritual/psychological medicine) and *al-tibb al-qalbi* (mental medicine) as the phrases used in the era. Interesting, the second is translated as “mental” medicine while literally meaning “heart medicine.” According to Persian philosopher al-Ghazali (1058-1111), our spiritual nature is comprised of the heart (*qalb*), spirit (*ruh*), and intellect (*‘aql*).⁸¹ These were integrated into the humoral framework, and illness associated with any one part of one’s nature could then be treated by rebalancing the appropriate humor. Those physicians most cited from the era such as Ibn Sina and al-Farabi practiced precisely this type of medicine and largely discredit folk superstition in favor of the scientism of the day.

From the medieval era through the various empires of the eastern Mediterranean such as the Seljuks and Ottomans, medicine and Islam became near-inseparable, with hospitals (*bimaristan-s*, *darüṣṣifa-s*) built with adjoining mosque complexes and medical schools for training physicians in the joint tradition. And while Galen himself says little of psychological illness, Islamic medicine did recognize and heal mental illness. The Ottomans in particular had a large lexicon for referring to melancholy, which referred to any illness resulted from the imbalance of black bile.⁸² An excess of black bile, melancholia was treated with music and herbal medicines,

⁸¹ Karim Mitha, “Conceptualising and Addressing Mental Disorders Amongst Muslim Communities: Approaches from the Islamic Golden Age,” *Transcultural Psychiatry* 57, no 6 (2020), 766.

⁸² Gill, *Melancholic Modalities*, 12. Another testament to the prevalence of diagnoses of melancholia may be seen in the way it was treated. According to Gill, “[t]he healing that took place with melancholic music during the Ottoman era always happened in community (e.g., social, collective environments in hospitals) and not on an individual basis, demonstrating that melancholy was something Ottomans believed should be experienced in and with community”

as well as fragrance, oils, baths, enemas, and purging. Melancholia was often diagnosed alongside disorders such as mania, seen as an advanced stage of melancholia, for which the answer was to shave one's head. Because of the breadth of symptoms, all four humors ultimately had some connection to melancholia, making treatment difficult and necessitating its unique application for each patient.⁸³ While these hospitals treated a variety of patients, and included specialist surgeons among their staff, mental illness played a large role in their daily operations, well as in their presentations as museums today.

Our primary account of music therapy in Ottoman hospitals is the travel writer Evliya Çelebi, whose 17th century travelogues included the description of at least two hospitals visited by musicians three times a week. Çelebi's accounts are heavily cited because we lack other accounts, and those practitioners of Turkish classical music therapy discussed in this project do not generally read Ottoman, as such historical research requires. Even while Turkish scholars have published work on the history of music therapy, contemporary museum presentations of these hospitals, such as those at Edirne and Amasya, rely heavily on Çelebi as a well-known historical figure for the public and emphasize the use of music therapy specifically for melancholia and other mental health issues, despite historical sources outlining their other potential uses.⁸⁴

(2017, 157). Gill and Mitha both note the difficulty in discussing such diagnoses in historical context due to varied and convoluted vocabulary.

⁸³ Michael W. Dols, *Majnun: The Madman in Mediaeval Islamic Society* (Oxford: Clarendon Press, 1992).

⁸⁴ Several Turkish scholars have provided overviews of Turkish classical music therapy practice. As in the previous chapter, many of these histories are overviews with a long-form perspective. Pınar Somakçı, for example, provides an account that too “continues from at least 6000 years ago,” beginning with the Turks of Central Asia and the incorporation of musical instruments from various ethnic-cultural groups. Somakçı's account cites and is similar to those other foundational histories from the late 20th century, such as Şahin Ak and Rahmi Oruç Güvenç. Others, such as Haşmet Altınölçek, position this history amidst broader histories of circulation in the

Contemporary categorizations of mental illness are all quite new, and the mental health field remains today underfunded and a site of abuse due to lack of understanding of its mechanisms and treatment options. This makes it difficult to study mental illness in the past, where social conditions and medical approaches to the mind and body were quite different, even if the associated stigma remains. Studying and treating mental and neurological health today, even with the musical methods of the past, is thus a relative translation at best and must accommodate current understandings of the mind. The music therapy Çelebi witnessed at Edirne, for example, takes place in an acoustically designed dome-shaped room in order to immerse the patient in sound. Such logistics are no longer possible under contemporary models of biomedical practice, and as our understandings of the mind have changed, so too have our quotidian interactions with sound—from live performance to highly-compressed audio files. These changes are discussed below and in Chapter 5.

3.2 Active/Passive Listening

During my time in Istanbul, it became clear to me that Turkish classical music therapy practice is highly stratified. For the researchers and physicians whom I interview, their use of the music was unsurprisingly derived from biomedicine's epistemology. That is, their studies were most often designed in such a way that reflects the classical scientific method: highly controlled space and pool of participants and music as the isolated variable. Music functioned much in the same way as

Mediterranean, particularly ancient Greece and Egypt, as within human origin stories of Africa (see Chapter 2).

a pharmaceutical or other medical intervention would: vitals are taken and closely monitored, the musical intervention takes place for a specified amount of time, and vitals are again taken after. For the patients, listening to the select *makam*-s was certainly meant to be a break away from the anxiety that comes with hospitalization, but for the researcher, it is an intervention on the biologized body in search of evidence to support their hypothesis.

The other approach is that of TÜMATA, the organization founded by Rahmi Oruç Güvenç to support ongoing research and outreach regarding the rich musical history of Turkic society, including the proliferation of what he called “ancient oriental music therapy.” This includes *Turkish classical music therapy*, as well as dance and other practices purported to descend from Central Asian shamans. TÜMATA is cited in nearly every research paper as the authority on pairing *makam* with physiological ailments. They also hold days- and weeks-long *sema*’ rituals with open doors, allowing the public to come, play music, whirl like a dervish, and be healed. They regularly hold concerts with music and dance in Ottoman costume, as well as healing workshops. While the organization was founded by a physician and they have collaborated with physicians all over the world during the last half-century, TÜMATA is far less concerned with providing quantifiable evidence. For them, the knowledge is in the music, and the evidence is in the experience reported by their participants and patients.

Between these two positions lies a major difference in what it means to listen, and how these modes open us to, or close us from, the potential to be healed. This potentiality is entirely linked to *how* we listen. For physicians, this means “active auditory” or “engaged” listening, as opposed to passive listening. For TÜMATA, the distinction is less important, or makes less of a difference on the efficacy of healing. For musicians or those who are otherwise “deep listeners,” in Judith Becker’s use of the term, the phrase “active listening” comes with obvious connotations

of cognitive attention: you are focused on listening closely. It contrasts with “passive listening,” which we might characterize the inattentive consumption of music, listening to it in the background as we engage, attentively or too passively, in another task. “Passive” is of course not truly passive, as it still requires a great deal of neurocognitive action, but “active auditory” here can refer to intentionality, attentiveness, and even emotional investment in the process of listening as one of relationality and connection.⁸⁵

I am not so interested in thinking through listening as a philosophical exercise here as I am thinking about how differentiated modes of listening (active and passive) are employed to denote varying relationalities between listener and music—a small but important difference. Whereas philosophers and musicologists have spent decades on the project of understanding listening as it relates to individual subjectivity (Jean-Luc Nancy), the musical work (Theodor Adorno), and epistemology (Karen Barad, Jane Bennett), my interlocutors are rather interested in the role of attention, intention, and focus as forces of listening-qua-healing. Of course, these things *are* a philosophical project and *do* communicate values and beliefs about the body and sound as social and political entities. And while these values emerge from particular genealogies of thought, it is beyond the scope of this chapter to address them deeply. I do, however, draw on this literature as necessary in order to provide a cohesive account, if not a full lineage (Chapter 5 addresses the philosophy more closely through a theoretical account of sonic materiality).

Modes of listening were a common topic during interviews with researchers, but “passive” listening (as the constitutive other of “active listening”) was rarely, if ever discussed. Active

⁸⁵ I specify “active *auditory*” in order to make clear that listening was only ever discussed or conceptualized as a task for the ear. As discussed here and in Chapter 5, all biomedical studies used headphones, which excludes d/Deaf or hard of hearing patients from the study. See “Music Segmentation and Cognitive Methods” below and Chapter 5 for more on this.

listening was a default mode of engaging music because it falls within yet another binary: active and passive music therapy. Active music therapy involves the patient taking part in music-making, whether it be an instrument, voice, or dance/movement; it involves moving the body. The majority of my interlocutors study passive music therapy: patients resting and listening to the music. During the latter, however, doctors emphasize that the patient be still, relaxed, and focused on the music (passive in reception, but active in listening). Çoban tells me that in psychotherapy, this is not casual listening to random music chosen at will by the patient, but rather is a highly organized and intentional intervention that is derived not only from patients' music preferences, but also the music therapist's knowledge of the individual's condition. He says,

What does a music therapist do? As someone who knows the music you listen to, as someone who knows the story of your past, they can make that music penetrate you through certain associations and awaken emotions within you, helping you to talk about them. *This* is therapy. Otherwise, if you simply listen to music, saying "I listened for half an hour, I was very relieved, thank you, God bless you," this is not receptive music therapy. Receptive music therapy is a process that the therapist and patient choose together, and the therapist occasionally gives instructions to draw associations from the patient's story while listening to the music. This allows them to express themselves through the music. So, it is very active. It is not like sitting in a cafe and listening to music.⁸⁶

Çoban here is referring to a psychotherapeutic practice that includes *guided* listening as a way for the (music) therapist to assist the patient in using music as a tool for accessing their emotional state. There is great deal of active engagement here on behalf of the therapist in addition to the patient, and this is unique to his explanation. During other studies discussed below, researchers did not engage with patients *at all* during the music therapy intervention for fear of disrupting the patients' relaxation. And the goal is different entirely: while Çoban refers to guiding the patient through a mental-emotional discussion, the others are attempting to apply the music towards a

⁸⁶ Adnan Çoban, interview by author, January 23, 2020.

measurable *physiological* goal. But his sentiments about the engaged and active approach to listening on behalf of the patient have their parallels in other studies.

During all but one study discussed in this dissertation, patients listened to Turkish classical music on an mp3 player with headphones. The question of musical materiality and sound quality as a component of musical healing in live and recorded contexts is discussed in Chapter 5, but the headphones serve another function: to block out sound. Headphones serve to provide listeners a private listening experience, providing what Michael Bull characterizes as an “auditory bubble” insulated from the sonic world around us.⁸⁷ And I have argued elsewhere that this auditory bubble also functions to reorient ourselves to the space around us, providing new connections rather than cutting them off.⁸⁸ In the case of headphone use during studies on Turkish classical music therapy, their use seems to tend towards Bull’s theory. During interviews, interlocutors all acknowledged that of course live music would impact patients differently, and that headphone use was an important part of logistics and cost-saving (see below). But some adopted a slightly stronger stance: that perhaps, the headphones were a *better* option than using live music because they can block out other noise. I argue that the use of headphones as a barrier between sonic worlds is an important part of the active/passive listening dichotomy in its representation of musical healing as requiring not only a certain degree of active listening and attentiveness, but a particular sonic world conducive to healing.

Hospital wards are auditory by nature: more patients than physicians and nurses means that eyes cannot be on everyone. The sounds of beeping monitors alert staff to those in need of

⁸⁷ Michael Bull, *Sound Moves: iPod Culture and the Urban Environment* (New York: Routledge, 2007).

⁸⁸ See Moon, 2018.

attention, a patient's condition quantified by a machine and transduced into sound with a widely understood meaning. Monitory and diagnostic listening, as Tim Rice characterizes them, "both underpin and undermine the production of medical knowledge."⁸⁹ As shown by large swaths of the sound studies literature, technological development, particularly since the 19th century, has drastically shaped the hearing/listening subject and audition as multi-faceted and often self-contradictory. For Rice, the stethoscope amplifies and gives access to otherwise near-inaudible sounds. As Steingo and Moreno note, the use of tools such as the listening cone in midwifery practices not only amplifies the sound of the fetal heartbeat but plays a critical role in the development of subjectivity.⁹⁰ Sound and technology play these monitory and diagnostic roles of health, particularly in hospital settings. My interlocutors extend this further with sound *specifically mediated and contextualized by technology* by placing the patient in the position of listener while maintaining the nurse/researcher as monitor.

Patients of course too reside in the center of this sonic world, and physicians have long been concerned with reducing such sound-induced stress on patients. In a substantial overview of medical literature, architect Timothy Onosahwo Iyendo (based in Turkish Northern Cyprus) argues that while sound pollution contributes to a negative environment and potentially poorer health outcomes for hospital patients and staff alike, music might be an effective tool for masking such

⁸⁹ Tim Rice, "Listening," in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham: Duke University Press, 2015), 105. See also Tim Rice, *Hearing and the Hospital: Sound, Listening, Knowledge and Experience* (Canon Pyon: Sean Kingston Publishing, 2015).

⁹⁰ Gavin Steingo, "Listening as Life: Sounding Fetal Personhood in South Africa" *Sound Studies* 5, no 2 (2019): 155-174. Jairo Moreno, "Antenatal Aurality in Pacific Afro-Colombian Midwifery," in *Remapping Sound Studies*, ed. Gavin Steingo and Jim Sykes (Durham: Duke University Press, 2019), 109-134.

noise.⁹¹ Two approaches are possible: the use of headphones to block out “external noise,” as Korhan characterizes it to me in our interview, or to use sound over a central system to mask other sounds (potentially contributing to an even greater cacophony).

Beginning with a study on the latter: Kılıç et al note that “the emergency department is a noisy environment by nature and may cause anxiety in patients,” and that other studies had found the use of music in emergency departments over the sound system to have “a relieving effect on the levels of noise and stress in patients.”⁹² Random days were selected to play music in the emergency room, and patients who happen to arrive that day were screened for eligibility. All patients conformed to the “code green” classification of the Turkish medical triage system, meaning they were conscious, stable, and reporting only minor injuries such as pain in the throat, back, head, or joints, chronic pain, soft tissue injury, and similar low-risk conditions.⁹³ Unlike other studies below and in the next two chapters, pain was measured here only through self-reported systems such as the State Trait Anxiety Scale and the VASP, a test wherein patients indicate their pain level by drawing along a 10-centimeter line, with the location of the marking relative to 0 (no pain) becoming the quantified pain indicator. Statistical analysis revealed to the researchers that music did have an effect and anxiety was higher in the control group which did not hear music upon their arrival.

While a valuable contribution and invitation for further research, we can at best extrapolate a correlational relationship between music and pain levels. Given that patients did not have a

⁹¹ Timothy Onosahwo Iyendo, “Exploring the Effects of Sound and Music and Health in Hospital Settings: A Narrative Review,” *International Journal of Nursing Studies* 63 (2016), 82-100.

⁹² Serap Parlar Kılıç et al, “Effect of music on pain, anxiety, and patient satisfaction in patients who present to the emergency department in Turkey,” *Japan Journal of Nursing Science* 12 (2015), 50.

⁹³ Serap Parlar Kılıç et al, “Effect of music on pain, anxiety, and patient satisfaction,” 46.

choice in listening to music, and the music was already playing during their arrival, the researchers note that they are limited in the claims they can make without comparison of the pain prior to music intervention. Additionally, without physiological markers such as heart rate, blood pressure, and oxygen saturation in addition to the quantified self-reporting systems, it is difficult to make a claim to music's efficacy. This is compounded with a lack of recognition of how music over a central sound system contributes to the noise level within the department. A comparison between this and the use of headphones would be helpful.

According to Korhan, who contributed to the study by Kılıç et al, “the environment of the emergency room requires [music over a central system]. Due to circulation, it is suitable for that environment. It is effective there.” By “circulation,” Korhan refers to the constant movement of patients, visitors, and hospital staff, in contrast to a ward in which patients are relatively stationary in their rooms. However, she says, “it is more effective with headphones.” In her view, the efficacy of music therapy is tied to active and engaged listening, in the patients’ ability to focus solely on the music without other sonic distractions.

As you know, when you listen to music with headphones, the headphones eliminate all external noise. The person is listening *directly* to the music. For example, when you use an instrument to deliver music therapy rather than headphones in an intensive care unit or in the [emergency room] environment, other sounds can be mixed in too. The important thing is to block out other sounds, to make the therapy most effective.⁹⁴

Headphones serve several functions. Beyond the questions of logistics and cost (discussed below), the headphones facilitate active engaged listening by eliminating other sonic stimuli. Other studies, such as those by Eylem Toker and Nuran Kömürcü discussed in Chapter 4, specifically note that patients were asked to empty their bladder prior to music therapy interventions in order to avoid

⁹⁴ Esra Akin Korhan, interview by author, February 10, 2021.

discomfort as a distraction. That study also noted that during the 30-minute music therapy intervention, there were to be no other interventions by hospital staff. Reflective of both the active listening model and the biomedical model of maintaining an “uncontaminated” study (“how can we measure its true efficacy if the patient is interrupted?”), these studies set up particular listening environments that are meant to be as conducive as possible to sound healing. Put another way, the efficacy of sound healing is measured along a spectrum, and progress along this spectrum is ostensibly influenced by one’s ability to listen in an active and engaged way, unimpeded by other sensory stimuli.

This view, however, is not taken as paradigmatic—TÜMATA takes a different approach. According to Azize, active listening is only one part of the process. For those receiving passive music therapy, it is often guided in a similar way to Çoban’s description above. Taking a less clinical approach (even within hospital rooms), Azize tells me that their guided listening sessions for receptive music therapy include visualization as a tool for encouraging both emotional and physical healing. These deep visualizations would sometimes lead patients to falling asleep, but according to Azize, it doesn’t matter. She recounts for me the following intervention:

But what happens very often is that during receptive music therapy, people sometimes went into a very deep sleep, which doesn’t matter really because the music is entering the body and the ears anyway, and maybe their subconscious. And it was amazing to hear what kind of images people see during this receptive music therapy. Also, a lot of them lose the feeling of time and space. We had, for example, one woman in Spain: she told us after therapy that she was going into a river—we always start with an image of a river, “imagine a river, the water is a nice temperature, and you are in a side river, and you are floating slowly, slowly into the big river.” That’s the suggestion in the beginning before we start to play. And she said “yes, I was beside the river and then I passed the river” and then she started to journey, and she was telling what was happening in this journey. We played maybe thirty or thirty-five minutes. She had a story, you could write a book of it, you know? And then she came back and she went back through the river and the moment she arrived on the other side; the music therapy was finished. How can that be? How can it be?

She didn't know how long we were playing, she was not in her mind, but how can it be that the story started and finished? So there is something happening.⁹⁵

Knotted within this incredible story are questions of active and passive listening, consciousness and musical cognition, the materiality of sound and its effect on the body, and spirituality, magic, and miracles. And these seem to paint a picture quite different than those above, even if her story too takes place in a hospital room. Of particular interest here is the claim that a patient doesn't necessarily need to be awake, that sound's material-vibrational force enters the body regardless of one's conscious awareness. "The music is really the key," she says. Far from making a claim that music is the sole agent within this interaction, this account raises complicated question on the nature of the conscious mind and music cognition. How does our brain and body process and respond to sensory stimuli when we are asleep or otherwise incapacitated? What roles do our conscious attention and active engagement really play in the process of cognition and bodily response?

These questions remain unanswered by cognitive science, but the following section will address how current cognitive models inform and work an understanding of how we are affected by music. From Azize's account, however, we learn that there is great power in music therapy, even if we cannot yet parse how the brain, the nervous system, the environment, and sound all work together in enacting this power. This does not discredit or deny the relevance of the biomedical work and its focus on attentive, engaged listening. Every single interlocutor (Azize included) emphasized that the greatest strength of music therapy practice is its adaptability to the individual needs of a patient. As will be explored in the final section, the biomedical institution is in the position of operating within particular logistical and epistemological boundaries that dictate

⁹⁵ Azize Güvenç, interview by author, February 26, 2020.

how interventions take place, but the emergent potential of music therapy practice is located precisely in its ability to work within and between existing structures of care. Rather than thinking of active and passive listening as an either/or that is solely responsible for the efficacy or failure of music therapy, this framework is helpful in analyzing how the mechanics of each study reproduce or break from assumptions of the bodymind's separation, music's immateriality, and so on.

3.3 Cognition and Pain: Case Studies in Listening

The following two sections introduce my primary case studies. The first is a study in cognitive psychology that asks how microtonal *makam* melodies are perceived by listeners of varying backgrounds. Importantly, it addresses the question of enculturation in listening and provides insight into how we learn to perceive and discern music within distinct musical cultures. In tandem with Denise Gill's notion of *biaurality*, this study allows a model of music cognition based in sociality and formalizes structures of education to emerge. As a corrective to biologically reductionist models of cognition that deny the role of environment and culture, these studies in both qualitative and quantitative terms act as the first steps towards an understanding of how we perceive, understand, and *relate to* the musics that we hear.

The second section addresses case studies on Turkish classical music and pain. In thinking about the processes and contexts within which music cognition occurs, somatic experience like pain raises the question of the body's role in cognition, and how music can induce analgesia (pain relief) through cognition. The majority of the studies presented here, as well as those discussed in Chapter 4, use only two *makam*-s: *buselik* and *nihavend makam*-s. Is the specific Ottoman

characterization of the musical structure of these two *makam*-s affecting the body differently? Or is the *makam* irrelevant, contrary to the Ottoman practice? Following the first section's explication of current cognitive understandings of *makam* music perception, this analysis of musical analgesia demonstrates the how the ethnomusicological perspective on music and body can inform cognitive and neurological work on music through socio-cultural analysis. Drawing on cognitive ethnomusicology and psychology, I argue that studies on music and pain benefit from an embodied model of cognition inclusive of social and cultural models.

3.3.1 Music Segmentation and Cognitive Methods

Listening as a learned practice has been studied by humanists and social scientists, surely, but also in cognitive psychology, where near-identical results can be found in relative epistemic terms. In their 2017 study, Esra Mungan, Z. Funda Yazıcı, and Mustafa Kaya examine musical segmentation as a part of perception, specifically asking what degree of familiarity it takes for a listener to accurately segment (identify distinct structural elements in) a recording of microtonal Turkish classical music. This study is partly in response to a study by Carolyn Drake and Daisy Bertrand, in which the authors propose five temporal processes that might be “candidates” for status as cognitive universals. That is, they wish to argue that “[w]e tend to group into perceptual units events that have similar physical characteristics or that occur close in time.”⁹⁶ Based on the “surface characteristics” of a musical example (timbre, pitch, intensity, etc.), listeners perceive boundaries at moments where they hear change in these characteristics. Drake and Bertrand, and

⁹⁶ Drake, Carolyn and Daisy Bertrand, “The quest for universals in temporal processing in music.” *Annals of the New York Academy of Sciences*, 930 (2001), 20.

subsequently Mungan, Yazıcı, and Kaya, claim this universal is reflective of the principles of Gestalt psychology: the idea that humans perceive forms and patterns rather than discrete components. This is appealing to researchers as a potential universal facet of cognition in part because it is relatively easy to test in cross-cultural contexts with music and a simple online sequencing method.

Listeners in Mungan et al's study used a computer program to segment (i.e. to denote structural boundaries in) a microtonal musical example only by listening; they were not supplied with a musical score. Mungan, et al included in their subject pool trained Turkish *makam* musicians, Turkish non-musicians, and "Western" listeners (European Erasmus students)—the last of whom, regardless of musical training, are characterized by the researchers as potentially unable to "segment culturally unfamiliar material." Participant's segmentation results were then compared to a segmentation of the same recording provided by two independent *makam* experts, both of whom provided two segmentations each: "first on perceptual grounds and in a second run on musicological grounds."⁹⁷

Two descriptors for classifying the material stand out: "culturally unfamiliar," and "perceptual/musicological." Starting with the latter pair, "perceptual" here stands in for "naturalized," and "musicological" for "cultural-analytical." Studies on sound run the risk of naturalizing listening as a process inherent to the body and operating in specific ways regardless of cultural context, disability, mediation or myriad other factors that don't *affect* listening but *construct* it. The language of "perceptual" here, particularly when used as a contrast to "musicological," seems to set up a nature/culture binary. "Musicological" here is the "culture":

⁹⁷ Esra Mungan, Z. Funda Yazıcı, and Mustafa Kaya, "Perceiving Boundaries in Unfamiliar Turkish Makam Music: Evidence for Gestalt Universals?" *Music Perception* 34, no 3 (2017), 268.

representational, signifying, and hermeneutic. By having *makam* experts segment the musical example twice, researchers hoped to “‘decontaminate’ the perceptual markings from the musicological influences as much as possible, even though we are aware that a complete exclusion of musicological influences is impossible.”⁹⁸ That is, remove culture from nature, remove theory from the (assumed stable) object. Further convoluted by the recognition that exposure to a musical culture is a form of enculturation through which one builds cognitive frameworks for musical structure and style, the claim that perceptual versus musicological modes of listening can be separated in any way points to a key disciplinary difference between the humanities, social sciences, and natural sciences.

Placing these two types of listening into opposition brings us back to the first mode of classifying the listening material: as “culturally unfamiliar” to one subset of the study participants. If, as noted, “even untrained listeners are heavily encultured into rather complex aspects of their musical culture through constant exposure” as Mungan et al claim, then the key difference between the three study groups would be that Turkish non-musicians are able to segment melodies with a greater resemblance to the Turkish musicians than to European students.⁹⁹ Only European students would then be “culturally unfamiliar” with the musical recordings, and thus unable to segment them with the accuracy of the other two groups. According to the authors, this would be the case only if such segmentations “are mostly drive by *implicit musical knowledge-based schemata*, i.e., top-down processes acquired through musical enculturation that do not necessitate formal makam

⁹⁸ Esra Mungan, et al, “Perceiving Boundaries in Unfamiliar Turkish Makam Music,” 268.

⁹⁹ Esra Mungan, et al, “Perceiving Boundaries in Unfamiliar Turkish Makam Music,” 267.

training.” But if the inverse is true, if online segmentations are driven mostly by “*surface features*, i.e., bottom-up processes,” then all three groups would be expected to perform similarly.¹⁰⁰

Taking the question of cultural un/familiarity one step further, the authors differentiate between implicit knowledge gained through enculturation and explicit knowledge gained through formal training. If explicit and implicit knowledge are indeed separate, then enculturation does not function in such a way that excludes European students and not Turkish non-musicians. Under this rubric, musical enculturation is not the passive process of osmosis we may expect but occurs only through the *intentional and engaged* act of study, including listening (which is then difficult to differentiate from explicit knowledge). And the results were ultimately mixed: researchers found some basis that trained *makam* musicians performed better in some cases. However, this wasn’t true across the entire study. A large portion of the data set seems to indicate a basis for claiming that there is often not a significant difference between the three groups. While trained musicians’ top-down knowledge of *makam* likely helped their performance, the researchers noted “the more structured nature” of their musical examples may have given surface-level clues to those for whom Turkish classical music is “a completely foreign musical culture.” These clues lead to the conclusion that “[i]t may be this lack of a dissociation between music-structural segments and surface-feature-based segments in this mostly 19th century Turkish makam music which made it possible for Western listeners to perform so well and indistinguishably from the Turkish nonmusicians.”¹⁰¹

Listening appears in this study to be an intersection of cognition, enculturation, and education. It is a process of the body, but it is not a naturalized mode of sensation free of cultural

¹⁰⁰ Esra Mungan, et al, “Perceiving Boundaries in Unfamiliar Turkish Makam Music,” 269.

¹⁰¹ Esra Mungan, et al, “Perceiving Boundaries in Unfamiliar Turkish Makam Music,” 287.

context. Rather, it is a learned and ongoing process defined through social, political, and cultural frames. Lyle Davidson and Bruce Torff frame the role of culture in cognition as a constitutive, “meaning-making force” that provides one with a ““tool kit” of concepts, categories, symbol systems, tools, conventions, values, [and] aesthetics.”¹⁰² They provide an example of a 1977 study in which surface-level results indicate that non-musicians are better able to perceive a given note’s sharpness and flatness than musicians. Davidson and Torff note, however, that the study ignores *the particular manner* in which musicians listen to and perceive notes as relative to one another rather than as discrete units of sound. While pitch discernment has been a staple of research in cognitive psychology, it naturalizes the division of an octave into twelve tones and fails to address how each of those twelve tones functions relative to one another. To address just intonation or microtonal musical systems would require massive reconceptualizing.

We must compound listening and musical/auditory cognition with neurophysiology as well, with listening being contingent upon the particularities of one’s body rather than the normativities of ableism. There is a dearth of music cognition research involving d/Deaf subjects or musicians, and research on music and cognition in those with dementia or Alzheimer’s is able to offer very few answers, only (quite amazing) anecdotal evidence. Here, the power of ethnographic/qualitative research offers the broader literature insight musics’ potential for coping with illness. Ethnomusicology, of course, does not have answers for *how* and *why* music seems an exception within the realm of cognitive disability; neither do the natural sciences have much of an answer. But by attending to the individual histories and contemporary conditions of a given individual, the cultural particularities we are trained to see and analyze might give rise to

¹⁰² Lyle Davidson and Bruce Torff, “Situated Cognition in Music.” *The World of Music* 34, no 3 (1992): 127.

possibilities for future research in the cognitive sciences. Becker notes that as ethnomusicologists find our home in axiomatic relativism, our critiques of quantitative methods and scientism may at times be a result of science's inaccessibility, and that perhaps "we distrust the whole concept of statistical verification" because we equate it with "the *truth value*" of an assertion.¹⁰³

Quantitative models have their limits, and ethnomusicologists are uniquely qualified to work beyond those limits. But in order to make an offering to those working in the quantitative realm, we need to develop an understanding of not only their limitations, but their strengths. While I sat in Esra Mungan's office at Boğaziçi University in the summer of 2018, she expressed to me some skepticism, certainly, of the ability of a *makam* to heal physiological ailments, especially when particular *makam*-s are purported to heal particular parts of the body. When asked about the relationship between her work in cognition to such biomedical studies, however, she didn't dismiss a connection outright as I perhaps naively expected. Instead, she characterized her work as "just one small link in the chain" of our understandings of music cognition and the sound-body relationship more broadly. This type of "tenacious reductionist perspective," as Anne Harrington characterizes it, is a mode an inquiry rather than a worldview.¹⁰⁴

Recent collaborations between psychologists and ethnomusicologists have attempted to produce sets of guidelines, best practices, or considerations for conducting work on musical cognition in cross-cultural perspective.¹⁰⁵ Jacoby et al point to interdisciplinary collaboration as

¹⁰³ Becker, "Ethnomusicology and Empiricism," 495.

¹⁰⁴ Anne Harrington, "Enabling Strategies? A Great Problem Is Not Enough," in *Pain and its Transformations: The Interface of Biology and Culture*, ed. Sarah Coakley and Kay Kaufman Shelemay, (Cambridge: Harvard University Press, 2007), 22. Quoted in Becker, "Ethnomusicology and Empiricism in the Twenty-First Century," 479.

¹⁰⁵ Most work in this area is conducted by those that Jacoby et al call "WEIRD participants—that is, individuals who hail from Western Educated, Industrialized, Rich, and Democratic societies," and their musical examples are then drawn from associated traditions with its constitutive

being the most important part of doing such research. And this collaboration represents an important shift from earlier work that delineates between the disciplines and approaches with the language of “empiricism,” defined by both psychologists and ethnomusicologists as most nearly meaning “quantitative.”¹⁰⁶ Advocating for interdisciplinarity in music cognition means acknowledging ethnographic research and the information it gleans *as empirical data* that contributes to understandings of human behavior. Empiricism will be addressed further in Chapter 4, but briefly: quantitative and qualitative work are both modes of empiricism that operate on different scales and in different terms.

Understood in this way, music cognition work can enlighten or complement our work in the humanities and social sciences, as Mungan et al do with Gill’s work on bi-aurality. Epistemological difference provides fertile ground for critique and the excavation of disciplinary assumptions and biases, as well as identifying sociopolitical contingency and propelling forward diverse epistemological approaches to music. And the stakes couldn’t be higher: if music *is* effective for enhancing memory and/or mitigating change in auditory cognition related to age, then ethnomusicologists’ potential to contribute the critical perspective of music, listening, and cognition’s sociopolitical contingencies is tantamount.¹⁰⁷

harmonic structures. Nori Jacoby et al, “Cross Cultural Work in Music Cognition: Challenges, Insights, and Recommendations,” *Music Perception* 37, no 3 (2020), 185-6.

While projects such as the Natural History of Song, run by Samuel Mehr in The Music Lab at Harvard, attempt to study diverse musical examples towards a theoretical model of musical universals, understanding musical cognition within diverse musical cultures requires highly focused work in those specific settings. Mungan et al are an example here.

¹⁰⁶ See Judith Becker, “Ethnomusicology and Empiricism in the Twenty-First Century.” *Ethnomusicology* 53, no 3 (2009).

¹⁰⁷ On the potential benefits of musical training on auditory cognition, see Claude Alain et al, “Turning Down the Noise: The Benefit of Musical Training on the Aging Auditory Brain,” *Hearing Research* 308 (2014), 162-173.

As the next section will demonstrate, current research on music and pain management offers promising quantitative evidence for music's healing efficacy. But it also raises key questions about the relationship between listening, cognition, affect, and pain. Many of these questions remain beyond the scope of this dissertation, but it remains helpful to parse the complex understandings of pain and listening within the body. Just as culturally situated epistemology shapes the questions we ask and how we go about answering them, pain as a somatic experience can powerfully guide us and inform how we conduct research on the relationship between sound and body.

3.3.2 Feeling Pain, Hearing Relief in *Makam* and *Usûl* Structure

I spent roughly 15 minutes milling about the large waiting room of a psychotherapy practice in *Nişantaşı*, a centrally located and increasingly sought-after neighborhood in Istanbul. One side of the room includes several leather sofas and chairs surrounding a large coffee table that is neatly piled with magazines, journals, and books. The other side of the room includes a smaller sitting area with a coffee and tea station and a bookshelf. I pick up Adnan Çoban's *Müzikterapi: Cana Şifa, Ruha Gıda* and flip through it. I am familiar with this book, having read, underlined, and highlighted my own copy. Flipping to the fourth chapter, "Music Therapy in Psychiatric Illness," I peruse sections outlining "The Stages of Application of Music Therapy in Psychiatric Clinics"

On anecdotal and empirical evidence of music's effects on cognition and Alzheimer's, see Katlyn J. Peck, Todd A. Girard, Frank A. Russo, and Alexandra J. Fiocco, "Music and Memory in Alzheimer's Disease and the Potential Underlying Mechanisms," *Journal of Alzheimer's Disease* 51 (2016): 949-959.

and specific recommendations for using music therapy with patients diagnosed with clinical depression, schizophrenia, anxiety, eating disorders, and personality disorders.

Çoban begins the section as follows:

The Stages of Application of Music Therapy in Psychiatric Clinics

In order to meet each individual's needs, there are three stages for determining the application of music therapy in a psychiatric clinical setting:

- 1) Supportive and active-oriented music therapy;
- 2) Educational, treatment process and insight-oriented music therapy; and
- 3) Regulatory, music therapy oriented towards expressing disturbing emotions (analytical and catharsis-oriented music therapy)

Çoban explicates each stage, and before diving into condition-specific explanations and recommendations, he gives a warning regarding cultural context: Muslim or Christian patients may require culturally specific recommendations for treatment; music may not be an appealing option for every patient; and treatment goals should be oriented towards the patient with significant regard for their beliefs, customs, and practices. Music therapy as psychiatric treatment is culturally contingent.

I turned around to find the receptionist inviting me down the long hallway to the large office at the end, and I entered to find Dr. Çoban finishing a conversation as he gestures for me to sit on a large couch across from what I assume to be his chair. Over tea and cookies we speak about that book from the waiting room—a book that figures prominently across my ethnographic interviews—as well as the way the book has been taken up versus his intention in writing the book. A stark difference, certainly.

During almost every interview I completed in Istanbul and over Zoom, interlocutors referenced or pulled off their bookshelf Çoban's *Müzikterapi*, asking if I had read it and citing it in their beliefs in *Turkish classical music therapy*. As noted above, Çoban lays out in this book specific recommendations for how to effectively use music therapy in clinical settings, but he also

provides a history of music therapy in the global perspective. This includes sections on ancient Greece, Rome, China, and Egypt, as well as medieval Europe. He traces the development of music alongside Christianity in early modern Europe, and the developments of what we today recognize as music therapy in the 20th century United Kingdom and United States following World War I. The majority of Çoban's history, however, covers "Music Therapy Amongst Turks" (see Chapter 2). From Central Asia to the Levant during the Golden Age of Islam, through the Seljuk era and into the Ottoman Empire, the rich history of Turkic music therapy remains central to the development of the practice on a broader scale. Drawing on these other traditions and contributing to Euro-American models (according to Çoban), Turkic music therapy remains at the fore.

I was shocked, then, during our interview when Çoban mentioned that he felt music therapy was misunderstood in Turkey, that it was being touted as something it was not. When I asked for him to elaborate, he said the following:

There is information in Turkey, something that you too encounter as someone working in the field of ethnomusicology. There are a few ideas thought to have come from Farabi, things like the idea that *rast makamı* gives feelings of joy, that *uşak makamı* gives feelings of joy. It was later revealed that this information was inaccurate. Even while writing the book, I wrote it like this as an historical joke, but in the next edition I removed this information. There was this perception that when it comes to music therapy, there is this weird, one-page thing: "This *makam* for Aries, *Hüseyni makamı* for Leo. This is of course the reason that music therapy is perceived as an alternative method. This is nonsense, of course. It is impossible to cure someone's cerebral palsy by having them listen to *rast makamı*. Maybe you can comfort that person, but you cannot cure their paralysis, their brain tumor. This is a big claim without scientific evidence. So there was resistance and it was perceived as charlatanism. For this reason, I did the work on my book like this: the thing we call music therapy is not like this. Music therapy is a classical therapy method, a practice with its own rules.¹⁰⁸

In presenting this history in the book, Çoban had no intention of *advocating* for *makam*-based music therapy. Incidentally, the book became not only a source of many questions for him at

¹⁰⁸ Çoban, interview, 2020.

conferences (such that he clarified his stance in the second edition/printing to distinguish historical from pragmatic practice), but also a reference for many of the studies examined here. And as this dissertation is not about proving or disproving the efficacy of *Turkish classical music therapy*, neither are any of the studies discussed here are either. Individual *makam*-s themselves are never variables within the various studies, but are instead consolidated as a totalizing, single variable: “Turkish classical music.” According to Çoban, Turkish classical music can, and should, be substituted for musics personal to the patient—that is, assuming they adhere to a set of amorphous rules about temp (not too fast) and emotional impact (nothing too angry). Turkish classical music is not necessarily the most effective, to him, because it does not have any inherent quality of health, despite what some believe (and were led to believe in the first edition of his book).

Makam-s are presented in these studies as having these qualities, however. Some studies cite Çoban, and even more cite the Turkish Music Research and Promotion Group (TÜMATA). But no study compares *makam*-s in search of quantitative evidence of their unique efficacy for particular ailments. Eylem Toker tells me that to do such a study would be expensive, logistically difficult, and not necessarily that helpful. Korhan has likewise not done such a study but references a forthcoming article from her graduate student comparing European art music and Turkish classical music. No statistical difference between the musics’ efficacies was found.

In this section, I discuss how the cultural influence on cognition, as well as unanswerable questions about the relationship between cognition, affect/emotion, and physiology, are critical frameworks for studies on music and pain. While Çoban explicitly disagrees with the idea that *makam*-s have intrinsic properties for healing, some researchers such as Esra Akın Korhan point to cross-cultural musical characteristics *also present in makam* that might in fact be related to musical cognition and physiological signs of anxiety and pain. Korhan made explicit to me that

the *structure* of their chosen *makam* is what heals, and that this healing property can be translated between musical traditions insofar as they approximate this melodic structure. This reference to the structure of the chosen *makam* appears implicitly in several other studies and is a recurring topic in ethnographic interviews.

Building on the previous section on cognition and enculturation, I examine *how* music is thought to heal in these studies, and think towards the question, “*who* can this heal?” My interlocutors’ answers are bound by the confines of scientific inquiry insofar as cognitive psychology doesn’t have clear answers on many of these questions. But based on their research, they make quite similar claims in publications and interviews about music’s function not only as a pharmaceutical interacting with the biologized body towards a predictable outcome, but also as a cultural object that, for reasons unknown, seems to offer positive results. Even as music remains an elusive object in these studies, it also remains the touchstone for inquiry.

It is difficult to clearly delineate “pain” is from anxiety and stress. Researchers draw primarily on quantitative assessment of patients’ conditions, and even qualitative questions are immediately converted into quantitative data, whereas our modes of describing pain in daily life rely almost entirely on language, especially the use of metaphor. Korhan et al in their 2011 article, for example, focus on the “physiological signs of anxiety,” whereas Kılıç et al, in 2015, study the “effect of music on pain, anxiety, and patient satisfaction” together.¹⁰⁹ Özer et al look at “the effect of listening to personal choice of music on self-report of pain intensity and the physiological

¹⁰⁹ Ersan Akın Korhan, Leyla Khorshid, and Mehmet Uyar, “The effect of music therapy on physiological signs of anxiety in patients receiving mechanical ventilatory support”, *Journal of Clinical Nursing* 20 (2011), 1026-1034.

Serap Parlar Kılıç et al, “Effect of music on pain, anxiety, and patient satisfaction in patients who present to the emergency department in Turkey,” 44-53.

parameters” in patients following heart surgery.¹¹⁰ Chapter 4 will discuss two studies with similar language: Toker and Kömürçü study the effects of music on “prenatal anxiety and stress,” and Kömürçü and Kaya studying how music decreases “both sensation and distress of labor pain.”¹¹¹ In his germinal medical ethnomusicological ethnography, Benjamin Koen too uses stress and its modulations as the *de facto* language/marker of physiological activity during musical-devotional healing.

Unique connotations notwithstanding, the three markers are measured through the same primary metrics: pulse, diastolic and systolic blood pressure, blood oxygen saturation, and respiratory rate. Studies specific to pregnancy used additional metrics to monitor fetal heartrate and fetal movement. These baseline metrics, most of which are taken at any ordinary doctors visit, are key windows into the potential for other conditions that require more extensive or invasive monitoring and testing. For this reason, changes in these metrics can be both incredibly nonspecific *and* the most pertinent piece of information a healthcare provider has. Abnormalities can occur quite regularly without signifying a deeper, hidden pathological root, but are typically understood to be a marker of *pain, anxiety, or stress*. “White coat syndrome,” for example, is a form of anxiety that accompanies doctor visits, and can result in increased heartrate and blood pressure on initial

¹¹⁰ Nadiye Özer et al, Effect of Music on Postoperative Pain and Physiologic Parameters of Patients after Open Heart Surgery,” *Pain Management Nursing* 14, no 1(2013), 20-28. While the article summary indicates the patients chose their own music, they were able to select only from a small collection comprised of Turkish classical music, folk music, or art music.

¹¹¹ Eylem Toker and Nuran Kömürçü, “Effect of Turkish Classical Music on Prenatal Anxiety and Satisfaction: A Randomized Controlled Trial in Pregnant Women with Pre-Eclampsia,” *Complementary Therapies in Medicine* 30 (2017), 1-9.

Candan Ersanlı Kaya and Nuran Kömürçü, “Effects of Education and Musical Therapy Given During Labor on the Process of Birth in Induced Primipara Pregnant Women,” *International Journal of Medical Science and Clinical Intervention* 4, no 3 (2017), 2797-2807.

examination. In addition to referencing one's subjective mental and emotional state, these markers are also broad categorizations of physiological signifiers.

Korhan explained it to me as follows:

...we know that pain [*ağrı*] and anxiety are interrelated conditions because they affect the automatic nervous system. So actually, in general, both are the physiological parameters of anxiety. What are they? Blood pressure, pulse rate, respiration, both affect these and they affect the pain. So actually, pain and anxiety are related concepts. As the pain experience diminishes, so does the anxiety.¹¹²

First, it is imperative to address that the “anxiety” referenced here by Korhan and others is not a clinical anxiety disorder. Rather, they refer to an anxiety that may be severe, to be sure, but is also situational rather than chronic. This anxiety is, quite importantly, not interchangeable with the pain that typically described somatic feeling, *but the two are intertwined and quite difficult to separate*. As deeply intertwined descriptors of experience in hospital settings, pain and anxiety (and stress) are often taken together connected and coexisting symptoms and are likewise treated together.

How, then, does music treat these conditions? When anxiety and stress are understood as conditions of the body rather than some separable mind, one can no longer take the conservative stance that music heals by making us “feel good” or “feel happy.” This, Çoban emphasizes, is not music therapy. Music therapy requires a set of standards, as with any other method of therapy. But it is easy to forget this; according to Nathalie Maitre and Shmuel Arnon, this happens due to the “almost universal appeal” of music. Our ability to process musical structures and elements is “so intrinsically enmeshed within our auditory experience as children and adults, it is easy to forget that to experience them positively requires complex neural processes.” Treating these conditions

¹¹² Korhan, interview, 2021.

with music means taking an integrated approach to health. This integrated approach does at times translate to a reduction of mental health to the purely biological (another dissertation entirely), but the dimension of the biological/physiological is a necessary entry point for the music therapist, even.¹¹³

Some biology (with the assumption of one's being normatively hearing): after sound is transmuted into electrical signals by the ear's stereocilia, it is perceived by the auditory cortex of the temporal lobe and/or occipital cortex (some neuroscientists claim that musicians hear with the occipital cortex rather than temporal lobe). This in turn stimulates several other areas of the brain: the thalamus, medulla, hypothalamus, midbrain, and pons. The right side of the brain stimulates a response in the limbic system, as well as the release of the neuropeptides enkephalin and endorphin. This is where the decrease in pain comes from.¹¹⁴ Music may also lower cortisol levels, which assists in reducing anxiety and encouraging relaxation.¹¹⁵ Myriad other brain structures come into play as well: the amygdala deals with emotional response and triggers, and the cerebellum coordinates movement and deals with physical memory, playing a role in the musical memory and ability of dementia patients. In short, it is a complicated process of deeply interconnected and simultaneous neurocognitive processes that are difficult to parse.

¹¹³ Nathalie L. Maitre and Shmuel Arnon, "Music therapy for neonatal stress and pain—music to our ears," *Journal of Perinatology* 40 (2020), 1734-5.

¹¹⁴ Le Scouarnec, R. P. et al. "Use of binaural beat tapes for treatment of anxiety: A pilot study of tape preference and outcomes." *Alternative Therapies Health Medicine* 7, no 1 (2001), 58–63. Cited in Esra Akın Korhan et al, "The Effects of Music Therapy on Pain in Patients with Neuropathic Pain," *Pain Management Nursing* 15, no 1(2014), 307.

For an interactive view of brain structure and its associations with different parts of music cognition, see the following: <https://www.ucf.edu/pegasus/your-brain-on-music/>

¹¹⁵ Tansel Bekiroğlu et al, "Effect of Turkish Classical Music on Blood Pressure: A Randomized Controlled Trial in Hypertensive Elderly Patients," *Complementary Therapies in Medicine* 21 (2013), 152.

Eliciting such a biological response from the body with music requires a framework inclusive of cognition, emotion/affect, and neurobiology, as well as an answer to the question, “what is it about music that makes us feel better?” Elizabeth Tolbert argues that researchers of music cognition understand musical meaning as arising primarily from structural elements of a musical example as understood through Western music theory. From this perspective, meaning is insular and embedded within musical structure with little connection to social or cultural context. She contrasts this with ethnomusicologists, for whom musics’ structural elements necessarily exist in relation to “larger cultural system[s], specifically with emphasis on the role of social life in the construction of symbols.” Musical structures, in this view, do not contain intrinsic or acultural significance; it must be created.¹¹⁶

Both the structural and social views come out in these case studies. First, they still refer to Çoban and TÛMATA for advice on using particular *makam*-s for their ailments. Second, in their selection and explanation of *makam* choice, these studies cite not only affective qualities of the *makam* but refer specifically to that affect’s inherent nature within the musical structure. The following case studies maintain a tension between adherence (to some degree) to the notion of *makam*-based healing with intrinsic musico-medical properties, and adherence to current practices in music-induced analgesia that are attention to patients as culturally situated individuals whose physiological response to music is determined by their background, aesthetic preferences, and emotional connection to particular musical genres and styles. This tension is precisely that which Tolbert points to, and is the location of much thought on cross-cultural music cognition, as shown by Jacoby et al.

¹¹⁶ Elizabeth Tolbert, “Theories of Meaning and Music Cognition: An Ethnomusicological Approach,” *The World of Music* 34, no 3 (1992), 8.

Beginning with the study by Korhan et al on music-induced analgesia for neuropathic pain: 30 patients receiving treatment in the hospital for neuropathic pain volunteered for the study. These patients did not have any diagnosed psychiatric illness, had not taken sedatives prior to treatment, and were not given any analgesic before, during, or immediately after the music therapy intervention. They also were all normatively hearing. Patients did not have a choice of music and listened to 60 minutes of Turkish classical music in *nihavend makamı* with an mp3 player and headphones.¹¹⁷ Like the studies outlined in Chapter 4, *nihavend* is selected on the basis of its reported ability to induce general relaxation and affect blood circulation and blood pressure. *Nihavend makamı* is not specifically listed in Çoban’s text because it is a transposition of the *buselik makamı* pentachord with the addition of other tetrachords.¹¹⁸ Because of this transposition, *nihavend makamı* maintains many similar properties to *buselik makamı*.

Korhan et al summarize the *makam* as follows:

Nihavend mode has had a very significant place in the history of Turkish music. It has been one of the two most common modes of Turkish music for more than a century. As the Nihavend mode scale has a minor structure corresponding to the D minor scale in Western music, it has soft sounds, it does not wear down the human musical ear, and it is traditional and has a relaxing impact on a person.¹¹⁹

Claims to *nihavend makamı*’s efficacy are here grounded in both its structure and its history. Regarding the former, the *nihavend* pentachord is arranged in the same way as the first

¹¹⁷ Korhan et al, “The Effects of Music Therapy on Pain,” 308-9.

¹¹⁸ In Turkish classical music, transpositions of individual *makam*-s have their own name, in addition to their own behaviors regarding ascension and descension, accidentals, and construction with additional tetrachords and pentachords. *Buselik makamı* and *nihavend makamı* both often pair with *hicaz* and *kürdi makam*-s’ tetrachords, but in different patterns. Turkish classical music also names each note and does not use the same name across “pitch classes” as we know them in Western music theory. For an introduction to this and an excellent introductory teaching resource, see Murat Aydemir, *Turkish Music Makam Guide* (Istanbul: Pan Yayıncılık, 2010).

¹¹⁹ Korhan et al, “The Effects of Music Therapy on Pain,” 309.

five notes of a minor scale: from tonic, a whole step (*tanini*), half step (*bakiyye*), whole step, and whole step. But this structure is set up as important *relative to the Western minor scale*. Because of its relation to minor...and so on. During my interview with Korhan, I asked her about this.

[Moon]: You mentioned another study in which *nihavend makamı* is used. In many studies, *nihavend* and *buselik makam-s* are used because they are seen as the most effective. But in all these studies, it is not used as a variable. Do you think using different *makam-s* will have other effects? Or can you use any *makam* you want, *nihavend*, *acemaşiran*.... Do you believe it makes a difference?¹²⁰

I was expecting one of two answers. The first, which I get from Toker and Kömürcü in Chapter 4 and 5, is that yes, each *makam* has an effect that can be measured and delineated as unique. The second, as seen in Çoban's response, is that no, this is not true, it is an historical belief that is now disproven by science. Instead, Korhan gave a fascinating answer:

Now, there is a reason why we use each of these *makam*. For example, whether in *nihavend makamı* or in Western Classical Music such as Bach, the music we use is coming from the family of sol minor. Music therapists say that music must come from this family in order to have a therapeutic effect. All types of music coming from this sol minor family have this effect, and we chose them for this reason.¹²¹

I wasn't sure I understood, in large part because of how unexpected this answer was. I asked if she could elaborate.

“In music there are genre, there are families. Music therapists say that, whether it is Western Music or *nihavend makamı* that you want, it must come from sol minor.”¹²²

Rather than referring to intrinsic properties of *nihavend makamı* separate from similar melodic and harmonic structures, Korhan points to a characteristic that is specific to *nihavend makamı* but is generalizable across musical traditions. Using the term “sol minor” references the

¹²⁰ Korhan, interview, 2021.

¹²¹ Korhan, interview, 2021.

¹²² Korhan, 2021.

solfege system familiar to those trained in European art music and imported to the Turkish classical tradition. Since the early 20th century, Turkish classical music has used Western staff notation and solfege and adapted it to *makam* by used a fixed-do system that transposes by a fourth. *Nihavend makamı* is built on *rast*, which is written as a G on the staff (sol) but sounds a fourth lower as D in the Western system. So, while this structure distinguishes *nihavend makamı* from other *makam* (save for *buselik makamı*), Korhan places it within an extrapolated set that seems to indicate that it is *not* the particular tradition that makes a difference, but rather, it is the musical structure.

Appeals to melody and harmony are often accompanied by vague stipulations that music examples' tempo should be rather slow, often in the range of the average heartbeat. In this same study, Korhan et al describe the *usûl* (rhythmic mode in Turkish classical music) of musical examples:

While combining the melodies, an attempt was made to select the tempos that are widely used in Turkish music and that are popular. Mainly, *Nim Sofyan* (double time), *Sofyan* (four time) and *Aksak Semai* (ten time) tempos were used. In selecting the melodies, rhythm diversity was achieved by following a slow-fast-slow motion.¹²³

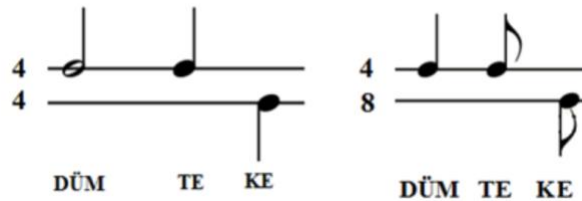


Figure 2: *Sofyan usûlî* (Transcription from Adana Musikî Derneği)

¹²³ Korhan et al, “The Effects of Music Therapy on Pain,” 309.

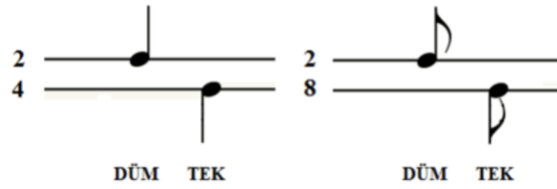


Figure 3: *Nim sofyan usûlü* (Transcription from Adana Musikî Derneđi)

These *usûl*-s are certainly among the most straight-forward of the Turkish system. Without addressing the particularities of stress/emphasis within *usûl* patterns, we can most simply say *nim sofyan* and *sofyan* can be understood as meters in two and four, respectively, which are quite simple and familiar to musicians of the Western tradition. *Aksak semai* is also a common *usûl* and was the first taught to me by my kemençe teacher. This is not a straight-forward ten even beats but is arranged as below.



Figure 4: *Aksak Semai usûlü* (Transcription from Adana Musikî Derneđi)

While *Aksak semai* may seem complicated at first glance relative to *nim sofyan* or *sofyan*, it is a common *usûl*, and together with *nim sofyan* and *sofyan*, represents a basic entry-point. The idea that rhythm and tempo should be slow and uncomplicated is pervasive in the literature and individuals' ideas about musics' therapeutic effects. A quick beat and complex or difficult rhythm is understood as unsettling.

In another study, Korhan et al use recordings of Bach performed by flutist James Galway. They describe their intervention as follows:

Patients listened to relaxing music, consisting of classical music with 60–66 beats per minute, using media player and headphones. Headphones used for music therapy were disposable. Music with this beat was chosen because it has a positive emotional effect on people (Chlan 1998, Chang & Chen 2005), and classical music was chosen because it has the most relaxing effect (Almerud & Peterson 2003). The actual piece chosen was Bach’s 19 trio sonatas played by James Galway on flute. Bach’s music has a unique polyphonic harmony and balanced melody and is of a quality that appeals to the emotions (Birkan 2006).¹²⁴

Ostensibly, melody and harmony appeal to the emotions, while a relatively slow beat paced with a slow, resting heart rate are ideal. Several interlocutors told me that music with a fast tempo and aggressive or complex rhythm is undesirable, as it might excite the patient more than relax them. “Relax” functions as the antidote to “stress” across several of these studies, referring to both a subjective state of feeling and quantitative measure of stress outlined above.

Harmony and rhythm are understood to function as agents of healing independent of their context, seeming to point away from cultural context. Particular *makam-s*’ intrinsic melodic properties are capable of healing here only as they intersect with additional rhythmic qualifiers. As pain is seen as a multivalent expression of subjective experience and quantifiable, measurable physiological markers, the musical relief of pain is too constituted by, and contingent upon, overlapping musical structures. Under this rubric, *nihavend makamı*, for example, enacts its healing powers related to relaxation and blood circulation if any only if it is expressed through sensible rhythmic frameworks.

Musical structures’ contingency seems to point (perhaps somewhat analogously) to the broader context within which musical healing happens. Without prescribing a strict binary outlook, we can liken the relationship between melodic and rhythmic structure here to cultural context and

¹²⁴ Korhan, Khorshid, & Uyar, “The effect of music therapy on physiological signs of anxiety in patients receiving mechanical ventilatory support”, *Journal of Clinical Nursing* 20 (2011), 1029.

aesthetic preference as key social indicators of the efficacy of musical healing. From the phenomenological perspective, there are layers the experience occurring simultaneously in the act of musical healing far beyond the application of music to a passive body. We must consider the orientations of the patient relative to music, illness, hospitals, and so on, ask how objects and phenomena exist relative to the body, and how healing occurs within these networks.

Patient choice of music is high on this list. As seen above in **Active/Passive Listening**, patient choice is presented as perhaps the most critical part of effective music therapy, even when study participants don't really have much of a choice at all. Patient choice here is related to, yet distinct from, the importance of cultural relevance. Music therapy is thought to be most effective when the music being applied comes from the patient's own culture. In Kılıç et al's study on Turkish classical music and pain in a hospital emergency room, they argue that "individuals are affected more by music of their own culture because they can interact more comfortably and that there is diversity due to their cultural structure and education."¹²⁵ In her study using Bach, Korhan specifies that "[b]ecause of cultural diversity among the patients, their choices [of music] might differ," but they didn't allow patient choice in order to maintain "standards of research."¹²⁶

Çoban summarized it to me with a hypothetical example:

If you say to a man who comes from Sivas [a town in East-central Turkey] and has never in his life heard [European] classical music "Mozart is very effective, come and I will have you listen to Mozart," ... Of course Mozart is beautiful but here it has no function, it is not helpful. We must use music chosen based on the individual's story.¹²⁷

¹²⁵ Kılıç et al, "Effect of music on pain, anxiety, and patient satisfaction in patients who present to the emergency department in Turkey," 46.

¹²⁶ Korhan, Khorshid, & Uyar, "The effect of music therapy on physiological signs of anxiety in patients receiving mechanical ventilatory support", 1028.

¹²⁷ Çoban, interview, 2020.

Underlying each of these explanations is the assumption that Turkish classical music is a potent signifier for any and all Turks. Cultural considerations seem largely homogenous across these studies and imply that by virtue of belonging to Turkish Culture with a capital C, one is encultured into this specific musical tradition. But as shown in the previous section, musical enculturation does not necessarily happen through passive exposure. Turkish classical music is a niche genre, and while some draw parallels between its stature in Turkish society and that of European classical music in American society, for example, their actual functions are quite different. The “masterworks” of the European canon play a significant role in American popular media, even if one cannot specifically identify their composer, stylistic era, etc. The same cannot be said for Turkish classical music.

Addressing the cultural situatedness of patients requires a more nuanced approach that recognizes how the dynamics of intersectional identity are at play. In Turkey, this would have a lot to do with region, for example. Another study carried out in southeastern Turkey examines the effect of Turkish classical music (specifically in *nihavend* and *buselik makam-s* due to their physiological associations) on blood pressure in elderly hypertensive patients. Tansel Bekiroğlu et al characterize Turkish classical music as “a national and traditional music form appreciated by the Turkish people.”¹²⁸ Such an assumption leads to their hypothesis that familiarity (related to both cognition and emotion) might make the genre more effective in the body. And ultimately, results are mixed: there was little statistical difference between the group receiving music therapy and the control group on bed rest. One limitation, they say, was that different musics may have different effects on blood pressure, so their selection of only one musical genre doesn’t preclude

¹²⁸ Tansel Bekiroğlu et al, “Effect of Turkish Classical Music on Blood Pressure,” 148.

the potential efficacy of music in this area. “However, the familiarity of the subjects to Turkish classical music seems to attenuate the significance of this limitation. On the other hand, it must be kept in mind that selection of music type directly by the patients would augment the effect of these potential interventions.”¹²⁹ Beyond the assumption of Turkish classical music’s significance to the general populace, this study does not identify ethnicity within its demographic information (most don’t). This is particularly significant in Turkey’s southeast where there is a large Kurdish population (between 10-20% of most large cities), as well as an Arab population. It may well be that the studies included only Turkish participants, but the study design and presentation of results omit such critical demographic information. Understanding the cultural context of participants on the basis of location, ethnic background, and so on are critical for a model of musical cognition attentive to culture in a real way.

In contending with the knot of cognition, emotion, and pain, patient choice seem the obvious answer to address all three problems here. If, as Korhan notes of her student’s work, there is not significant statistical difference between Turkish classical music and European classical music in reducing stress/anxiety/pain, then is there a benefit to using either? Sigrid Juhl Lunde et al argue that in pain management, “music chosen by the patient has been shown to have a greater analgesic effect than music chosen by the researcher, and personal preference and familiarity have been emphasized as important factors in music-induced analgesia.”¹³⁰ In selecting their own music, the patient is already competently addressing both cognition and emotion: their chosen music is familiar to them and meaningful such that they have selected it, believing it will treat pain. This

¹²⁹ Tansel Bekiroğlu et al, “Effect of Turkish Classical Music on Blood Pressure,” 153.

¹³⁰ Sigrid Juhl Lunde, Peter Vuust, Eduardo A. Garza-Villarreal, Lene Vase, “Music-Induced Analgesia: How Does Music Relieve Pain?” *Pain* 160, no 5 (2019), 990.

opens the door to address pain from this triad, according to Lunde et al, because it raises the question of whether pain relief occurs within the musical structure itself, or if the patient derives an analgesic effect from emotion, memory, and familiarity. The answer? We don't know.

Such cases seem, in my view, to make a strong case for existing notions of embodied cognition. Tolbert places theories of music cognition on “a continuum of embodied thought” in order to demonstrate the body's implication in perspectives of both biological reductionism and social constructions of cognition. In particular, she draws on Bradd Shore's work that brings together psychology and anthropology in order to postulate a model of cognition wherein meaning is created twice: psychologically and socio-culturally. The integration of meaning thus occurs through a feedback loop. While perspectives on embodied cognition range from the conservative (cognitive representations have a bodily origin) to the enactivist (no assumption of bodily origin for internal representations), at the core remains the recognition that cognition is not a purely neurological process, but occurs through interaction with one's environment (see Chapter 4, we may even call this “intra-active”).¹³¹ If cognition is embodied and socially constituted through interaction between body and environment, then the location of cognition itself may too be indeterminate. According to Michael Anderson et al, ““embodied cognition” is a misnomer. Embodied cognition is not just cognition and it does not just happen in the body.”¹³²

Ethnomusicology has a clear stake in these projects. Far beyond Turkey researchers examine local or national musical practices' efficacy in the hospital room, and the potential for such work is dependent upon the deep cultural knowledge that ethnomusicologists offer. Even

¹³¹ For a brief overview, see Marieke van der Schaaf, Aruther Bakker, and Olle ten Cate, “When I Say...Embodied Cognition,” *Medical Education* 53 (2019), 219-20.

¹³² Michael L. Anderson, Michael J. Richardson, and Anthony Chemero, “Eroding the Boundaries of Cognition: Implications of Embodiment,” *Topics in Cognitive Science* 4, no 4 (2012), 727.

without necessarily being an ethnomusicologist of health, each scholar has the potential to offer a perspective on the construction of musical meaning, which, as shown here, is tantamount to music cognition. Just as many of us lack formal advanced training in medicine or the natural sciences, so too do these researchers need the help of humanists. For the many points of tension between ethnomusicology and psychology shown in Becker's work, there is also great mutual interdependence. Subjects such as trance or altered states, as studied in Becker's, are often taboo in psychology, and ethnomusicologists can make a significant offering towards understandings of embodiment as a condition of interaction in these instances. We might shed light on the role of affect/emotion, its location in experience, and its utility in community. And we might demystify those practices provincialized by the medical institution, highlighting the important social and political work they do.

And for things we don't understand, things cast aside by scientific institutions, we can at the very least tell their stories, offering experience to the world as a valid form of knowledge. Musical healing as a spiritual practice for some in Turkey, such as members and participants of TÜMATA, is an experience of being in one's body and mind. Without the need for credentializing institutions (themselves a surveillance state), these stories and accounts might offer insight into how music, emotions, cognition, and the body interrelate. "So there is something happening," Azize tells me, "[music] can influence the structures of the body. It changes the emotions. But maybe it also touches what we don't know about ourselves."

3.4 Neoliberalism, Neo-Ottomanism, and the Politics of Listening

In this chapter, I discussed interrelated conceptions of listening that ultimately ask more questions than they do give answers. Cognitive science, for all its advances since the mid-20th century, still cannot answer many of the questions that my interlocutors and I ask. But turning to the music itself, every person I have met and interviewed expressed such sincere belief in the music's power and potential that it hardly mattered if experiments came up inconclusive. "It is a great gift to receive this music," Azize says to me. "The knowledge is in the music; we just have to use it."¹³³

Working within the biomedical institution, most of my interlocutors are guided by its founding epistemological questions and likewise limited by its political and economic ideology. Most of my interlocutors are employed primarily by universities, which like hospitals are bifurcated in Turkey: public and private. My interlocutors consistently address that music therapy is a good option for numerous reasons, and its low price tag is usually on the list. Of course, it also offers a route away from pharmaceuticals, which many physicians try to avoid due to their potential side effects. But the fact that music therapy (as it is practiced in most of these studies) is virtually free makes it an appealing option.

Unfortunately, it is not yet in a place where one can walk into the hospital and be offered, or even ask for music therapy. Unlike the United States, the United Kingdom, or many other countries, music therapy is not yet a codified practice of core values, theories, and methodologies. Certainly, there is no process by which one undergoes credentialization in Turkey for music therapy practice. To receive music therapy typically means you happened into a hospital or the office of a health care professional who is particularly interested in it. Çoban taught an elective

¹³³ Güvenç, interview, 2020.

course in music therapy for two or three years at Istanbul University's Medical School (his alma mater) until his professional workload a psychologist became prohibitive. He notes that some schools gave graduate elective courses in music therapy, such as Medipol University, but that it remains on the fringes. But he tells me the following:

But the main thing to do is open a program and department at the undergraduate and graduate levels. Unless this happens, music therapists will not be trained. I am talking about an accredited music therapist, because otherwise, it is not possible to train an internationally recognized music therapist. That is our biggest need right now. We need a music therapy program accredited by YÖK [*Yükseköğretim Kurulu*, Council of Higher Education].¹³⁴

Çoban recognizes the unlikelihood of this, as Turkey invests less in education and significantly increases the workload and promotion requirements for faculty across departments—a story familiar to those in the United States. The neoliberal takeover of the university coupled with conservative government austerity politics makes the idea of opening a new program, particularly one in music therapy, a pipedream. After all, if my interlocutors are correct in asserting that simply putting on headphones and selecting a *makam* can heal, what is the need for music therapists trained at a public university with government money?

Here the potential cultural-economic value of a revived Ottoman cultural form might be of use. In the past two decades, the government has encouraged public interest in the Ottoman past in part as a push for Islamist politics. Reenactments of Ottoman Janissary (*yeniçeri*) and *mehter* ensembles perform for domestic and international tourists, restaurants dedicated to Ottoman cuisine are scattered across Istanbul, and hugely popular television shows dramatize the lives of Ottoman history's most beloved characters. State sponsorship has also been critical to the

¹³⁴ Çoban, interview, 2020.

maintenance of cultural heritage for decades.¹³⁵ Each of these functions as a key piece of cultural policy as the AKP looks to enact a new plan for Turkey on a regional and global scale.

At its root, the framework of neo-Ottomanism is a theory of foreign policy born at the end of the Cold War and the breakup of the Soviet Union. The 1990s were a moment for Turkey to reimagine its role as potential global power, particularly in the face of Russian dominance in the surrounding region. Neo-Ottomanism is a neo-imperial outlook that critiques “monoculturalism” in Turkey and harkens the supposed diversity and multiculturalism of the Ottoman era.¹³⁶ Cultural forms are then a key tool for this governmental. Which cultural forms? Those of the Ottoman bureaucracy, the imperial center. How could Turkish classical music therapy fit into this picture?

Neoliberalism operates through narrative progress while enacting a blanket policy of quantification in an effort to maximize output in calculative terms. As Robin James has argued, discussions in musicology of the shift from representationalism to resonance and materiality are simply a shift in humanities discourse towards the neoliberalism that has overtaken the university.¹³⁷ Subsuming Turkish classical music within the biomedical-university institution runs the same risk: how can we utilize music in a way that is cost-effective and maximizing individual output? Rather than attempting to draw a line between quantification in science and neoliberalism, I emphasize that understanding musics’ quantitative effect runs the risk of eliding research and marketization. It is expensive to finance full-scale revivals of music therapy performance in

¹³⁵ See Gill, 2017. It is important to clarify that the state sponsorship of classical musicians and ensembles is not an AKP-specific policy, but here points to a longer history of state sponsorship of cultural forms.

¹³⁶ Igor Torbakov, “Neo-Ottomanism versus Neo-Eurasianism?: Nationalism and Symbolic Geography in Postimperial Turkey and Russia,” *Mediterranean Quarterly* 28, no 2 (2017): 125-145.

¹³⁷ Robin James, *The Sonic Episteme: Acoustic Resonance, Neoliberalism, and Biopolitics* (Durham: Duke University Press, 2019), 100.

hospitals-turned-museums. It is cost-effective to have an iPod and headphones for the hospital ward pre-loaded with *makam* selections.

My interlocutors certainly do not intend to create a mass-market music therapy approach, but they do want it validated and accessible for patients across Turkey. But they operate across conflicting registers: public and private funding structures, increased demands as both faculty and researchers, pressure of producing safe and cost-effective medical care, personal interests in bridging cultural practices and science, and the list goes on. As they navigate these registers, they are continually brought back to the music. “No, I am not a musician,” almost every single physician told me, “but it makes me feel something.” And to this question I always want to ask, what does it mean to listen under these conditions? How does listening change us, or free us? The answer is not so simple, as shown here: to pin down modes of listening as they cross epistemology and time is near impossible. But each offers a unique line of inquiry, and here we are learning to follow each one.

4.0 Obstetrics

4.1 Pregnancy in Two Contexts

A pregnant woman lies in a hospital bed in southeastern Turkey where Dr. Eylem Töker conducts research on music and obstetric care. As a part of a research study, she receives music therapy: thirty minutes a day of listening to Turkish classical music in *buselik* or *nihavend makam-s*, headphones on in bed. Blood pressure, fetal heart rate, and fetal movement numbers are recorded before and after the intervention.

A second pregnant woman lies too in a bed elsewhere in Turkey, but without headphones. Her room is shared with musicians, arranged in a semi-circle. Two hands gently lap at a basin of water, while others holding rebab, ney, and a drum sound around her. A man sings, also in *buselik* or *nihavend makam-s*. According to an account of this music therapy intervention, the breached fetus is turned in utero to a proper position for vaginal birth.

Coming from different interlocutors who work in seemingly disparate contexts, these two moments tell the same story: Turkish classical music and the *makam* melodic system are believed to be effective in treating a variety health issues in any context. While the former takes place in a clinical setting under the supervision of a medical professional, it relies upon the latter: a practice carried out by TÛMATA, whose work is cited heavily within the published biomedical studies I examine.¹³⁸ My interlocutors demonstrate in interviews and their written work that while their

¹³⁸ Although Rahmi Oruç Güvenç founded TÛMATA in 1976, and their work in clinical settings didn't begin until the early 1990s and was concentrated in Europe, Oruç and his colleagues didn't believe the spheres of folk healing and biomedicine to be separate. His doctoral studies in clinical

methods differ, their core beliefs and goals are the same. Rather than positioning music therapy and biomedicine against one another, they find them within one another.

This chapter examines Turkish classical music therapy's application in obstetric medicine and other childbirth contexts in order to position sound healing as a biomedical practice. In particular, I consider the relationship between sound and pregnancy in order to demonstrate how a lens of engagement/engaged listening complicates the sound-body relationship, as well as the mother-fetus relationship (see Chapter 4). I closely examine peer-reviewed biomedical research on music and pregnancy/childbirth, paying particular attention to study design and methodology. This analysis is foundational to understanding ethnographic material gathered from researchers, nurses, and other researcher-practitioners outside of biomedicine.

Drawing together anatomy and physiology, Islamic cosmology, Galenic medicine, and Greek astronomy, my interlocutors weave complex histories and belief systems together in defining their epistemology. Scientific research is founded upon empiricism, of course, but its most common modes do not accommodate the capacious frameworks within which my interlocutors work and think. Defining epistemology for both interlocutors and I requires that we also see empiricism's many faces. I draw from the feminist science studies literature in my understanding and usage of these terms.

Empiricism, as an utterance whose constitutive other is almost audible, is most conservatively understood as the following, according to Elizabeth Anderson:

Empiricism is commonly taken to mean something else: a doctrine that imposes a priori substantive restrictions on the kinds of entities and concepts that can ultimately figure in science. Various self-described empiricists have tried to eliminate from science reference

psychology at Istanbul's premier medical school (Cerrahpaşa, Istanbul University) certainly influenced this work, even as he worked in folklore and ethnology prior to these clinical collaborations.

to unobservables, and use of intentional, modal, and evaluative concepts, or to reduce these to concepts thought to be more "naturalistic." These substantive commitments are simply bets as to how empirical science will actually turn out. Transformed into restrictions on the permissible content of theories, they are attempts to win the bets by rigging the game in advance, preventing the exploration of hypotheses that might show them wrong.¹³⁹

When "empiricism" becomes the language of condescension or attempts at illegitimization—typically directed at practices deemed "alternative," but also towards feminized disciplines—it might most often be understood as a gatekeeping tool which reifies masculinist logic and rationality while simultaneously limiting the potential of scientific discovery. As Anderson notes, "naturalistic" here is used to most nearly mean "pseudoscience." But the self-described naturalistic approach is critical to feminist epistemologies, as it seeks to understand how the forces affecting scientific inquiry also affect the observer. This is an empirical question, in Anderson's view, as it concerns evidence about the world and its actions.

I take empiricism, then, to simply refer to the collection of data through investigation, including both quantitative and qualitative data. Critically, I understand empiricism solely as a methodology rather than as a framework or outlook. As an important part of epistemology across disciplines, empiricism in its broadest sense might allow for a great deal more creativity and imagination in understanding and interpreting data. For this chapter, a simpler mode of empiricism is also tantamount to a feminist critique of scientific inquiry, particularly when women become the subject. Turning again to Anderson, I follow her lead as she describes a feminist epistemology for the study of science:

[A feminist epistemology] asks how the historical exclusion of women from theoretical inquiry has affected the direction and content of research in fields such as anthropology, philosophy, and psychology; how the use of gender metaphors in biology has made some phenomena more salient than others; how history, economics, and medicine would change

¹³⁹ Anderson, Elizabeth, "Feminist Epistemology: An Interpretation and a Defense," *Hypatia* 10, no 3 (1995): 52.

if we viewed phenomena from the standpoint of women's rather than men's lives; how the feminist movement has changed our data, our ways of describing the data, and our theories about differences between men and women.¹⁴⁰

By taking a feminist approach to my study of these practices, I aim to understand 1) how masculinized medicine, and midwifery in the Ottoman/Turkish context, is being reformed in Turkish obstetric care; and 2) how a lens of engaged listening in music therapy is rooted in a feminist-materialist listening practice.

I begin by providing an overview of medicalization as an ongoing imperial project that shapes music and health in both popular and academic contexts. Through discussion of Turkish classical music's development and the formalization of medical practice in Turkey, I illuminate an ongoing colonial value system that, most often, privileges classical musics as the genre of choice, including both Turkish and European classical musics. The age of colonialism brought both musical and medical technologies and ideologies to colonized lands—as well as to adjacent territories not colonized by Europe, such as the Ottomans. I argue that this process of parallel developments played out in the Ottoman 19th century, giving rise to the medicalized practice of obstetrics and eventually the practice of Turkish classical music therapy (see Chapter 2).

I then provide an in-depth analysis of recent studies in Turkish obstetric care. I combine a close analysis of these studies with interviews conducted in 2019 and 2020 in order to understand how, *in the view of my interlocutors*, Turkish classical music became (or was born) a genre imbued with both medical and metaphysical potency (a claim disputed by ethnomusicologists).¹⁴¹

¹⁴⁰ Elizabeth Anderson, “Feminist Epistemology: An Interpretation and a Defense,” *Hypatia* 10, no 3 (1995): 54.

¹⁴¹ The invention of Turkish classical music in the early Republic period served as a corrective to “eastern” or *alaturka* genres which sounded like the past. Born of these old genres (Ottoman court musics, *makam*, Mevlevi Sufi musics), Turkish classical music was intended as a sanitized genre suitable for a modern, Western nation. This is not to say practitioners see it this way, but that its

Understanding the function of Turkish classical music within contemporary Turkish society, particularly with the rise of neo-Ottomanism and increasing Islamism in the past two decades, draws out important parallels between Turkish and European classical music traditions regarding their deployment as historically situated sonic markers of status, as well as how this sound-as-status functions as a body politic or marker of health. I thus interpret these studies as pursuing not only empirical evidence for the efficacy of Turkish classical music therapy, but also a framework for reimagining sound-body relationships.

This parallel development and diffusion of both European and Turkish classical musics has led to deeply embedded assumptions about the agency and role of sound in relation to medicine and the human body as a purely biological organism. Following the previous chapter, I again closely examine “stress” as both a medical condition and a discursive node for studying how these assumptions about sound, body, and mind interact. Critically, the “body” here is not a given, homogenous category, but rather a political question: whose body, which body, mother or fetus? Following stress further, who is experiencing stress, and in what ways does “stress” function as a marker of ideology? By taking a focused analysis of the studies’ implicit stake in a particular relationship between fetus and mother and situating this analysis within ethnographic material and a feminist science studies approach, a gesture towards broader question and considerations for music therapy in obstetric research and its mode of conceptualizing and engaging the pregnant body.

Extrapolating from both written work and ethnographic data, I finally offer broader implications for the study of music and childbirth. Through the lenses of engaged/active listening

specific formulation carried the political stakes of the new nation. See O’Connell, 2013 and Gill, 2017.

and soundbody I consider how study design reflects and replicates assumptions about how sound and the body interact, and about the relationship between a pregnant mother and the fetus.

4.2 Medicalization of Turkish Classical Music

I got quite lost trying to visit Dr. Kömürcü at Aydın University, a compact campus of buildings fit together like puzzle pieces within only a few square blocks of Istanbul's Bakırköy neighborhood, several kilometers from the crowded city center. After getting off the train too early and walking a few kilometers to campus, I passed through the large security gate at every university's entrance and weaved above and below buildings, stopping once to ask for directions. "Take a right, and then a left, and then a right again. Go up the stairs, across the street, make a right, and then left, down the stairs, and that block is right there." Finally finding my way, I sat down in a chair across from Dr. Kömürcü in her neat, if full, office. She poured us tea into pink and white floral teacups as I set out cookies for us.

She pulled books off the shelf (such as Çoban's *Müzikterapi*), showing me the cover and asking "have you read this? No? Take a photo of it so you remember." She told me the tale that opens so many studies on Turkish classical music therapy, the story that starts 6000 years ago in central Asia with Turkic shamans and travels across the steppe into Anatolia, eventually landing in Ottoman hospitals and finally, in her office. Amid these stories, histories, studies and citations, one thing stands out as the most critical: the answer Dr. Kömürcü gives to the most telling question I ask in every interview.

"In that case," I begin, pulling out a paper she gave me, "let's look at the example of your advisee, Dr. Toker's article, where only *nihavend* and *buselik makam*-s are used because according

to TÜMATA, to Rahmi Oruç Güvenç, to the Ottomans, those particular *makam*-s help with blood pressure and circulation. Do you believe in this?”

She smiled, looking me straight in the eye, and said “Yes, I believe in it.” I began to ask for clarification, but she continued: “of course, of course...did you go to the [health museum] in Edirne? There is one in Kayseri too...they made all of the places where *makam* music therapy was used into museums. Now in the Ottoman Empire—they say if you have gone [to the health museums]—at a time when mental patients in Europe were cremated, thrown into pits, considered out of treatment, the Ottomans were doing music therapy.”¹⁴²

The past decade has seen reinvigorated interest, and even pride, in the Ottoman past. Given Turkey’s contemporary position vis-a-vis Europe—decades of EU accession negotiation, refugee agreements, visa talks—a turn towards the Ottomans has been treated by some as a turn inward, towards an innate sense of Turkishness that connects contemporary Turks to the age of empire. Driven in part by the neo-Turkic teleology described in Chapter 2, this close identification with the Ottomans that I sensed in Kömürcü also seems to point towards an identification with Turkish genealogy; neither exceptionalism nor exclusion, this feeling is one of spaciousness, and of willingness to believe and accept that biomedicine can accommodate the practices of the Ottomans.

But historical record does not indicate when music therapy began in earnest. Aside from Evliya Çelebi’s 17th century travelogues, only payment records exist for musicians at the *darüşşifa* in Edirne, but we lack a chronology about the practice’s development among the Ottomans. While it is beyond the scope of this study, a critical reading of Gevrekzâde Hafız Hasan Efendi’s 18th

¹⁴² Nuran Kömürcü, interview by author, February 24, 2020.

century treatises might provide a better understanding, and I hope to pursue this project in the future. But even in absence of these accounts, the story insists that the practice was codified in Gevrekzâde's work, and that this practice might be traced beyond the Ottomans to the Seljuks, and further down the Turkic genealogy.

This is to say Turkish classical music has accrued medical potency for an indeterminant period of time and can potentially be seen to have lost some degree of this specific meaning in the past century. A amalgamate tradition of the Early Republic Period, Turkish classical music draws from Ottoman court traditions, music of several Sufi orders, and art music traditions of late Ottoman and Turkish periods.¹⁴³ Court music and Sufi repertoires have individual affective histories and associations with healing, and pieces of each are bound up in the notion of "Turkish classical music." Individual contributing genres are not wholly subsumed, to be clear. Rather, the medicalization of this amalgam-genre takes pieces of each and cumulatively compounds their religious, emotional, and psycho-somatic dimensions.

Understanding how the medicalization this genre occurred requires that "medical" be interpreted not as taking a "non-medical" genre and forcing it into clinical contexts, but rather as an ongoing process of subsuming existing discourses and practices on the healing dimensions of a genre under the imperialist heading of "medicine." This process of "becoming medicine" for indigenous or folk medicines is often a process of theft and submission to European ideology. Those which might be deciphered through the limited epistemology of European thought "become" medicine while the rest are thrown back as scraps and labeled 'alternative' or 'holistic.'

¹⁴³ See Gill, 2017; O'Connell 1996, 2013.

Medicalization is an ongoing colonial practice particularly potent under neoliberal economic policy.¹⁴⁴

Medicalizing Turkish classical music, then, refers to the process of European medical imperialism in the Ottoman Empire. More specifically, I use this phrase to refer to drastic changes of the 19th century Ottoman bureaucracy, especially the Europeanization of medical training and practice. These reforms were particularly drastic in the area of obstetric care and childbirth. Most towns and villages relied upon local midwives to facilitate childbirth, but according to Gülhan Balsoy, the Ottoman bureaucracy saw childbirth as an opportunity to revitalize the empire during its descent in the 19th century. The Ottoman elite sought to clamp down on widespread abortion practices and encourage childrearing as a critical part of the empire's futurity. Midwifery became professionalized through the required education and licensing of midwives, who would be sent on behalf of their town to Istanbul for training. Male midwives trained first in Europe, and then later in Istanbul, and assisted in carrying out bans on abortion.¹⁴⁵

These reforms did not fundamentally change pregnancy care or childbirth practices, of course; only select midwives received training in Istanbul, and they often returned home and resumed practice in their community as before. But this formalization of midwife education did represent the medicalization of pregnancy and a mode of disciplining the female body.¹⁴⁶ This was particularly pronounced as medicalization meant masculinization of obstetric practice. Balsoy notes that particular tools and instruments such as forceps were only for use by men, and as men

¹⁴⁴ See Anshu, 2016.

¹⁴⁵ Gülhan Balsoy, *The Politics of Reproduction in Ottoman Society, 1838-1900* (London: Pickering and Chatto, 2013).

¹⁴⁶ This category of "female" as a monolith often used synonymously with pregnancy is discussed below.

gained expertise and status in their practice, they demonized midwifery as the cause of infant mortality and the overall decline of childrearing in the empire. Besim Ömer, a leading male obstetrician of the 19th century, characterized midwifery as follows:

[O]ther than a few such exceptions, the midwife was an ignorant, blabbermouth, filthy old woman. Her single virtue was to jabber and prattle; she was superstitious and knew nothing about hygiene. Moreover, pregnant women, too, were ignorant and expected their midwives only to be sociable and amiable, rather than trained and professional. Like the midwife, they knew nothing about hygiene and believed only in their superstitions.¹⁴⁷

Blatant misogyny and the denigration of women, midwife and mother alike, was key to establishing a masculine medical authority under this new system. Doctors needn't do much work—they didn't, according to Balsoy—aside from carry out new reforms dictating who was allowed to practice what type of medicine, such as restricting the use of herbal medicines to trained medical doctors (men). This process of masculinizing medicine meant re-gendering/engendering existing practices as “medicine” to be practiced by male physicians. “European men dominated academic science,” writes Schiebinger of 18th century Europe, “holding a tight rein on what was recognized as legitimate knowledge and who could produce knowledge.”¹⁴⁸ This masculinization, which was also colonialism, which was also the theft and appropriation of indigenous or folk healing practices with histories of their own, was too a critical tool for the Ottoman bureaucracy in establishing control over women, pregnancy, and medicine.

Locating those musical practices constitutive of today's Turkish classical music therapy in this history means understanding how it became associated with particular fields of biomedicine: psychology and obstetrics. As seen in Chapter 3, musics' association with the mind relies on a

¹⁴⁷ Quoted in Balsoy, *Politics of Reproduction*, 17.

¹⁴⁸ Londa Schiebinger, “The Anatomy of Difference: Race and Sex in Eighteenth Century Science,” *Eighteenth Century Studies* 23, no 4 (Summer 1990), 388.

faulty conceptualization of listening and cognition wherein sound is immaterial and perceived only by the brain (through the ears). For the Ottomans, too, music was effective for the mind, but relied upon religious understandings of mind and body rather than the forced separation of biomedicine. Obstetrics, as we have seen, changes radically in the 19th century not out of necessity for better health care, but for increased state control over women and population growth.

This period of disciplining pregnancy functions parallel to the disciplining of music that occurs through the process of medicalization. Far from occurring simultaneously, these processes may not necessarily be considered even co-constitutive. Rather, they both occur as processes of accumulating meaning and context rather than fundamental re-creation. Pregnancy and midwifery were not created anew during the process of Europeanizing the medical education system, particularly because childbirth as a locus of meaning far pre-dates biomedicine. The centralization and masculinization of midwifery through credentialization practices instead served only Ottoman biopolitics emerging from a declining empire.

The same can be said of Turkish classical music, itself is an amalgamate genre of the early Republic period of Turkey that brings together several discrete repertoires in service of a new classical tradition meant to mirror the art music of Europe. Historical Ottoman healing practices and contemporary discourse on the practice together construct the medical meaning of Turkish classical music as not a singular or homogenous tradition but as an intersection of sonic practices, political ideology, and religious traditions. Much in the same way that midwifery is not a codified system but an intersection of knowledge, belief, and practice, Turkish classical music therapy understood as an historical practice in the present indexes a web of cumulative meaning gained through more than two centuries of circulation, intervention, and classification.

Trends towards globalization and global historical methods have likewise produced new avenues for the accumulation of meaning. During several interviews, interlocutors drew reference for the historicity of music therapy from Asia and Africa, with the latter explicated in Chapter 2. Azize, as well as others, pulled from Asian history repeatedly in historicizing contemporary practice—from the Central Asian Turks but also from China as she emphasized the role of pentatonicism as a foundational musical structure in healing. In particular, she draws connections here between the pentatonicism used to generalize about Chinese music and the formation of *makam*, as many *makam* are characterized by a four or five note scale that is then expanded by adding additional tetrachords above or below. While there is no straight line to be drawn between the two, Chinese pentatonicism and *makam*, this type of etiological argument founded in Asia, as well as sub-Saharan Africa, reflects this tendency towards broad-strokes teleologies saturated with orientalism and colonialism—undoubtedly a lingering remnant of exoticism, Ottoman orientalism, and the slave trade (see Chapter 2).¹⁴⁹

Each of these ‘ism-s’ functions not as a value judgement but as important descriptor of ongoing structures of power that can be found in most state institutions, including biomedicine. Even as the method or object shift towards the purportedly acultural, the underlying apparatus remains. Understanding how this particular historiography functions contemporarily is tantamount to meaningful critique of Turkish biomedicine. In what follows, this historicization plays out in different terms, or at least couched in the language of objectivity: the efficacy of particular musics over others, their etiological claim to the body and subsequent medicalization, and primacy even amidst claims about patient choice.

¹⁴⁹ See Türesay, 2013.

4.3 Music & Childbirth in Biomedicine

“But I am saying that it is the 21st century, we are not going to drop all the technological development of the last century and just use music therapy.”

- Nuran Kömürcü, interview, February 24, 2020

Biomedical research functions, in many ways, on a global scale: researchers cite and replicate data from others' work as a foundational part of the scientific method. Given the necessity of accelerated work under emergent conditions, the publishing and disseminating of scientific data can sometimes happen quite quickly. This also means that researchers can build a cohesive literature across geographic boundaries, given the accepted use of English (itself an ongoing act of colonialism). This can be seen in the literature on music therapy as obstetric care, where researchers form a network through citational practice. In Turkey, this work is conducted by a relatively small group of researchers connected primarily through educational relationships: advisor/advisee, colleagues from school or clinical rotations, etc. Kömürcü is one of the central figures of this practice in Turkey, and thus of this chapter, having begun her own work in this area in the 1990s. Her publications span nursing, obstetrics, gynecology and gynecological oncology, and more, but she continually comes back to music because of its personal connection to her educational history, as well as her deep belief in the possibilities of music therapy in biomedical settings.

My afternoon with Dr. Kömürcü crystallized several key concepts that had appeared across other interviews and source materials, such as her perception that her research not only contributed an important method to the obstetric care literature, but more broadly that she relied heavily on cross-disciplinary data and history in the development of her projects. Something she emphasized, though, was beyond data and research:

In my clinical assistantship years long ago, in the 1980s...” she began, “and even from the beginning of the 80s, [music therapy] was in the literature. I had experienced music’s use in birth and its effectiveness. I studied and can say I was quite impressed by Oruç Bey. Because he embraced this topic, he was doing beautiful work all over the world. I had meetings with him. And after that, I too got into this work. But I have no experience in music, *I’m just a good listener*.¹⁵⁰

This “being a good listener,” a quality itself qualified, reappears throughout interviews and research literature. It is something *I* was described as by my interlocutors—probably due to the intense gaze I tend to wear when listening, especially in Turkish conversations—and something I have been told is key music therapy. Regardless of experience or facility in music performance, interlocutors from various working contexts expressed that all types of music therapy are for all types of people. Of course, musical experience is necessary for those who lead musical performances in healing settings, such as those active participants of TÛMATA. But people of all experience levels and backgrounds are very much encouraged to participate in open events and workshops, so long as, according to Azize, they are a “good listener.” While the “good” descriptor seems to adjudicate various distinctive modes of listening and place them within a hierarchy of valuation, this more nearly means a mode of attunement that opens the listener up, one wherein the listener is malleable and receptive to the potential change of musical healing.

I practice this type of listening in three contexts: in musical lessons and at concerts as a learner of Turkish classical music; in interviews, as an ethnographer; and in study analysis, as a thinker. What follows in this section is an instantiation of the second and third contexts. I provide an overview of literatures on music and obstetric care from research institutions in a few countries but focus on how this network exists around and within Turkish research settings. In particular, I look at the work of Dr. Kömürcü and Dr. Eylem Toker, examining their study design, citational

¹⁵⁰ Kömürcü, interview, 2020.

practice, and method for interpreting data. Taken together with our interviews, I argue the following: 1) their study design, implementation, and results rest on assumptions related to the im/materiality of listening, mind-body separation, and mother-fetus separation; 2) a reinterpretation of the study's results, particularly within my soundbody framework, produces a new perspective on the quantification of musical healing practices, one which frames musical healing as a function part of biomedicine.

Toker's 2016 study (published with Kömürçü, based on her doctoral thesis) "Effect of Turkish classical music on prenatal anxiety and satisfaction: A randomized controlled trial in pregnant women with pre-eclampsia," draws on studies in obstetrics, anxiety and pain management, and psychiatry in order "to evaluate the effect of music therapy on anxiety and satisfaction in pregnant women with preeclampsia."¹⁵¹ Toker notes that while music therapy research exists in many fields, there is little work on using music therapy for high risk pregnancies due to pre-eclampsia. There are, however, studies in both "normal" pregnancies and in hypertension. One such study published in China noted that music therapy is used widely in China, particularly in maternity nursing, for the purposes of improving postpartum depression, alleviating pain, shortening labor, and promoting healing after birth. The authors also note,

[i]n the western world, music therapy has been shown to relieve pain and anxiety for women in labor...there is little published research concerning music interventions in women with high-risk pregnancies. Given the positive effects of music therapy on healthcare and maternity nursing, and the adverse physical and psychological effects associated with bedrest for high-risk pregnancy, research to explore the effects of music therapy on this particular population are warranted.¹⁵²

¹⁵¹ Toker, "Effect of Turkish Classical Music," 1.

¹⁵² Yang M, Li L, Zhu H, et al. 2009. "Music Therapy to relieve anxiety in pregnant women on bedrest: a randomized, controlled trial." *MCN Am J Maternal Child Nurs.* 34: 318. Emphasis added.

With language similar to Toker's, these two studies begin grounded in the belief that music therapy can be beneficial in high-risk pregnancies, where both mental and physical well-being are at stake. Both studies used a State Trait Anxiety Inventory in order to measure State and Continuous Anxiety Levels, and carefully monitored systolic and diastolic blood pressure taken, along with pulse and respiratory rates. While both measured fetal heart rate, only Dr. Toker's measured fetal movement numbers. Dr. Toker also measured "satisfaction," referring to patients' satisfaction with the nursing care they received during their hospital stay according to the Newcastle Satisfaction with Nursing Scale (NNCS).¹⁵³

According to her study introduction and design, Toker's understanding and deployment of music therapy is rooted in a medical literature that "proved years ago that music affects spiritual and mental well-being, and the body, positively." She states outright that "[i]n this context, music therapy, which is a cognitive behavioral therapy type with high effect on anxiety, can be used as a complementary and alternative treatment method".¹⁵⁴ Even while Toker notes that music therapy also affects the body above, the explicit aim of the study is to measure stress and satisfaction via psychological inventories—tests relying upon verbal questions/answers—without consultation of physiological data. Music therapy is thus understood as 1) primarily associated with disorders of mind such as anxiety, and 2) an incomplete treatment in and of itself, instead most effective in combination with biomedicine and pharmaceuticals. Yang et al likewise conceptualize of music therapy in relation to the mind, noting at once the effects of music on physical and psychological health, and that most studies target, record, and report on primarily mental health uses. It is of course well-known that mental health and the body are inextricable, and that anxiety, depression,

¹⁵³ Yang M et al, "Music therapy," 318; Toker, "Effect of Turkish Classical Music," 2.

¹⁵⁴ Toker, "Effect of Turkish Classical Music," 1.

and other mental illnesses manifest in physical symptoms. No such physical measurements are accounted for in the reporting of anxiety.

Buselik and *nihavend makam-s* were chosen for use in Toker's study based upon their association with general relaxation, stress reduction, and blood circulation. Patients then choose between the two, with the chosen *makam* used in music therapy for thirty minutes a day for seven days: five before childbirth and two after. Patients listened on an mp3 player with headphones and had control over the volume. Toker notes that during the study, patients' bladders were empty (to avoid restroom breaks), and that they "start[ed] the music presentation by taking three deep breaths for concentration, repeating the breathing exercise in case of lost concentration, closing cell phones, and not having any medical interventions during the presentation."¹⁵⁵ This is nearly identical to Yang et al who allowed patients to choose from "classical music, pleasant music, and Chinese folk music." Classical music included Haydn, Mozart, and Beethoven, while "pleasant music" referred to the music of Bandari.¹⁵⁶ The category of folk music was comprised of three well-known Chinese folk songs.¹⁵⁷

Choice was a recurring topic in several interviews, with interlocutors from psychotherapy, obstetrics, and TÜMATA each emphasizing the importance of patient choice in therapy. Dr. Kömürcü agreed.

"You mentioned that patients need to be able to choose their own music," I began.

She specified, "I mean, choose one from the musics used in music therapy."

¹⁵⁵ Toker, "Effect of Turkish Classical Music," 4.

¹⁵⁶ Bandari is a New Age music group who has been popular primarily in China and Taiwan since the 1990s. Bandari is less of a band and more of a brand, with no members names being public.

¹⁵⁷ Yang et al, "Music therapy," 319; see Chapter 3 for a discussion of culturally specific use of classical musics in therapy.

“In your opinion, is there one that is best? Most effective? For example, is *makam* music most effective, for psychological or biological processes? Is there something like this?

“That variable is according the situation. Now, the music you listen to while working will be quite different from any music used during music therapy.”¹⁵⁸

While this echoes Çoban’s comments in Chapter 3, there seem to be contradictory criteria for music therapy: the music must be something chosen by the patient but must also be deemed suitable for music therapy. As seen above, particular genres of music—most often classical or elite genres—have been medicalized, mapped onto the body as it is conceived within the biomedical model. Medicalized genres used for music therapy—in Turkey, that is *makam* court musics, Sufi musics, etc.—are imbued with biopolitical ideology by the medical-industrial complex, even if popular discourse doesn’t reflect those values.¹⁵⁹ In choosing a music for therapy, then, the pool of options is severely diminished to only those meeting both criteria. This system upholds European enlightenment philosophy and aesthetics through explicit replication of body-mind dualism in musico-medical frameworks.

“Patient choice,” if it can be termed as such, thus represents a concession to medicalization on behalf of the patient. The body becomes an object of medical institutions through interventions; it is not a medical object outside the imperialism of medical practice. This is not to say that all medicine is colonialism, but instead specifies that biomedicine is not an organic, acultural, or apolitical epistemology emerging from the body as a given unit. For Haraway, science as *a* worldview is not *the* worldview, and as Jules Gill-Peterson summarizes, “science is not a

¹⁵⁸ Kömürcü, interview, 2020.

¹⁵⁹ For Turkish music, this is particularly poignant, given the medical versus popular valuation of Sufi music in a state that forces underground Sufi practice.

transcendently objective description of the real world, nor should it be.”¹⁶⁰ The patient is an agential figure, and the process of becoming a patient, willingly or unwillingly, is to be subjected to medical process and the gaze of the physician, a gaze that sees the patient in discrete parts, one which Foucault has attributed to a clinic that appears “in the doctor’s experience—as a new outline of the perceptible and storable.”¹⁶¹

Through the process of becoming a patient, this patient choice is surrendered—at least in the case of formalized studies. Patient choice of music seems a personal, or perhaps social, quality incongruous with biomedical epistemology. While valuable critiques of this patient gaze have resulted in contemporary approaches of seeing the patient in their entirety, Annemarie Mol notes that this reduction of the patient to parts is perhaps not so simple: the patient’s condition, on the whole, and acute conditions within the body “do not have a transitive relation. Instead, they are distributed over different sites.”¹⁶² This is to say that switches occur between the social—patient as being—and physical—patient as biological entity—during treatment. Patient choice of music is a social quality, as opposed to the particular musics ultimately used within a study that override patient choice—a quality made physical through medicalization (see Chapter 3). So while patient choice in music is the standard for the application of therapy outside the context of a controlled study, such a standard is never subject to the scrutiny of the physical, with Turkish classical music standing in.

¹⁶⁰ Donna Haraway, *Crystals, Fabrics, and Fields: Metaphors that Shape Embryos* (Berkeley: North Atlantic Books, 2004); Jules Gill-Peterson, *Histories of the Transgender Child* (Minneapolis: University of Minnesota Press, 2018), 37.

¹⁶¹ Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception*, New York: Pantheon Books (1973), xviii.

¹⁶² Annemarie Mol, *The Body Multiple; Ontology in Medical Practice*, Durham: Duke University Press (2002), 123.

Returning to the pragmatics of the case study, we find that these switches between the social and physical of the patient are further complicated by, as seen above, the focus on anxiety without regard for the physical markers of anxiety. While the *makam* chosen by researchers are said to reduce anxiety and be good for general relaxation by TÜMATA, they also are said to reduce blood pressure, improve circulation, and have effect on the abdominal area and hips—all qualities that seem appropriate for a dangerous form of hypertension in pregnancy. Toker notes that preeclampsia “causes fear and anxiety in pregnant individuals regarding themselves or their babies, and presents as anxiety,” in addition to physical risks including “babies with low birth weights (SGA),¹⁶³ variational APGAR scores,¹⁶⁴ fetal hemodynamics,¹⁶⁵ movement disorders, increase in the risk of pre-eclampsia, early membrane rupturing, or caesarean sections.”¹⁶⁶ Music therapy was not tested as a method for treating pre-eclampsia as a physiological ailment, but instead framed and tested as an alternative treatment option for the psychological side effects of pre-eclampsia.

Most notably, in the presence of statistically significant changes in physiological data, when “music therapy was found to...decrease blood pressure, [have a] positive effect on fetal

¹⁶³ SGA refers to “small for gestational age,” which puts the infant at risk of “perinatal morbidity and mortality, and of somatic diseases that can last throughout childhood and into adulthood.” (Eiríksdóttir, V. H., T.L Ásgeirsdóttir, R.I Bjarnadóttir, R. Kaestner, S. Cnattingius, and U.A. Valdimarsdóttir. 2013. “Low birth weight, small for gestational age and preterm births before and after the economic collapse in Iceland: a population-based cohort study.” *PloS one*, 8(12)).

¹⁶⁴ APGAR score refers to the “scoring system that was a rapid method of assessing the clinical status of the newborn infant at 1 minute of age and the need for prompt intervention to establish breathing” created in 1952 by Dr. Virginia Apgar. The system asks physicians to numerically score newborns on a 0-2 scale on color, heart rate, reflexes, muscle tone, and respiration. These ratings are given at 1 and 5 minutes after birth. Depending on the score, infants may continue to be monitored and scored at 5-minute intervals for an additional 20 minutes.

The Apgar Score. Committee Opinion No. 644. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 126 (2015) 52–5.

¹⁶⁵ Fetal hemodynamics refers to bloodflow. See C. Brezinka, 2001, “Fetal Hemodynamics,” *J Perinat Med.*, 29(5):371-80

¹⁶⁶ Toker, “Effect of Turkish Classical Music,” 1.

movement counts, and minimalizing effect on fetal heart rate” and was “not found to have a significant decreasing effect on anxiety,” the authors concluded as follows:

Briefly, music therapy was found to have positive effects and help provide a supportive and humane environment as well as improve the experience and environment of the pregnant women, and it may be suggested that nurses and midwives can utilize music therapy in the care and follow-up of pregnant women with pre-eclampsia in maternity units.¹⁶⁷

Because the goals of the study were clearly defined within the frame of “anxiety,” the authors are relegated to the conclusion that their initial question was answered in the negative, even with statistically significant (positive) responses in physiological data. This illuminates a more significant problem with the scientific method and biomedical research writ large: epistemological limits under the guise of objectivity, rationality, and clarity ultimately obfuscate the implicit (and sometimes explicit) knowledge that arises in the search for something else. The rigidity of scientific epistemology, already forcing music to its fringes, denies the agency of sound and its production of relevant data through entrenched mechanisms of masculinism-qua-scientism, even while sound offers a profound reconceptualization of biomedicine.

Agency and epistemology remain central across the studies examined not only in this chapter but in this project broadly. As in Chapter 3, we must ask how a framework of “engagement” or a lens of intentionality are implicated in the study design and the analysis of the results, as well as my own interpretation of the possibilities for sensory medicine broadly. Engagement and intentionality necessitate that we follow agency and the trails of its figures in order to ask, engagement *of* whom, *by* whom? Between which particular figures of music therapy practice? In the next section, these questions guide my close reading of the study design through

¹⁶⁷ Toker, “Effect of Turkish Classical Music,” 8.

the Takeshita's lens of motherfetus, which elucidates how these relationships of engagement are defined through particular ideological frames.

4.4 Motherfetus

Drawing on Chikako Takeshita's concept of motherfetus in my analysis of obstetric studies creates space for the emergence of a body politic at once singular and multiple. Motherfetus is "a boundary-breaching cyborg figure" that figures the pregnant body as engaged in a symbiotic relationship without drawing distinction between (gendered) mother and fetus.¹⁶⁸ Takeshita argues that "fetal corporeal independence, which underpins both medicalized childbirth and antiabortion arguments," reifies Cartesian dualism as it maps onto the mother-fetus binary.¹⁶⁹ Takeshita draws from Karen Barad's agential realist ontology in order to undo this binary, citing Barad's assertion that the fetus does not pre-exist the designation of itself as such. That is, the fetus is the creation of "historically and culturally specific iterative intra-actions of material-discursive apparatuses of bodily production."¹⁷⁰ For Barad and Takeshita, the fetus does not exist as a biological given prior to its being imbued with cultural, social, and political valence, because biology is likewise not a pre-cultural state of being.

¹⁶⁸ Chikako Takeshita, "From Mother/Fetus to Holobiont(s): A Material Feminist Ontology of the Pregnant Body," *Catalyst: Feminism, Theory, Technoscience* 3, no 1 (2017): 19.

¹⁶⁹ Takeshita, "Mother/Fetus," 3.

¹⁷⁰ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007), 217. Quoted in Takeshita, "Mother/Fetus," 4.

Motherfetus reveals the foundational assumptions of medicalized approaches to the pregnant body that are likewise reflected in how music is used within the study design. Combined with an analytical lens of engagement—as outlined in Chapter 3—motherfetus leads me to ask the following questions: with whom does a particular instance of music therapy seek to engage, mother or fetus? It also serves as a conceptual model for my own formulation of soundbody, or the intra-action between sound as a material force and the physiological processes of the body. Framing soundbody in the Baradian terms of intra-action, wherein “[a] phenomenon is a specific intra-action of an ‘object’ and the ‘measuring agencies’; the object and the measuring agencies emerge from, rather than precede, the intra-action that produces them,” I argue that our bodies are not simply receptive to sound without consent, but that both somatic and psychical responses to sound render the listen capable of resistance.¹⁷¹ By taking a materialist approach to sound, listening, and the resistance to sound, soundbody works between physiological and emotional/affective responses to music in order to understand how music is applied as a biotechnic or medicine, and how the body engages in multiple, often contradictory, responses to sound.

In this section, I think through the studies and interviews discussed above within the framework of motherfetus, laying the groundwork for the following section on soundbody. Drawing attention to the ideological assumptions around mother/fetus and sound/body relations in the study design and discussion of results, I demonstrate that music therapy provides space for, and demands, more capacious conceptualizations of science and medicine that include folk practices without subsuming them under the imperialist rubric that first delineated them as epistemologically separate. Seeing mother/fetus and sound/body as intra-actions rather than as

¹⁷¹ Barad, *Meeting the Universe Halfway*, 128.

causal, reciprocal, or reactive crystallizes the complex timeplace in which their meanings are created, as well as the biopolitical stakes of their ontological separation. This is to say that biomedicine as an ideological project has a stake in the separation of mother and fetus—granting personhood to a fetus so as to criminalize abortion—and the separation of soul and body—maintaining biomedicine as a rational and objective practice rooted in 18th century philosophical ideals of perception (See Chapter 5).¹⁷²

Understanding the European underpinnings of obstetric care and its development in Turkey includes acknowledgement of difference as a key philosophy of biomedicine. Schiebinger notes that “a vast and largely unexplored literature on both racial and sexual difference arose at the end of the eighteenth century,” only decades prior to the Ottoman overhaul of medical practice and education.¹⁷³ For the Europeans, this of course included a focus on drawing distinctions between Europeans and Africans, among other groups. But it also included drawing distinctions between men and women of the same racial makeup. Aside from marking childbearing and genitalia as the defining features of the sexes, other physical features such as facial hair were revered as demarking a virility that was even mapped onto menstruation and childbearing abilities of women of the same race.¹⁷⁴

Defining sexual difference through childbirth is not a project solely of biological or sexual dimorphism—though this certainly reflects the logics of trans-exclusion radical feminism in our present moment—but also a project of exerting control. As noted above, Balsoy argues that emphasis on pregnancy and childbirth in the Ottoman Empire was a political project aimed at

¹⁷² See Foucault, 1973.

¹⁷³ Londa Schiebinger, “The Anatomy of Difference,” 388.

¹⁷⁴ Londa Schiebinger, “The Anatomy of Difference,” 391-2.

increasing the Muslim population. This biopolitical project was the subject of pregnancy manuals and other source materials during the Ottoman 19th century, according to Balsoy, and she argues that “these prescriptive books structured femininity.” However, she further points towards “the opportunities they created for women’s agency,” noting the paradoxical relationship between mother and child, wherein the mother’s body is the site of state intervention, but also rendered a critical part of Ottoman longevity.¹⁷⁵

I situate contemporary experiences and studies of pregnancy within this historical framework in order to demonstrate not only how the highly medicalized formulation of childbirth came to be, but also towards an understanding of how the mother-fetus relationship goes unaddressed in much of this research. While the term motherfetus invokes the gendered/sexed identifier of mother as a presumably assigned-female-at-birth person with a uterus, Takeshita argues that motherfetus “ultimately displaces the sexed physiology of reproduction and helps bypass the burdened trope and construction of the maternal body. Consequently, it liberates women from obligatory childbearing by offering the possibility of a trans-pregnancy.”¹⁷⁶ I have and continue to use ‘mother’ and ‘woman’ throughout this project in order to align my language with the language of self-identification of participants in these biomedical studies but do so with the recognition of the ways in which this language, in other contexts or other projects, might replicate biologically determinist perspectives on sex and gender. Takeshita’s formulation of the motherfetus is thus helpful in both accommodating the self-identification and local gender politics of my particular case studies, while remaining spacious for varied application across pregnancy contexts.

¹⁷⁵ Balsoy, *The Politics of Reproduction*, 80.

¹⁷⁶ Takeshita, “Mother/fetus,” 20.

During my afternoon with Dr. Kömürcü, I sip tea as she repeatedly spins in her chair, rifling through folders and sifting through books, filling a file for me to take and asking that I take photos of books to go look up later. This includes a 2017 article of hers I have not yet seen, written with Dr. Candan Ersanlı Kaya, who at that time works at the Sultan Abdülhamid Han Education and Research Hospital on Istanbul's Asian side. This hospital is the largest obstetrics and childhood diseases hospital on that half of Istanbul, and the study research was conducted more than a decade prior to its publication.¹⁷⁷ Kaya and Kömürcü seek data on the effects of music therapy, together with labor education, during the patient's first pregnancy with induction. This study, in many ways, reflects the assumptions of Kömürcü's study with Toker above: key words include "labor pain" and "pain management methods"; the authors draw specific attention to how, separate from pregnancy as "a physiological process, it causes a load and stress for all women"; and while the danger of induction to fetal health is quite high and noted in the article, the overall focus of the study, particularly in the results and discussion, focus on the mother's experience of pain and labor distress.¹⁷⁸

In addition to the music therapy intervention (discussed below), this study included several surveys for the patients. They are as follows:

1) Information Form on the Individual Characteristics of the Pregnant Woman - age, education, occupation, age at marriage, age of menarche, number of abortions, number of curettages, location.¹⁷⁹

¹⁷⁷ Candan Ersanlı Kaya and Nuran Kömürcü, "Effects of Education and Musical Therapy Given During Labor on the Process of Birth in Induced Primipara Pregnant Women," *International Journal of Medical Science and Clinical Intervention* 4, no 3 (2017), 2797-2807.

¹⁷⁸ According to Kaya and Kömürcü, the rate of complications with delivery are much higher in induced pregnancies, with rises such as fetal distress, hyperstimulation, and uterine rupture. They note stress in particular due to this being patients' first pregnancy and delivery. Kaya and Kömürcü, "Effects of Education and Musical Therapy," 2797-8.

¹⁷⁹ Menarche refers to one's first menstruation. Curettage is a particular method of abortion (declining sharply in usage) that involves the scraping of the uterine lining.

2) Information Form on the Labour Process of the Pregnant Woman - pregnancy planning, fetus's sex, parents' gender preference for child, knowledge of labor process, sources of information on labor, fear, information and knowledge of methods for coping with pain, preparation and readiness for labor, understanding of induction, knowledge of induction process and methods, fear of induction.

3) Question Form on the Relation of the Pregnant Woman with Music - music listening habits, including genres, frequency, context, music education history, instrumental ability of patient and husband, patient experience with listening to music while pregnant, and any subsequent effects.

4) Monitoring Form of the Induced Pregnant Woman - dose of induction drugs, fetal heartbeat, frequency and duration of contractions, severity of contractions, pupil dilation, respiration rate, pulse, and blood pressure.

5) Observational Monitoring Form of the Induced Pregnant Woman - Behaviors such as visible nervousness and discomfort, crying, complaining, screaming, lip biting, pressing together of the palms, self-harm, seeking company, lack of communication, susceptibility to sensation, and physical movement.

6) Post-Natal Procedures Evaluation Form - Difficulty and pain during labor, pain management methods used during delivery or inability to do so, satisfaction with pre-birth education, effects of music on pain, willingness to listen to music during labor, musical preference, efficacy of the music, willingness to play music for the infant post-delivery, and timing/context for playing music for the infant.¹⁸⁰

In addition to the general information one would expect for a medical intervention, the questions regarding musical preference and education are a key difference between this study and that conducted with Toker. As Kömürçü and Azize (and Çoban in Chapter 3) tell me, patient choice is critical to music therapy interventions, as they create space for the patient to be open to healing through music therapy. This survey on music, as well as the first two, were conducted prior to the induction of pregnancy. Women in the control group were likewise given the musical preference survey, with the absence of the final questions about music's efficacy in their prenatal stress and pain. Despite surveying patients' musical preferences, they were still submitted to the same musical examples as therapy. As in Toker's article, TÜMATA is cited as providing the definitive list for musico-medical treatment, and here patients listened to music in the *rehavi makamı*.

¹⁸⁰ Kaya and Kömürçü, "Effects of Education and Musical Therapy," 2798.

According to TÜMATA, and quoted by Kaya and Kömürçü, *rehavi makamı* helps with labor, in addition to “[giving] the feeling of infinity and being independent from gravity (comfort).”¹⁸¹

Musical examples were played on a Walkman device with headphones during induction, starting at the beginning and then used for 20 minutes at one-hour intervals. This was repeated for at least six hours. Perhaps most critically, all patients in both control and study group received music therapy. Music was thus not a variable for the experiment, but a constant. The variable was in fact education: “The pregnant women in the control group were not informed about the labour or birth; only music was played for them.” This stands in comparison to the study group, where “patients were then informed on the importance of labour, induction, and why induction was applied, effects of induction, labour pain, methods of dealing with pain, and effects of music on the process of labour for 10-15 minutes.”¹⁸²

This study design raises ethical questions for mother and fetus alike, while simultaneously rendering the musical dimension of the study moot. Kaya and Kömürçü data shows that for the control group, who did not receive a short introduction to induction and pain management methods, only 37.5% knew what induction was, and 25% knew how it was performed, whereas the study group statistics are largely irrelevant, given that those patients received instruction.¹⁸³ This is of ethical concern for several reasons, particularly because of the serious risks of induction to mother and fetus alike, including uterine rupture or fetal asphyxiation. While Kömürçü’s work from the late 1990s focused on the relationship between music and the frequency of contractions

¹⁸¹ Kaya and Kömürçü, “Effects of Education and Musical Therapy,” 2799. See also TÜMATA’s website, tumata.com

¹⁸² Kaya and Kömürçü, “Effects of Education and Musical Therapy,” 2799.

¹⁸³ Kaya and Kömürçü, “Effects of Education and Musical Therapy,” 2800.

during labor, Kaya and Kömürcü have rendered the musical variable as a control, drawing out education as a variable rather than as a right of the patient.¹⁸⁴

From the standpoints of ethical practice and risk assessment, this study presents a unique challenge for understanding how music therapy is being discursively positioned vis-a-vis pregnancy, but also materially vis-a-vis the mother and fetus. As with the Toker study above, the fetus is largely made invisible, but the study design's focus on the mother, even while the conditions necessary for inclusion in these music therapy studies—pre-eclampsia, primipara induction—hold significant risk for the fetus. But this erasure of the fetus can be rectified through Takeshita's lens of motherfetus, which renders visible the shifting relationality between mother and fetus. Even by virtue of "being pregnant," the fetus is recognized.

Takeshita's Baradian proclivity complicates this recognition, particularly in addressing this recognition and relationship as forms of agency. Takeshita notes that any fetal agency is only within the halobiont network of interconnected and reciprocal relations. In Barad's sense, agency is not power enacted by one object over another, nor is it the political self-determinacy of public discourse. This is because "objects" do not exist as ontological distinct for Barad. Rather, she theorizes "agential realist ontology" as a mode of interpreting intra-action and "agential cuts," or the observation of phenomena and enacting of agency by distinguishing between what we might call separate objects or beings. An agential cut "enacts a resolution within the phenomenon of the inherent ontological (and semantic) indeterminacy. In other words, relata do not preexist relations; rather, relata-within-phenomena emerge through specific intra-actions."¹⁸⁵ Under Takeshita's

¹⁸⁴ Nuran Kömürcü "Travayda dinletilen tedavi müziğinin gebenin anksiyetesine etkisi," *Hemşirelik Forumu Dergisi* 2, no 3 (1999), 89-96.

¹⁸⁵ Barad, *Meeting the Universe Halfway*, 140.

neologism, the mother and fetus do not preexist their relationship, and pregnancy is rendered an indeterminant state.

Visibility of the fetus within these studies is critical in consideration of their ethical design, particularly under present discourse wherein self-determinacy as agency is granted to either the mother or fetus, but never both. Fetal agency is of course the linchpin of conservative movements against abortion, fetal stem cell research, and other biopolitical ideologies under the guise of piety. This can hardly be called agency, even under loose definitions, because it functions not as self-determinacy but as a false individualism meant to appeal to humanitarian ethics, in addition to its synecdochal function for disciplining and essentializing “women” (see above in reference to trans-exclusionary radical feminism). Maternal agency serves the counter-project, wherein “my body, my choice” calls for political and medical agency, absorbing the fetus as a part of the singular “body.” *Motherfetus* draws our attention to these reductions in order to remove this duplicit agency entirely, instead offering a framework rooted in materialist-feminist and biological thought at once: the motherfetus is holobiont, an assemblage of inextricable biopolitical categories—mother, fetus, bacteria—that is at once multiple in its composition but singular in ecological unity.

For Toker, Kömürçü, Kaya, and others working in obstetric research, this agency is often prescribed only for the mother, not only through her enrollment in the study and acting on behalf of the fetus, but also through the design study and application of music. Framed within stress, distress, and knowledge as pathologies of the mother rather than within the potential for physical harm to the fetus under conditions such as hypertension and asphyxiation, these studies present a significant problem for ethical listening practices: what does it mean for musical healing practice to be instrumentalized, or perhaps appropriated, towards the advancement of a supposedly a- or pre-cultural scientific knowledge which simultaneously relies upon and dismisses historical

practices so deeply embedded a specific religious-cultural history? Further, how are particular musico-medical systems and notions of ‘healing’ broadly being co-opted under conditions of medicalization wherein self-determination is all but removed by situating knowledge about one’s condition as a variable of study?

Music is quite confounding here: it is the basis of these studies, the inspiration for physicians seeking to bridge the divide that science itself dug; it is assumed as a control, while that same assumption undermines its potential efficacy; and it is touted as having the ability to heal or comfort, while being displaced from its historical centrality in favor of biomedicine. “The knowledge is in the music,” Azize repeated to me several times during our interview, “this knowledge has been passed down for centuries, for millennia, through music.”¹⁸⁶ And the sincere belief in this principle, even amongst medical researchers like Kömürçü, ultimately undermines musics’ potential in biomedical settings, because its efficacy is extended by researchers to mean “effective under any conditions.” But for the Ottomans, musical healing occurred under highly specific conditions attuned to the time of day, week, month, and year, to the geography, to religious and astrological conditions, and to patients’ illness. TÛMATA works hard to replicate these practices, with attention given to space and environment, to the use of particular instruments and the presence of water, and most importantly, to allowing music to stand on its own as a treatment, even amid biomedical technology. Biomedical epistemology, as it stands, nonetheless requires a transformation of method, especially that critical extra-musical apparatus that is not “extra” at all, instead playing a key role in musical healing as a multi-modal practice.

¹⁸⁶ Güvenç, interview, 2020.

Motherfetus thus draws our attention to critical junctures not only between those subjects referred to as ‘mother’ and ‘fetus,’ but also between medical intervention and the agential being in a given study. In order to more fully analyze these studies, the next section will move towards soundbody, my framework for thinking through the relationship between sound and body as both material and metaphor in an intra-active way. Soundbody is indebted largely to Takeshita and Barad, with a basis in agential realist ontology and application within the mother/fetus/sound relationship. It also relies on recent work in the materiality of music and sound, such as that of Eidsheim. Pulling together sound studies and feminist science studies, I follow the analysis that motherfetus enables towards a sonic critique of biomedicine’s fixation on corporeality as a singular and isolated modality, favoring a Baradian intra-active ontology wherein the sound-body relationship is both reciprocal and contested.

4.5 Soundbody

Attending to sound-body intra-action means, in many ways, drawing ourselves out of the ear and placing our thought at the surface of the body. These surfaces—our skin, surely, but also our organs as internal surfaces—have become omnipresent in the study of music and sound, particularly with the rise of sound studies, disability studies, and affect theory in the music studies disciplines. While each of these emerges from a unique genealogy of thought, they can also be gathered together under the umbrella of materiality. New studies in music’s materiality, spurred on by those literatures above, move music away from the discursive towards deconstruction on the one hand, and phenomenology on the other. Each offers our disciplines a refocus on music and sound’s agency, one which extends rather than breaks from the politics of textual histories of music.

Echoes of the material turn of the 1980s and 90s are clear in this work: feminist theorists of this period initially attentive to the body's discursive formation—Butler's "heterosexual matrix," for instance—pivoted towards materiality as a mode of attending to experience as a phenomenon of the body, one wherein histories were etched, subjectivity was formed, and the body was denaturalized as a cultural object.¹⁸⁷ This turn was parallel to, or maybe within, the affective turn of the same moment, where poststructuralism was deemed unfit for emotion and experience as loci of subjectivity and knowledge production.¹⁸⁸ Attention to the body is thus important for 1) identifying the body as a body, and 2) finding that body a productive conduit for experience.¹⁸⁹ Moving beyond metaphors of the body in sound, and perhaps even beyond affect and emotion as in/determinate modes of bodily response, materialism might offer music studies both knowledge of sound through the body, as we have seen in the work of Eidsheim, but also knowledge of the body through sound— knowledge derived from these affective responses, certainly, but also from sound and body as entities created through an agential cut rather than ontology.

I will refer to this site of sonic-corporeal knowledge as *soundbody*, a framework for analyzing listening through the body as a mutual, reciprocal action. Critically, *soundbody* refutes models of listening and emotion/affect slippage wherein sound creates or elicits an effect from the body. While metaphors of bodily pain and pleasure enjoy frequent use in discussions of musical experience, they most often rely on cause and effect as governing law: this music *made* me feel

¹⁸⁷ See Butler, 1990, 1993; Grosz, 1994.

¹⁸⁸ Affect here does not refer to particular subjective emotions, but to Brian Massumi's formulation wherein the affective is the space between "content" and "effect," a space of indeterminacy often elided with "emotions" in contemporary usage. See Massumi, 1995.

¹⁸⁹ On the body, language, and subjectivity, see Butler 2015.

that way. Bracketing the potential here to externalize emotions from our subjectivity, causality relies upon false notions of bodily latency in listening. Soundbody instead approaches listening from the perspective that listening as an intra-active process allows for bodily action (rather than reaction) from various positions. This is to say that rather than a passive receptacle for sound without agency to consent, the body is an agential and active figure capable of meeting sound in a number of ways.

My formulation here complements, but remains distinct from, Deborah Kapchan's explication of what she calls "sound bodies" in relation to her work on Sufi song in Morocco. As one of several terms she uses modified by sound—sound knowledge and sound writing, for example—Kapchan describes sound bodies as "a body able to transform by resonating at different frequencies."¹⁹⁰ Kapchan's formulation is likewise tied up in the affective transmission of listening, a key part of musical performance according to Gill's ethnography, as well as "intramodal ontology, a paradigm of imbrication, cohabitation, and co-extension wherein the limits of the subject cannot be assumed."¹⁹¹ Influenced too by Barad, Kapchan moves away from relationality towards what Barad called "intra-activity." There remains a tension in Kapchan's work between the particularities of listening—what she terms the "literacies of listening—and an implicitly naturalized mode of listening rooted in a psychoanalytical concept of the body. The former a mode of interrogating "the importance of the auditory in enacting transcendent experiences of the sacred," literacies of listening represent a departure from the discursive and movement towards the material-affective.¹⁹²

¹⁹⁰ Deborah Kapchan, "Body," 38.

¹⁹¹ Deborah Kapchan, "Body," 38.

¹⁹² Deborah Kapchan, "Learning to Listen: The Sound of Sufism in France," *The World of Music* 51, no 2 (2009), 67.

Regarding the latter, Kapchan has more recently argued that “[t]he body begins with sound, in sound,” a perspective that draws heavily on the psychoanalytical tradition, especially Julia Kristeva and Didier Anzieu. As discussed at length in Chapter 5, these types of “sonic naturalism” present in continental philosophy and psychoanalysis may ultimately preclude already-marginalized forms of listening and music-making. But Kapchan’s analysis of Sufi song doesn’t enact this naturalization; she instead sees the listeners’ sound bodies as “a resonant body that is porous, that transforms according to the vibrations of its environment, and correspondingly transforms the environment.”¹⁹³ Despite reference to Kristeva’s *chora* and Anzieu’s skin ego, Kapchan’s work largely remains grounded in the phenomenological experience of Sufi practitioners. However, the risk of naturalizing listening seems present in the assertion that we are born in and of sound—a risk too of installing a notion of subjectivity solely within sound. My theoretical model fundamentally questions such naturalizing questions that suppose a normative relation between, for example, mother and fetus, between sound and listener. My model of soundbody contributes to the robust literature on theories of listening a focus on agency, an explicit refusal of naturalized listening and medicalized bodies, and a mode of consent in listening. Soundbody, in my work, resists such naturalization, instead tracing the construction and mediation of listening practices between the biotechnics of sound.

Following my analysis of these studies above using Takeshita’s formulation of the motherfetus, I will focus here on these studies’ implicit assumptions—as well as their emergent possibilities—through the lens of soundbody in order to draw out the intra-active dynamics of listening and music therapy. Models of music therapy primarily drawn from post-war England and

¹⁹³ Deborah Kapchan, “Body,” 38.

United States employ a framework of pathologized body, targeted treatment through music therapy, and a view of music as either soothing the mind or working in the body through exercises of motor function. While Turkish classical music therapy is thus quite unique in its view that particular *makam*-s will effect change within physiological systems through vibration alone, the linearity of pathology-treatment-health is built into biomedical epistemology and tends to dominate other potential outcomes. Soundbody assists in locating these moments of friction between scientism and the knowledge systems it subsumes and appropriates.

Even as the studies purportedly focus on sound, they begin at the level of flesh. In selecting subjects, finding those who might best help physicians to demonstrate their ideas, inclusion and exclusion occur on the body. For Toker and Kömürçü's study on preeclampsia, diagnosis was obviously key. A naming of one's condition based upon physically observable attributes, diagnosis functions as a key, in many ways. Eli Clare writes that diagnosis opens the door to cure, it gives one access to the necessary treatments, while necessitating that one be named ill or disabled, instead closing the door to swaths of the able-bodied world.¹⁹⁴ It gives access to studies such as Toker's, or to clinical trials, while never ensuring one won't end up in the control group. Diagnosis allowed 126 women to be considered for Toker's trial but was only the beginning. 84 of these 126 met inclusion criteria, including:

- 1) Being an inpatient for at least five days with a diagnosis of pre-eclampsia,
- 2) Being in the 30th week of pregnancy or above (Because Non-Stress Test would be taken during observation and the music would continue until birth and after birth)
- 3) Being at or above 18 years of age (for detailed Informed Consent Form),
- 4) Having a live, single, healthy fetus.¹⁹⁵

¹⁹⁴ See Clare, 2017.

¹⁹⁵ Toker, "Effect of Turkish Classical Music," 2.

Aside from diagnosis and the age of consent, these inclusion criteria center the birth event as a part of the music therapy intervention. Giving birth to a single fetus—which is not contextualized, but we might assume has to do with the risk of carrying and giving birth to more than one—is the site of intervention, not simply anyone experiencing pre-eclampsia. Interestingly, Toker’s study does not use music during the birth, only before and after, in order to measure anxiety and stress relating to the macro-conditions of the pregnancy rather than the experience of giving birth. The effects of music during childbirth are measured by Kaya, whose study with Kömürçü stipulated only that participants be primipara and past the 37th week of pregnancy. There were no exclusion criteria listed, although we can glean that all participants were pregnant with only one fetus.

Both studies collected and compared vital metrics, including pulse, respiratory rate, systolic and diastolic blood pressure, and fetal heartbeat. Toker and Kömürçü also collected fetal movement numbers, whereas Kaya and Kömürçü measured the pressure and frequency of contractions during labor. Additionally, Kaya and Kömürçü measured emotions and physical behaviors associated with pain, which was one of their targets in the study. These include excitement, anxiety, crying/complaint, screaming, lip and palm biting, self-harm, fear of staying alone, refusal to communicate, and sensitivity. These behaviors were quantified and used as a metric in assessing how music affected their frequency between hour intervals for the same patient, as well as between different patients in the study and control groups.

Physical vital signs are the primary proof of efficacy or absence of efficacy: for Toker and Kömürçü, these markers pointed towards no effect of music on anxiety and stress but did point towards physiological efficacy. Kaya and Kömürçü likewise found some physiological effect—systolic and diastolic blood pressure were lower in the study group—but they were less significant

than the Toker/Kömürcü study. In particular, there was no significant change in fetal heart rate, as opposed to Toker and Kömürcü who did find significant difference in fetal heart rate and fetal movement. Instead, Kaya and Kömürcü learn more heavily on music: they note that 60% of study group patients reported the music to be effective or partially effective, and this number increased to 92.5% post-natal. This “positive effect” is a difficult marker to pin down, given that additional data was collected in the pre- and post-natal periods, including music’s effect on relaxation, sleep, emotion, and “makes feel good” [sic].¹⁹⁶ In the post-natal period, these metrics included “relaxed,” “gave peace and confidence,” “reduced pain,” “provided compliance,” and “had no effect at all.”¹⁹⁷

These physical markers and patients’ qualitative self-reporting are demonstrative of the cause-effect principle. Patients met physical inclusion criteria—primipara or pre-eclampsia—and measures were taken before, during, and after intervention, allowing researchers to observe changes over time as an intervention takes place. Patient experiences pre-eclampsia, feeling stressed and exhibiting high blood pressure; patient receives music therapy, listening via headphones to 20-30 minutes as dictated by study design; patient self-reports and measures are taken after. Difference indicates effect. This linearity is a critical part of biomedical epistemology, at least within study design, because it measures efficacy specifically through demonstrable, quantifiable changes. No evidence, no therapy.

But as above, Mol reminds us that there is no “transitive relation” between micro and macro conditions. In her example, “the patient speaks in the outpatient clinic while the artery is enacted as a deviant entity in the radiology department.”¹⁹⁸ The patient’s overall condition, how they self-

¹⁹⁶ Kaya and Kömürcü, “Effects of Education and Musical Therapy,” 2801.

¹⁹⁷ Kaya and Kömürcü, “Effects of Education and Musical Therapy,” 2801.

¹⁹⁸ Mol, *The Body Multiple*, 123.

report in response to the question “how are you feeling?” does not reflect the condition of highly localized pathologies. Does this, however, hold true in the interpretation of data? Does it work in the negative, when patients report pain or suffering without a local pathology found to explain it? Research tells us it doesn’t, that patient self-reporting is diminished in favor of empirical data—we need only look so far as health disparities along lines of racial and ethnic difference. Can the assertion that “playing music during labour...[has] been shown to...reduce anxiety, labour pain and sensitivity” hold true when only 23.8% of post-natal responses indicated pain reduction? When 4.8% reported no effect whatsoever? Or when 10% expressed their desire to listen to a different type of music during labor, with no indication that researchers did so in order to preserve the study?¹⁹⁹

Disparities between qualitative and quantitative data in healing practices might then be a critical space for the emergence of alternative epistemologies, themselves necessitating a reorientation towards ontology as well. I take seriously Zoe Todd’s assertion that “ontology is just another word for colonialism,” and that the dominance of Euro-American thought elides millennia of knowledge production by indigenous peoples, rendering indigenous thinkers and peoples “disembodied representatives of an amorphous Indigeneity that serves European intellectual or political purposes.”²⁰⁰ Todd’s assertion here reminds us of the rhetorical uses of Africa by interlocutors and scholars in Chapter 2, wherein the primitive and feminine African body is used to denote innate musicality. This reorientation turns away from those of biomedical imperialism and its fixedness, I draw from Barad cognizant of the continued reliance on Indigenous ontologies

¹⁹⁹ Kaya and Kömürcü, “Effects of Education and Musical Therapy,” 2801, 2805.

²⁰⁰ Zoe Todd, “An Indigenous Feminist’s Take on the Ontological Turn: ‘Ontology’ Is Just Another Word for Colonialism,” *Journal of Historical Sociology* 29, no 1(2016): 7.

and as Sarah Hunt writes, “the partiality of knowledge.” Hunt continues, “its relational, alive, emergent nature means that as we come to know something, as we attempt to fix its meaning, we are always at risk of just missing something.”²⁰¹

Soundbody is not meant purely as another neologism heaped onto the pile but must be so in order to adequately address this emergence, in Hunt’s language and my own above. I share critiques of new materialism and object oriented ontologies with Todd, Hunt, and others as I turn instead towards relationality and agency as criteria for analysis, due in part to the unequal structures of power within biomedicine and cure-driven healing, and in part critiques of object-oriented ontology for what Andrew Chung describes as its “radically flat” approach to materiality that might “strengthen phobias towards difference.”²⁰² I move slowly and carefully here in order to employ soundbody as a meaningful mode of critique attentive to agency and relationality not as given states of being but as ongoing actions with the potential to change course, to increase or decrease, particularly under observation.

Returning to the data above, to the incongruence of qualitative and quantitative data in music therapy research, we are immediately struck by two related questions: to which is “efficacy” attributed, vital metrics or patient self-reporting? And more difficult yet, can it be considered effective if patients do not like it and ask for something else? Kömürcü, Toker, and Azize all expressed that patient choice is a critical part of music therapy practice. In a recent publication, Toker noted that music from one’s own culture is most effective, particularly a given country’s

²⁰¹ Sarah Hunt, “Ontologies of Indigeneity: the politics of embodying a concept,” 31.

²⁰² Andrew Chung, “Posthuman but not Post-colonial: The Subject of New Materialism-Inspired Sonic and Vibrational Thought Remains Hegemonic,” American Musicological Society - Society for Music Theory Joint Meeting, video.

“authentic” music.²⁰³ Such an assumption of connection between a person and the music of “their” culture continues to collapse the rhizomatic developments of sociality, culture, and biomedical epistemology into a neatly packaged treatment through a process of medicalization. In the Turkish context, within which Toker herself works, this is particularly puzzling, because Turkish classical music is a niche interest that does not enjoy the popular usage of European classical music in media.

Despite its lacking ubiquity, Turkish classical music is nonetheless disciplined as a medical genre, one which must be supported by empirical evidence. As seen in Kaya and Kömürçü, the metrics don’t bolster claims to medical efficacy with only blood pressure being affected. Instead, they turn to patient self-reporting: turning patient responses into statistics, turning musical response into medicalized data that supports its disciplining. Negative patient responses are made into statistics interpreted as inconsequential, a process which likewise negates agency of the patient (and their body) and grants full agency to physicians and to sound. To answer the first question: it seems that metrics given priority to patient self-reporting.

Centering bodily action in a music therapy intervention requires that we take patient self-reporting seriously. During one interview, as Dr. Kömürçü explained to me the importance of patient choice, I asked if she had ever had a patient react negatively to music. She recounted to me her days as a resident, days when *arabesk* music was particularly popular.

In those years of Turkish music, *arabesk* was the new music circulating in Turkey—today it is more common. It was playing in the wards, in the delivery room, it was playing everywhere. As a matter of fact, in the delivery room, a woman was in labor and greatly straining herself, working very hard. ‘I’ve died! I’ve ceased! A grave!’ It was this type of music. I remember going straight to the head doctor, “what is this?” Because of women’s need for motivation there, therapeutic music has different qualities, you know. There is

²⁰³ Eylem Toker, “Müzikoterapi ve Obstetri” In *Sağlık Biliminde Yeni Gelişmeler*, ed. Hüseyin Eriş and Feray Bucak, Ankara: IKSAD Publishing House (2019), 551.

Zen music, or classical music, or the Ottoman *makam* music of Turkish art music [“*Türk Sanat Müziğinin Osmanlı makam müzikleri*”]. At that time, I couldn’t name it either, I didn’t know what was happening either. I said, “it cannot be.” The woman will say, “I am dying here.” This type of music cannot be used. Not that. It is useful to let everyone listen to the music they like.²⁰⁴

Several valences to parse: the particular genre, *arabesk*, is often classified as “bad” or “trashy” music, at least partially because of the Arab musical influence. The denigration of the genre converts to the de-medicalization of the genre through the logic of music quality (class association, nationalism) as a marker of medical efficacy. As a popular music genre, *arabesk* also contends with rhythm as a litmus test for medicalization: Kömürcü, Azize, and Çoban each emphasized that fast and/or highly rhythmic music are less desirable for music therapy.

“I think that if I am going to do something [give a patient music],” Kömürcü said, “then I must ask, ‘which do you like?’ of these three [Zen music, far eastern music, Turkish classical/art music], but not arabesk, not oriental music, not rock music.”²⁰⁵

The systemic valuation of particular musics as medicalized and others as unsuitable, or even potentially dangerous, reflects a belief in the body and musical vibration as equal across contexts, as built the same, acting the same, and in need of the same treatment. It assumes the body as a passive receptacle to be acted upon, as best seen fit by a physician. It assumes that 10% of patients reporting that they don’t care for Turkish classical music and would prefer something else

²⁰⁴ Kömürcü, interview, 2020.

²⁰⁵ Here, the delineation between genres becomes difficult. While “Ottoman *makam* music” was included as a part of “Turkish art music” above, she refers here to “these three” from immediately prior in her own comment: Zen music, Far East music, or Turkish Art Music and Classical Music [Zen müziği, Uzak Doğu müziği, Türk Sanat Müziği ve klasik müzik]. These slippages highlight a productive friction of this study: how genre and history are continually reformulated and recombined within music therapy’s discursive construction, and ultimately, its material impact on the body.

Kömürcü, interview, 2020.

do not know their bodies or know music as well as researchers. It assumes that the gap between quantitative and qualitative data is not a productive and emergent space of indeterminacy, but in fact a gap in patients' knowledge of themselves, their bodies, and of sound.

In order to answer to my second question regarding the efficacy of a music that a patient does not like, we must decide whether "efficacy" means "statistically significant change across all patients," or "improvement to the patient's subjective experience." The ethics of medical care complicate this question, particularly as the stakes rise. But in the case of music therapy with the targeted goal of pain reduction, the answer is quite clear: no, music therapy will not be effective if the patient does not like the music. As with all medical intervention, there is no guarantee of success: patients have allergies to medications, diseases grow and change to adapt to treatment, surgeries fail to repair. In the context of lower stakes individualized care, the use of an undesirable music on the basis of supposed medical potency can be met with strong resistance.

Moments of resistance, of the body pushing back on sound, of emotional or affective action towards sound is of primary concern within my framework of soundbody. Rather than conceptualizing of the body as a vehicle without the agency to consent to intervention, as one which *must* receive and interpret sound waves regardless of its openness to such, the discrepancies of these studies point towards something else. Rather than a focus on quantifiable metrics whose value is transitively related to the condition of the patient, a body's openness to or rejection of sonic intervention is an agential move at the level of the flesh. I am not attempting to prove that some perpetual vibrancy of matter permeates the material world, though Azize does make this claim to me. This concept of vibrancy and resonance, central to Chung's critique of Eidsheim and the new materialists broadly, does not speak to the intra-action of sound and flesh in Turkish classical music therapy, because my usage is distinctly Baradian.

This is all to say that while agency does not solely belong to sound, nor to the patient, listening and music therapy do not occur on a flat plane of relationality devoid of power or politics. As with the *arabesk* example, such an intense expression against sound necessitates that both power and politics be addressed. One might write this off as simply a matter of taste, arguing for the place of aesthetics in such an analysis. And surely, aesthetics is present. But aesthetics is likewise implicated within power and politics, with the class association and national/ethnic pride that drives the medicalization of particular genres and the reduction of subjective experience to statistics. In drawing attention to the intra-action of soundbody, this critique intends to occupy the space between metaphor and material, speaking to both the political agency over medical choices, as well as the agency of the body to meet sound in ways that are not expected or prescribed by a physician.

Patient self-reporting aside, even the data provide inconsistent accounts of musical potential, perhaps due to differentiating methods of *qualitative* research converted into a statistical analysis. For Toker and Kömürçü, statistical significance was found in physiological metrics: blood pressure, fetal heart rate, and fetal movement numbers. A demographic survey included questions about musical taste and listening habits of both the control and study groups but was not included in the data or discussion of results. The inclusion of this data could have bolstered the unexpected physiological changes that occurred during music therapy: did patients report feeling more at ease? Did they feel calmer, or sleep better? Or did they hate it, did they dislike the Turkish classical music played for them? In the absence of self-reporting and of quantitative data broken down by individual patient, only sweeping claims rooted in medicalization of sound and the removal of corporeal agency can be made.

What of music therapy's potential? Amidst the chaos of numbers, where does music stand within these studies, and what emergent potential might we find within such a critique? These studies offer only one perspective on music therapy, whereas extensive practice occurs beyond the confines of the hospital room—or at least, beyond the hands of physicians. TÜMATA hosts extensive workshops and ritual events geared towards bringing in members of the public to their organization and practice, and their partnerships with hospitals have rarely occurred within a biomedical study. Working within Güvenç's premise that "when you feel something, you don't need to research it," all that is required is bodily openness, as above; music therapy interventions require consent. This openness and consent is tied to aesthetic preference insofar as one willing to feel *with* Turkish classical music. Even if one does not prefer the music for casual listening, there remains the possibility of its utility for healing *if and only if* the person consents. This is perhaps the most critical point: unwillingly submitting one to musical intervention is of serious ethical concern, and beyond mere distaste lies the potential for a bodily action within the intra-active framework of listening. Clear lines are drawn, agential cuts made, ontological distinctions implied during listening under conditions of duress, of coercion, of medicalization. But those instances of listening where one *feels* with the music—feels relaxed or at ease, feels a relief of pain as reported in these studies, feels enveloped as one does during a truly personal musical experience—there is no distinction to be made, because rather than carrying utility in the delineation of musical experience, agential ontological cuts serve only to distinguish determinate material from one another (an act of imperialism). This is an act of power, one with a vested interest in the separation of music from the body and medicine on ontological terms.

Soundbody draws our attention to agential intra-actions in order to draw out the shifting power dynamics as they enact cuts between body and sound. These cuts come in the way of sensors

and machine and the reduction of human experience to statistical models. By focusing on listening as an intra-active process, we draw out the vectors of agency and power enacting within the listening and healing processes. We are attentive to the body's role in listening, or in not listening, as well as the ways in which agential cuts of music and body are antithetical to healing as a musical practice. *It is precisely at this level and within this framework of understanding that the efficacy of musical healing emerges.* Feeling and the dissolution of boundaries not through metaphor but through our philosophical apparatuses are the metrics of healing, and this feeling is a mode of agency.

4.6 Music, Medicine, and Metaphor

Far from the critiques above, I still have the embodied memory of my interviews with Dr. Kömürçü, Toker, Azize. To some extent, they required that I suspend not only disbelief, but most preconceptions and plans I had. My list of pre-written questions to help quickly disappeared, particularly with Azize. Part of this may be that her perspective is of a practitioner and occupational therapist rather than of a physician. But her late husband Oruç *was* a physician, and Dr. Kömürçü expressed outright belief in the idea that particular *makam* heal particular ailments. This position meant our conversation was quite different, and she was open with the curiosity and wonderment she felt about the vibratory world: likening the call to prayer, something that she misses when visiting her home in Germany, to being able to fly.

Aside from taking flight, however, Azize didn't speak to me in metaphor. She believed in the reality of the events recounted me, to the same extent that Kömürçü, Toker, and Kaya all believe in the scientific possibilities of music therapy. The "big concert in the universe" resonating

in the planets and our bodies is very much a real phenomenon to her, one that we might even call intra-active. And while I am not attempting to make a case for such phenomena, it is imperative that we not slip into metaphor as the sole mode of discursive analysis. Gavin Steingo notes that while historians of science have approached sound transduction as a metaphor, his research on midwifery and listening in South Africa shows that metaphor cannot adequately hold the “‘really real’ social and material practices with ontological weight” witnessed in his fieldwork.²⁰⁶ Within and between the data discrepancies of the studies examined here, there is *still something happening*. Moments of discord between narratives and numbers are incredibly productive sites for getting to the heart of the matter, or as Barad might encourage, to the matter of the matter. Language gets closer to the flesh than numbers—sound, closer yet.

Soundbody is only my nearest approximation to the complexity of musical healing within a biomedical context, one which I did not get to witness myself in action but instead reconstruct through interviews and published studies. Most important is the emphasis on materiality and experience as loci of knowledge production, which do not function as analogies but rather as constitutive conditions for musical healing to take place. These conditions are not fixed but consistently unfolding before, during, and after music therapy interventions, and thus necessitate that any “codified” music therapy practice be flexible and individualized rather than homogenized as a general application.

Approaching Turkish classical music therapy from this perspective means remaining open to healing as a non-linear movement within constellations of psychology, somatic experience, emotion, religiosity, and politics while, most critically, *accepting this as a valid form of*

²⁰⁶ Gavin Steingo, “Listening as Life: Sounding Fetal Personhood in South Africa,” *Sound Studies* 5, no 2 (2019): 155-174.

biomedicine. This is not a concession to the restraints of biomedical epistemology, but rather a political rupturing of those very boundaries, because those conducting this research believe in its possibilities. Musical healing is not solely a metaphor because metaphor, as an abstraction or fiction of reality, cannot broach the tangible effects of the phenomena they (often poorly) describe. If it is a metaphor, then it is so only in the way Steve Larson describes, wherein metaphor is co-constitutive of our real, lived experience of music.^{207, 208} Musical healing breaks open biomedicine in the very real sense that these studies demonstrate its efficacy using biomedicine's own tools. But as argued above, the push for music therapy's inclusion cannot be achieved through the concession of its own unique methods of evaluation. Rather than ceding to the tools of biomedicine in hopes of assimilation, it necessitates qualitative measurement and flexibility of design and application.

By taking music healing seriously, we necessarily revisit the narratives of medicalization that have specifically positioned Turkish classical music as, according to some, a genre imbued with superior healing properties. These properties reify elitist and nationalist exclusionary politics that do not necessarily reflect the genre's contemporary public reception and discourse, but instead particular conceptualizations of health and the body under Turkish biopolitical projects. Further, these properties rely on the teleological narrative discussed in Chapter 2 and above, requiring that the line from Central Asia to Istanbul be constantly redrawn in order to maintain the specific

²⁰⁷ On music, metaphor, and emotion, see Walton, 2015; On music, metaphor, and motion, see Larson, 2012.

²⁰⁸ It is imperative we be clear about the uses of metaphor in discussing musical experience, particularly as they relate to health and the body, because of the potential for metaphor to be weaponized as a method of discursive abstraction used to erase the experience of those most vulnerable to harm. Rather than using metaphor to get away from the body, understanding metaphor and experience as co-constitutive might allow words to get as close to the skin as possible.

etiologically claim being made to the body through sound. But as seen here, analysis of studies and their results show that this medicalizing narrative does not ultimately serve patients receiving music therapy, only those practitioners and researchers who believe in it. Quantitative results show, for the physicians, statistically significant results, and qualitative data from Kaya and Kömürçü's study reveal that many patients outside this narrative still report the efficacy of music therapy before, during, and after labor. Taking musical healing seriously does not mean accepting this narrative of Turkish classical music or this version of medical history in Turkic society, but instead that positive results are found regardless of it.

Moving forward with this practice, the medicalization of Turkish classical might be bracketed in favor of a focus on relationality, materiality, and the intra-action of listening and music therapy practice. Soundbody as a framework for approaching listening from a somatic and agential perspective shifts the focus away from historicism, at least momentarily, and allows for listening in music therapy to unfold as an intra-active phenomenon. This is important because it creates room for consent, intent, and engagement to be more clearly enacted in the intervention by the patient, as opposed to a model wherein music is applied as a pharmaceutical to the body as a pathologized, empty receptacle objectified by biomedicine.

5.0 Sonic Materialism and the Biotechnics of Musical Healing

5.1 Mediation

“So, in order to prevent making others in the hospital uncomfortable,” I asked, being careful not to pause too long, given the delay of speech on Zoom, “you were using headphones during your study. But if you were to use live music...”

Dr. Toker finished my sentence: “...it would be more effective.”

“Why, how? For just the mother, or for the mother and fetus both? In what way is it more effective?”

“In the studies, the most effective sound is live music; it is said that the voice of the mother and father is the most effective for the baby. When you play in a live environment, you notice it yourself. The energy you take in from a live music performance is different than the energy from listening with headphones.”

She went on to describe listening to *Acemaşiran makamı* during her own first delivery, listening on her phone for two weeks before the birth each time she was in pain. She listened to the music during and after giving birth to her daughter and noted that her newborn began to cry when she turned the music off.

“Of course, it may have been more effective to listen to a live performance. It appears as that since we listened with headphones, it affected the baby through the mother.”²⁰⁹

²⁰⁹ Eylem Toker, interview by author, November 5, 2020.

It was precisely these fascinating questions—of the materiality and phenomenology of listening, of the relationship between mother, fetus, and sound—that began this project three years ago. Toker’s article on music therapy and pre-eclampsia, written with her advisor Dr. Nuran Kömürcü, remains a productive site for examining the prevailing narrative in Turkish medical research on folk medicine and other historically informed practices. The preceding chapter analyzes this study in primarily epistemological terms, asking how Turkish classical music undergoes a process of medicalization in order to make claims to the body and reproduction. These claims are subsequently re-contextualized *ex post facto* towards the creation of a genealogy (read: teleology) of Turkic musical healing from Central Asia to Anatolia, through the Ottomans and ending with contemporary Turks (see Chapter 2). In this chapter, I address epistemology together with ontology in order to get at what sound and music as mediated material practices *are and do* within biomedicine.

Our experiences of sound are determined, in part, by how they are mediated. If we accept Steven Connor’s assertion that our interaction with sound is always an after-effect (rather than an experience of the natural immediacy of certain audiophile accounts), and our histories of sound are therefore in fact histories of the *production* of sound, then our studies of music and sound must critically account for listening and performance as always-ongoing processes engaged with space, time, bodies, feelings, and the other messiness of existence.²¹⁰ That is, etiological arguments about our access to knowledge through sound’s immediacy miss the point: rather than sound’s ontology or etiology, sound is far more useful (and interesting) from the standpoint of epistemology insofar as it leads us places and it does things. Understanding sound as *going* and *doing* is critical for

²¹⁰ Steven Connor, “Acousmania”, <<http://stevenconnor.com/acousmania.html>> (2015), accessed 4 January 2021.

situating sound within specific cultural frameworks rather than as some universalizing material. Sound's contingency and mediation are precisely the elements with which we must contend.

Among many of the physicians and researchers discussed in this project, musical healing is practiced most often as an active-auditory process (see Chapter 3). I say “active-auditory” in order to denote that for my interlocutors, the process of musical healing doesn't necessitate bodily movement such as dance but does require that the patient be *engaged* during music therapy interventions rather than acting as a passive receptacle, as is the dominant characterization of pharmacological medicine (though complicated by allergies or analyses of the body as always-unfolding). Even while *Turkish classical music therapy* does work in a prescriptive mode, with particular *makam* being used for healing particular physiological ailments, it is not understood so simply as taking a pill and requiring no further action. Patients instead must devote their attention and energy towards listening as an engaged process of healing.

One subset of interlocutors, however, assert that musical healing can indeed occur with passive listening. While it may not be as effective as active listening, Azize tells me that simply listening is enough. If the knowledge and efficacy is in the *makam*—the assumption underpinning the work of Toker and Kömürcü, for example—then passive listening should suffice, to some extent. Those who expressed this idea to me—Azize, Kömürcü, and Toker—would certainly agree that active, engaged listening produces a stronger effect of the *makam*. But it isn't necessary for *an* effect to take place; passive listening is *still listening*.

Patients in biomedical research studies and psychotherapy using *Turkish classical music therapy* all listen to music using an mp3 player or smartphone and headphones. Aside from the impracticality of live musicians performing for each subject of a study group, or in a given patient's psychotherapy session, headphones have the effect of delineating time and space for the listener.

This can sever the listener from their space by creating an auditory “bubble,” as Michael Bull argues, with the headphones and listening device acting *upon* the body. I have argued elsewhere, however, that rather than displacing the listener from their environment, rather than creating a barrier, that listening through headphones and a device can instead reorient the listener to their space, reconfiguring the individual’s relationship to space which otherwise may be difficult, even hostile.²¹¹

While I cannot attest to individual patients’ experience this without ethnographic evidence (which was not available to me, given the timing and blind nature of these studies), this raises the point that patients’ music therapy experiences *are mediated through sound reproduction technology*. This is, of course, an innovation of the late 19th and early 20th centuries, and Ottoman music therapy usage sharply declined at the beginning of the 19th century as Mahmud II drove the Europeanization of the Ottoman bureaucracy, including the training of physicians in Europe. Prior to this decline, *Turkish classical music therapy* was practiced in Ottoman *dariüşşifa-s* (hospitals) in large rooms specifically designed for optimal acoustics, and patients were brought into this room to listen, rather than listening from outside or adjacent areas. Rather than attempting to narrate an originary mode of performance and listening, I note that here too the performance was mediated: by a particular structure with specific acoustics, by particular preconditions of health, and by prescriptive objectives which framed both performance and listening.

I argue in this chapter that the mediation of music and sound in the context of musical healing can usefully be conceptualized as a biotechnic. Framing musical healing within this term is specifically not about ceding to biomedical epistemology and its neoliberal impulse; on the

²¹¹ Steven Moon, “Listening Technology and The Gay Male Body in Azerbaijan,” *Etnomüzikoloji Dergisi* 1, no 1 (2018): 49-67.

contrary, it specifically works to reconfigure the technologies of sound reproduction and their use in music therapy as valuable parts of biomedical practice *while still rooted* in knowledge systems beyond and preceding contemporary biomedicine. A framework of “biotechnics” is thus helpful in contextualizing Turkish classical music therapy most accurately as it sits on the fringes of (if within) the realm of biomedicine but relies on and perpetuates historically informed practices otherwise deemed “non-empirical” (which most nearly means “not real” in biomedicine). By more accurately locating music therapy vis-a-vis biomedicine and understanding its movement within varying networks of practice—musical, medical, folk healing—we might clarify the contributions of music therapy to the healing process *on its own terms* and move towards a framework of health/healing more capacious and less obfuscated by what amounts to a mere few centuries of superimposed knowledge.

Addressing the material conditions of listening as an historically situated and ethically bound practice are further necessary for addressing the metaphysical shift from Ottoman medicine to contemporary music therapy. Following the turn towards new materialism, discussions of the past decade in music and sound studies have considered the implications of sonic materialism for the disciplines, particularly in light of critiques of materialism and the Whiteness of the ontological turn.²¹² While this debate largely hinges on sonic naturalism as a universalizing theoretical approach to sound studies, this chapter follows the necessary critique of such naturalism at a localized scale towards an examination of sound reproduction and listening as necessarily materialist practices. Following my explication of *soundbody* in Chapter 4 as a theoretical apparatus for acknowledging agency of the body and sound as intra-active in a Baradian sense, I

²¹² See Thompson, 2017; Goh, 2017; James, 2019; Campbell, 2020; Sergeant, van Elferen, and Wilson, 2020.

further demonstrate that existing theoretical approaches to sound-body relationships, particularly those already attempting to address materiality, fall short at the moment of sonic contact. That is, listening is understood as sound touching a passive body. By taking an intra-active approach to listening and sound reproduction technology, I argue that listening as a mediated practice necessarily engages the listening body as an active and agential figure.

Refocusing on case studies from the two preceding chapters, I conduct a close reading of these studies' designs and mechanics. Contextualized within ethnographic interviews conducted between 2018-2021, my analysis lives within the frictions of anachronistic technologies of listening that are nonetheless critical to contemporary music therapy practice. Looking closely at sound, its ontological considerations under the rubric of materiality and naturalism, and its epistemological possibilities as a biotechnic, I offer a framework for studying sound as material that remains attentive to the limits of materialist inquiry.

I will begin with an overview of new materialism in music and sound studies, laying out where my materialist commitments lie and positioning them within this debate. These commitments, which might be concisely summarized as “epistemology *with* ontology,” reconfigure the listening process as the intra-action of sound-body. This follows significant work by scholars such as Nina Sun Eidsheim, who has significantly reshaped discussions of listening and music making as a material practice for ethno/musicologists. Thinking intra-actively in the way of Barad, my theorization of *soundbody* and its materialist register is more closely attentive to the listening body, its potential to reject sound, and its being-a-human. That is, rather than thinking of the body separate from the being, I conceptualize of listening and the listener as cultural-material, following Barad's onto-epistemology. This is critical for contextualizing the

material practice of listening within Islamic metaphysics and understanding listening as *learned rather than given*.

5.2 Sound Studies, Auditory Culture, and Music's Matter

New materialism in music and sound studies finds itself much in the same predicament as it does in philosophy, with its claim to work beneath or before signification and representation meeting significant critique of its universalizing and naturalizing moves that ultimately reinstate whiteness and masculinity as the unmarked bases of existence. In music and sound studies in particular, Brian Kane has noted that his has led to a rejection of “auditory culture” as a distinct, separate object of analysis—one which those of the ontological proclivity don’t necessarily value.²¹³ This emerges, in part, from new materialist distinctions between the actual and virtual, nature and culture, and the like, wherein difference (“culture”) is in fact material.

In some areas of sound studies, this has manifested as what Annie Goh calls sonic naturalism.²¹⁴ Early germinal work in sound studies, such as R. Murray Schafer’s conceptualization of soundscapes, “admonish[es] the ‘unnatural’ sounds of the ‘loud’ industrialized world since modernity in favour of ‘natural’ ones of a ‘quieter’, pre-industrial past.” This feminized naturalism and its masculine counterpart—the “earwitness,” an “authentic listener”—together imply access to precultural or acultural nature, and ontology of sound

²¹³ Brian Kane, “Sound studies without auditory culture: a critique of the ontological turn,” *Sound Studies* 1, no 1 (2015):2-21.

²¹⁴ Annie Goh, “Sounding Situated Knowledges: Echo in Archaeoacoustics,” *Parallax* 23, no 3(2017): 283-304.

unimpeded by technological mediation and pure in its untouched naturalism.²¹⁵ This naturalism is the keystone of much sound studies work by disciplinary philosophers—Jean Luc Nancy and Christoph Cox, for example—as well as others working in sound studies broadly—Steve Goodman is Kane’s example.

Between sound studies and auditory culture lies a philosophical assumption that music’s supposedly inescapable representationalism obscures sound’s true essence. Kane coins these terms towards a *critique* of the ontological turn—the sound studies *absent* of auditory culture—arguing that these two figures must coexist insofar as the object of the former cannot be determined without the latter.²¹⁶ Kane takes Cox to task, then, for differentiating between the two through the Deleuzian terms of actual and virtual. For Cox, sound is always virtual and music is an actualization of sound. And this distinction is modulated through several registers by its critics: for Thompson, Cox’s work is a form of white aurality, with European patrilineal sound art occupying the seat of ontology to the detriment of musical forms, descending hierarchically from White to Black and Brown;²¹⁷ for Goh, these distinctions are representative of new materialism’s rejection of postmodernism and poststructuralism on the grounds of representation and the language-matter dichotomy, which “belies a division between the ontology of the object and the epistemology of the subject in sonic naturalism”;²¹⁸ and for Campbell, Cox ignores Deleuze and

²¹⁵ R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*. (Rochester, VT: Destiny Books, 1994), quoted in Goh, “Sounding Situated Knowledges,” 285.

²¹⁶ Kane, “Sound Studies Without Auditory Culture.”

²¹⁷ Marie Thompson, “Whiteness and the Ontological Turn in Sound Studies,” *Parallax* 23, no 3(2017): 266-282.

²¹⁸ Goh, “Sounding Situated Knowledges,” 287.

Guattari's notion of 'onto-ethology' challenging precisely the type of ontological inquiry conducted by Cox in favor of relationality.²¹⁹

None of these critiques of Cox imply that we cannot speak of ontology or materiality in sound. Quite the opposite, each scholar offers theoretically sound and practically viable modes of analysis, many drawing on Cox's work to do so. Importantly, gender and race are brought to the fore in both critique of Cox and alternative offerings, situating these vectors of difference as material conditions mutually constitutive of listening as a socio-politically contingent practice. This echoes the work of Nina Sun Eidsheim, who leads discussions in musicology on vocal performance and listening as material practices, as well as the relationship between the material voice and its racialized framing. Eidsheim emphasizes the *action* of singing and listening as dynamic interaction rather than sound, which she distinguishes on the basis of intention and conceptual orientation.²²⁰ Closely capturing the ontology-epistemology debate of the work above, Eidsheim's materialist approach—which she calls the *figure of sound*—argues that static notions of sound, listener, and so on are produced through continually unfolding processes. This is critical for addressing the human body as listener, whose agency is involved in this figure of sound.

In addressing the body, materiality often comes into contact with affect. In music studies and sound studies, these two areas have hardly been addressed together at once, but one is nearly always hiding within the other. Like Eidsheim, Steve Goodman is interested in a vibrational ontology of sound, with his particular interests lying in sound cognition and affect. While one won't find "materiality" addressed outright, its presence is felt throughout his discussion of affect:

²¹⁹ Iain Campbell, "Sound's Matter: 'Deleuzian Sound Studies' and the Problems of Sonic Materialism," *Contemporary Music Review* 39, no 5 (2020).

²²⁰ Nina Sun Eidsheim, "Voice as Action: Toward a Model of Analyzing the Dynamic Construction of Racialized Voice," *Current Musicology* 93 (2012).

“sound has a seductive power to caress the skin, to immerse, to sooth, beckon, and heal, to modulate brain waves and massage the release of certain hormones within the body.”²²¹ For Goodman, sound “cuts across the duality of physical or emotional processes,”²²² a claim which reduces physical and emotional feeling to a naturalized physiological process wherein the body is devoid of agency, an static vessel waiting to be moved by sound. But as Eidsheim demonstrates, listening is a dynamic process. Listener and sound alike are continually unfolding within one another—a phenomenon that Deborah Kapchan makes explicit in her formulation of “sound bodies.”

Without reducing affect to emotion to neurochemistry, as might be the impulse when addressing the body and sound as material intra-active entities, sonic materialism and affect must be addressed together because affect *matters*. Being that both affect and materialism come as responses in the 1990s to postmodernism/deconstruction, their interconnectivity is unsurprising, but largely ignored in music studies. The slippage between affect and emotion is well-suited for cultural analysis of music and sound and turns towards the materiality of listening appear only in the last decade in ethno/musicology. But if, as Patricia Clough writes, affect makes clear the dynamism of all matter, including (especially) our bodies, then discussing affect means discussing material.²²³

Affect and materiality are together foundational for speaking of sound and music in the Islamic world. If ocularcentrism has dominated narratives of the Christian West, then Islam has

²²¹ Steve Goodman, *Sonic Warfare: Sound, Affect, and The Ecology of Fear*. (Cambridge, MA: MIT Press, 2010), 10.

²²² Goodman, *Sonic Warfare*, 13.

²²³ Patricia Clough, “The Affective Turn: Political Economy, Biomedica, and Bodies,” in *The Affect Theory Reader*, ed. Melissa Gregg and Greg Seigworth (Durham: Duke University Press, 2009), 206-225.

often served as its foil. “Recite!” the Qur’an instructs. “Recite in the name of your Lord who created man from a clinging clot. Recite, and your Lord is the most generous,” it continues on. The prohibition on religious iconography, with emphasis instead on text as heard and vocalized, has characterized sonic inquiry into Islamic world(s), with this 96th Sūrah al-‘Alaq as our origin story. With the risk of reifying the ocular/aural binary mapped onto Christianity-Islam/Europe-Other/West-East, a sonic approach is necessary, if precarious, given the focus on the aurality of recitation and the call to prayer in daily life. The sonic sphere remains a contested space in contemporary Turkey, particularly in cities with sizeable secular or liberal populations where the call to prayer nonetheless echoes overhead from hundreds of Istanbul’s 3,113 mosques, voices crackling from loudspeakers affixed to towering minarets. Finding traces of sound’s imprint—or as we will see, that of silence—is always a project of affect and materialism because our histories are not of sound itself, as Cox might argue, but are histories of the production and mediation of sound.²²⁴

As Denise Gill notes, Islamic teachings and five centuries of Ottoman musical-medical practice are imbued in the contemporary performance of Turkish classical music. Beyond religious philosophy as an ethical-emotional framework, Islam in Turkish classical music healing is both affective and material. Gill recounts an interview with a Sufi *sheikh* (religious leader), who tells her the following: “Sound is an extension of God and can help in pushing people back on the right movement, the right frequency in the natural way. The vibration of sound vibrates a body. I remind the sick where their illness comes from.”²²⁵ Gill’s deep analysis takes affect as its primary lens for studying how music, emotion, and illness/health are practices and conditions of *community*, but

²²⁴ Steven Connor, “Acousmania,” 2015.

²²⁵ Gill, *Melancholic Modalities*, 155.

we can further see the material implications: sound *moves* the body, it *pushes* us into our place, it initiates *mutual vibration* with the body. Sound is always already a material practice, before and beyond the European philosophical tradition.

From this point, I will begin with a brief explanation of my theoretical framework for thinking through how the sound-body relationship has been characterized as active sound acting upon a passive body, *but always with sound as an instrumentalized, static force made active through the agency of another being*. I restate this framework, which I refer to as *soundbody*, in the terms of biotechnics in order to address how the nature-culture debate of materialism transmutes into the technology-nature dichotomy present in much sonic materialist scholarship. By thinking through sound healing and its constitutive technologies of sound reproduction as biotechnics, I aim to reconfigure our understanding of sound's relationship to the body as always already mediated. Critically, the evolution of such intermediary technologies—from principles of acoustic resonance in the architectural design of Ottoman hospitals to the compression of sound in mp3 files, heard through headphones—in relation to the listening body opens further questions of how the importance of materiality of sound shifts relative to both technology and Islam's fluctuating influence over musico-medical practice. I distinguish between multiple modes of Islamism in contemporary Turkey, from mystical practice to the conservative governance that outlaws such mystical sects as Sufis, in order to further contextualize the role of Islamic thought and governance in sound healing.

I then turn to the literature examined in the preceding two chapters from cognitive psychology, psychotherapy, and obstetrics, as well as the associated ethnographic material, explicating how the logistics of study design and execution rely on sound reproduction technology as a biotechnic in order to stake a claim to the body through mediated sound practices. Theorizing

the relationship between listeners, performers, and objects, many scholars in ethno/musicology have turned to actor network theory as a mode of analysis that grants power to sound and its constitutive technics. While such object-oriented ontologies are generally useful in creating a field of relational, agential actors, many criticize actor network theory for its dissolution of power and flattening of agency. Only recently have such discussions in music studies begun to turn to other modes of materialist inquiry, such as that of Karen Barad, whose agential realist ontology and formulation of the “agential cut” move towards “a contingent resolution of the ontological inseparability within the phenomenon hence the conditions for... description: that is, it enables an... account of marks on bodies, but only within the particular phenomenon.”²²⁶ Analyzing the study design through this lens draws attention not only to simple anachronisms between 18th century musical healing in an Ottoman hospital and 21st century scientific research, but more specifically to questions of temporality and somatics. That is, what shifts between the ephemerality of a live performance and the replicability of musical recordings? How does the poor sound quality of compressed mp3s, as compared to a live performance in an acoustically designed space, shift the material status of musical healing?

My commitment to materialism is contained within the parameters of intra-activity, corporeal and sonic agency, and epistemology. Broadly speaking, this project is not concerned with ontology alone, nor with its tendency towards sonic naturalisms, instead focusing on a contextualized and contingent onto-epistemology of sound operating within overlaps frames of Islamism, biopolitics, and musico-medicine. My intention is to demonstrate how a framework that addresses the intra-activity of listening—*soundbody*—helpfully renders sound reproduction

²²⁶ Barad, *Meeting the Universe Halfway*, 348

technology as a biotechnic, drawing attention to the ways in which shifting notions of the body, sound, and health since the Ottoman era result in sounds' diminished capacity to act upon the body. As Gill implicitly shows above in her ethnographic research in Turkey, the tension between religious healing and the imported biomedical model is primarily a question of metaphysics rather than one of materiality—both are always already material in nature.

5.3 Biotechnics and Soundbody

To begin with a conclusion: the most profound insight offered by the studies analyzed in this project is that through music therapy, we see another systematization of the body beyond biology. This conclusion is not stated outright—not in interviews, not in casual conversation, and certainly not in published studies—because it is implicit in the official conclusion that music can heal the body in quantifiable terms. Our bodies are whole and all-encompassing, dissembled in service of biopolitical and philosophical projects, only partially depicted yet called complete. Laura Glitsos notes that “this is the compelling status of the body in the world as it is torn between—and sewn together with—language, materiality, technology and philosophical treatments, which are all, ultimately, technicities.”²²⁷ Glitsos and others have turned to somatechnics as a model of the body produced through the entanglement of flesh and the material world, emphasizing that *sôma* and *tekné* are inextricable. In this vein, I likewise state outright that in following decades of work in the health humanities broadly, and disciplines such as disability studies and trans studies

²²⁷ Laura Glitsos, *Somatechnics and Popular Music in Digital Contexts* (Cham, Switzerland: Palgrave MacMillan, 2019), 2.

specifically, I reject biology as a precultural or acultural descriptor of the body. I reiterate that the biomedical industrial complex stakes a claim to the body through the language of biology as a part of a long history of biopolitics and eugenics.

As above, addressing the matter of sound runs the risk of exceptionalizing sound: to displace ocularcentrism, to bridge the virtual and actual, to unify nature and technology. Again, we find sound studies morphing into Goh's sonic naturalism, narrating ourselves into existence through aurality. "We are born *in* and *of* sound," Dominic Pettman writes, and "we become embodied and enfleshed within the squelches, rumbles, and pulsing thumps of the mother's body. Even before we have ears, we can "hear" through our skin." Sonic naturalism quickly becomes sonic etiology, we might say, staking a claim not only to being ("the sonic environment...constitutes us, as ontological beings"), but to our very origin.²²⁸ The supposed immediacy of sound, as critiqued in Jonathan Sterne's audiovisual litany and the field of sound studies since, melts down the organic matter of our bodies in a rhetorical (and material) move of naturalization. But paradoxically, the skin remains a barrier. Even as we are supposedly emplaced in the world through sound's envelopment, human exceptionalism reifies metaphysical distance. *We*, as embodied and conscious thinkers, are meant to *listen* to the voices of the world, the *vox mundi* that Pettman writes "are often in a kind of dialogue with each other: a loose but significant form of call-and-response."²²⁹ Studying sound and listening necessitates an *I*, to some extent, prohibiting new materialism's drive towards a complete vibratory dissolution of the subject. This

²²⁸ Dominic Pettman, *Sonic Intimacy: Voices, Species, Technics (Or, How to Listen to the World)*, (Stanford: Stanford University Press, 2017), 1. Emphasis in original

²²⁹ Pettman, *Sonic Intimacy*, 7.

limitation is further helpful in addressing the exceptionalism of sound, because turning an ear to our objects doesn't necessitate complete ontological refigurement.

Denaturalizing sound and listening is critical to my use of musical biotechnics. For those like Pettman, technology's appropriation of human voices—Siri, GPS voice navigation, and the like—threaten human exceptionalism, “seducing “us” into forms of recognizing, heeding, and needing different types of presences, usually reserved for the generic metaphysical Man or human neighbor.”²³⁰ But none of this actually does the ontological work sound is purported to do insofar as the listener-subject maintains primacy and containment within its own flesh. This is precisely the critique Goh, Thompson, and others make of the ontological turn in sound studies. Instead, we can more usefully think musical biotechnics through phenomenology, as scholars of somatechnics have. Nikki Sullivan gives a rather straightforward definition:

[T]echnés are not something that are added or applied to ‘the body,’ nor are they simple tools the already-constituted body-subject manipulates to its own ends. Rather, technés—in the Heideggerian sense—are techniques and/or orientations (ways of seeing, knowing, feeling, moving, being, acting and so on) which are learned within a particular tradition or ontological context (are, in other words, situated), and function (often tacitly) to craft (un)becoming-with in very specific ways. Perception, then, is both the vehicle and effect of a particular situated somatechnics, an orientation to the world in which the I/eye is always-already co-implicated, co-indebted, co-responsible.²³¹

Drawing not only on Heidegger but also Merleau-Ponty's account of the blind man's cane, Sullivan (and Linda Alcoff, heavily cited throughout) make the familiar argument of technics and technology perception and interpretation are not distinct processes, but one in the same: perceptions are shaped by, and shape in return, our environment and our engagement with it.

²³⁰ Pettman, *Sonic Intimacy*, 17.

²³¹ Nikki Sullivan, “The Somatechnics of Perception and the Matter of the Non/Human: A Critical Response to New Materialism,” *EJWS* 19, no 3 (2012), 302.

How, then, does music function as a biotechnic? Wary of overstating the emergent potential of music therapy, I draw on theories of bio/soma/technics to illuminate how musical healing practices themselves demonstrate a more capacious framework of healing and health. I use the “bio” prefix to specifically denote the relationship between music/sound and the body’s *cultural configuration as a biological entity*. Drawing attention to biology as the dominant paradigm as well as its supposed constitutive outsiders—culture, technology, politics—the framework of the biotechnic demonstrates here how musical healing practices and their necessary technologies are not external to biomedicine, as some might have us believe. Listening as a material practice *can* be understood as an interaction between the body and an external entity—medicine in the form of pharmaceuticals, surgical intervention, etc.—under the same rubric biomedicine uses to provincialize folk or traditional healing (i.e., render feminine and anachronistic, therefore ineffectual).

Ceding to biomedicine’s terms is one path forward, particularly for researchers who are trained in these disciplines. As will be shown in the following section, work in obstetric care conducted by academic-medical researchers is conceptualized, conducted, and analyzed in the expected biomedical terms. One emergent potential here for my interlocutors is that the tools and language of biomedicine are suitable for both the effective measurement and representation of musical healing practices as an empirical, quantitative method within biomedicine. In their view, their research demonstrates that music therapy is a viable biomedical treatment that does not necessitate any sort of epistemological shift, but rather that current modes of biomedical inquiry can already accommodate music therapy.

By thinking music therapy and its constitutive technologies as a biotechnic, however, I am interested in what is lost in the capitulation to biomedicine’s exclusionary tools. Doing this work

includes my theoretical framework introduced in Chapter 4: *soundbody*. I use this term to denote the (Baradian) intra-action between sound as a material force and the physiological processes of the body. Importantly, *soundbody* is helpful in addressing how the body engages in multiple, often contradictory responses to sound. The term is indebted in part to the bodymind or mindbody, terms emerging from disabled communities that recognize the inseparability of mind and body that becomes particularly apparent through disability or illness. In addition to Barad, the term is likewise indebted to Chikako Takeshita, whose “motherfetus” figures the pregnant body as engaged in a symbiotic relationship without drawing distinction between (gendered) mother and fetus.²³² *Soundbody* is thus a way to re-represent the intra-action of listening as a reciprocal, symbiotic relationship as opposed to unidirectional (sound touches/enters passive body).

In addition to recognizing the agency of sound—a central project of much work in sound studies—I use this framework to push back against the idea that sound as an “unavoidable” stimulus predetermines our relationship to it. “Indeed, sound is omnipresent and inescapable,” according to Christoph Cox. “Lacking earlids, we are forever and inescapably bathed in sound, immersed in it in a way that we are not immersed in a world of visible objects.”²³³ Itself a poor metaphor, the earlid’s material absence certainly is not evidence of an ontology of sound rooted in the naturalized world. Beyond the body, my theoretical approach is inclusive of biotechnics in the face of precisely these naturalist arguments, that the body *is* what the body is born. Using biotechnics to unfold this biologized notion of the body and reconfigure the relationship between body and technology—that is, particularly technologies sanctioned by the medical industrial

²³² Chikako Takeshita, “From Mother/Fetus to Holobiont(s): A Material Feminist Ontology of the Pregnant Body,” *Catalyst: Feminism, Theory, Technoscience* 3, no 1 (2017): 19.

²³³ Christoph Cox, “Sonic Philosophy,” *Artpulse Magazine*, quoted in Thompson, “Whiteness,” 271.

complex and called “medicine”—allows us to see our bodies as agential even in relationships where we are often rendered passive, and this certainly includes listening and our relationships to sound.

In what follows, I turn towards an analysis of obstetric research conducted by my interlocutors over the past decade. In particular, I focus on the mechanics of the study, including the study design and the uses of music technologies (mp3 players, headphones).²³⁴ Based on ethnographic evidence, I give particular attention to my interlocutors’ orientations towards sound and technology as they are framed within the study design, and offer insights from my fieldwork that illuminate the ways the mediation of sound via technology are interpreted through a quantitative medical rubric. Drawing on ethnographic evidence from interviews with non-academic researchers and amateur practitioners of Turkish classical music therapy, I show how framing music as a biotechnic with a focus on its materiality highlights the epistemological rupture my interlocutors point to; neither a part of biomedicine proper nor an outsider to its institution, Turkish classical music therapy is an emergent practice necessitating a novel approach sound and the body.

5.3.1 Material Orientations

In 2018 I spent an afternoon walking through the lower neighborhoods of the Fatih district of Istanbul, the “old city” home to Istanbul’s most prominent historical sites from both the Ottoman and Byzantine periods. I was searching for a small music shop tucked away on a side street from the main thoroughfare up the hill to Aya Sofya, the Blue Mosque, and other such tourist sites.

²³⁴ For detailed analysis of inclusion criteria in the study, see Chapter 4.

Happening upon the storefront, I find it resembles most Turkish music shops that occupy prime tourist real estate: large windows filled with instruments, occluding most of the inside. I see ouds hanging on the wall, rebab and bağlama hanging from the ceiling, and large decals below: MÜZİKTERAPİ; HEALING MUSIC; SUFI MUSIC; ETHNIC MUSIC.



Figure 5: Otağ Music Store (Photograph from Google Maps)

One can purchase instruments at Otağ Müzik—a man came in as I sat with the store clerk, asking “do you have ouds? Egyptian. How much?”—but stacked on the counter are CDs produced by TÛMATA, who owns the store as a part of their significant enterprise.²³⁵ Arranged neatly by

²³⁵ TÛMATA, while not a large organization, draws in a significant number of domestic and international tourists and clients through spiritual tourism. These include days- to weeks-long *sama* ‘ceremonies, workshops, and more. Turkey is already a hub for medical tourism, particularly due to the bifurcation of medical care into public and private institutions, with the latter providing increasingly large facilities funded by higher incomes and ultimately 83% of medical tourist services (see Buljubašić, 2019; Akgün, 2015). Coupled with TÛMATA’s own trips around the world, their model can be understood within similar frames to that of the neoliberal development of biomedicine. That is, far from discrediting the importance and necessity of the work they do, it

makam and color-coded, each advertises a different effect: *nihavend* and *buselik makam-s* for blood circulation, *hicaz makamı* for the kidneys and uro-genital system, *acemaşiran makamı* for correcting the position of a fetus in the womb. So simple and powerful are the healing properties of this music that one need only throw a CD in their sound system and they can reap the benefits. But to what extent?

During my interview with Azize Güvenç, she emphasized that the convenience of the CD for us in any setting, particularly in one's own home. She recounted the following:

We had one client, I remember, she is living in Germany but originally from Turkey, a little bit aged woman, and she was laying down and then she woke up and she told us what she saw in these receptive music therapy--and then came an intuition [to me], let us play *ilahi* for her. And we played, and she started to cry, and she said, "now I know I have to go back to my hometown to see it one time again before I have to die". So, it is an intuition question; of course, you have classifications of temperaments, of elements, of *makam*, which *makam*, which day... This is all classification but finally it is the intuition of the person who is doing the music therapy. And that makes the difference also with the CD, because you put the CD on then it is running, but when you are working individually then you can take from the *çanta* [bag, purse] what you need...or what you feel in that moment. But what we are doing in the moment when we are playing, I think, we take--it doesn't matter what we are playing in that moment but in that moment, we take some frequencies from the universe, because this music is already...is showing the frequencies of the universe. Yes.²³⁶

According to Azize, we are inundated by the vibrational frequency of the universe in our daily lives, what she calls "the big concert in the universe" as the planetary bodies move across the sky emitting their personal vibrational calling cards. And because of this saturation of sound in our bodies, because the efficacy of the practices lies in the vibrational impact on our bodies, *the listener benefits merely from being present*. That is, according to her, "sometimes people went into [a]

too falls under a capital-driven model of healing that renders the body the site of exchange: capital for health.

²³⁶ Güvenç, interview, 2020.

deep sleep, which doesn't matter, really, because the music is entering the body and the ears anyway, and maybe [their] subconscious."²³⁷

There seems a fine line here, separating Azize's account of Turkish classical music therapy and Cox's naturalist sonic ontology above. Fine, but quite distinguishable. This case study of Turkish classical music therapy in obstetric care demonstrates that, as Thompson and Goh specifically note, inquiry into sonic ontology is not doomed to naturalism from the outset, but rather that generalizability becomes an argument of onto-etiology, we might say. That is, Cox's naturalism critiqued by Goh points to an origin story (of sound), further complicating the notion of a sonic ontology specific to Islam, given the focus on sound's role in the creation and perpetuation of piety. By examining obstetric research and focusing on the mechanics of the study and ethnographic accounts of musical healing and practitioners' relationships to sound, I provide an example of sonic materialist inquiry that does not necessitate discussion of ontology, at least in Cox's terms. As above, my commitment to materialist analysis regards intra-activity, corporeal and sonic agency, and epistemology *as they emerge from ethnography and analysis*.

While the language of "materiality," per se, doesn't come up, my interlocutors *do* reference frequency and vibration as both measurements and expressions of the material force of sound, as well as listening as something felt on the skin and deep inside the body. In doing so, they seem to emphasize our ability *to perceive and be affected by* sound beyond "simply listening." As we see in Azize's account, and continue to see throughout other interviews, there is a sense that sound's presence and power, longstanding as they may be, are underestimated. And this is where I must follow their lead, where new materialist theory falls away from lived experience and embedded

²³⁷ Güvenç, interview, 2020.

perceptions of the world around us. Each interlocutor expresses their own relationship to music broadly, as well as their own orientation towards the practice of Turkish classical music therapy. These orientations are determined by each individual's background, surely, as well as their professional and personal investment in the practice. And critically, each of these constitutes idiosyncratic approaches to Turkish classical music therapy and listening as material practices.

Azize, for example, was formerly an occupational therapist in Germany, and met Oruç as he travelled across Europe demonstrating his music therapy practice. The two eventually married and she moved to Turkey with him, living first in Istanbul and then later, where I met her, in Yalova, a one-hour ferry ride across the Marmara Sea. Her orientation to the practice, while certainly informed by her past as an occupational therapist, also comes from Oruç's conceptualization of the practice, with its mysticism and reflection of cosmology. "The human being was a part of the universe, and the sounds we are playing are a part of that what is in the universe. And today we can make it visible, or hearable. Every planet has their own sound, so there is a big concert in the universe."²³⁸

And thus, we find some friction: what is the relationship between a CD's ability to heal hypertension, for example, and a new materialist ontology? As noted at the outset, this project is not concerned with ontology alone, nor with its tendency towards sonic naturalisms, instead focusing on a contextualized and contingent onto-epistemology of sound operating within overlapping frames of Islamism, biopolitics, and musico-medicine. Put another way, I draw on new materialism only insofar as it is helpful in understanding my interlocutors' understandings of sound as a force of healing and reflection of the world. If a CD can heal you, as they claim at the

²³⁸ Güvenç, interview, 2020.

counter of Otağ music store, then I am primarily interested in how that process relates to the imagined historical practice. And if there is a big concert in the universe that *makam/maqām* systems have come to mirror, then I will listen for those echoes in the accounts of hospital room music therapy interventions. Foucault writes that “in the non-variable of the clinic, medicine, it was thought, had bound truth and time together.”²³⁹ But biomedicine has no claim to the body beyond that co-exercised through imperialism and gentrification, one which has cast practices like this into the racialized and feminized past. Rather than extrapolating truths about the nature of reality as a vibratory existence, this case study and my interlocutors demonstrate a deeply situated onto-epistemology. Universal in scale but not necessarily in application, this practice is analyzed here as material in its application, in its relationship to the body, and in its greater intervention into the exclusionary politics of biomedicine.

5.3.2 Studies in Obstetrics

A study of sound and the body, quantified by Toker and Kömürçü:

“The personal information form prepared by the researcher consisted of 29 questions including socio demographic characteristics...obstetric information...and the relationship of the participants with music...”

“The State Trait Anxiety Scale (STAI) used in this study determines how an individual feels in a certain environment under certain conditions, consisting of 20 straight and inverse scored terms, and is scored between 20 and 80 in a Likert type scoring between 1 and 4.”

“The total score (on the Newcastle Satisfaction with Nursing Scale, NNCS) is converted into 100 before evaluation, and the maximum and minimum scores that can be taken from

²³⁹ Michel Foucault, *The Birth of the Clinic: An Archaeology of Medical Perception* (New York: Vintage Books, 1994), 55.

the scale are 95 and 19 respectively...The scale was applied to the participants in both groups after birth (in the 7th day of the intervention).”

“The systolic and diastolic blood pressures of each participant were measured with a newly calibrated classical manual blood pressure monitor (the same monitor was used in all participants, and their pulse and respiratory rates were assessed and recorded by the researcher.”

“Fetal heart rate (FHR) and Fetal Movements (FM) were recorded by applying 15 min of NST (Non-Stress Test) through Electronic Fetal Monitoring preferred in the clinic where the study was conducted.”

“Participants in the study group listened to the mode of music they selected from between the Nihavend and Buselik modes regularly 30 min a day for seven days through an MP3 player and headphones whilst laying down. The participants in the study group arranged the sound level of the music according to their desires, and the steps taken care of during application included the bladder of the participants being empty, starting the music presentation by taking three deep breaths for concentration, repeating the breathing exercise in case of list concentration, closing cell phones, and not having any *medical interventions* during the presentation.”²⁴⁰

Biomedicine is primarily paperwork and money, so much so that medicine’s specious apolitical posturing falls short at the bedside where decisions rely so heavily on language. “In the clinic, what is manifested is originally what is spoken.”²⁴¹ But one with experience as a hospital patient knows that it is the arithmetic of language physicians are often interested in, the conversion from discursive representation to quantification. How is your pain today, on a scale of 1-10? A deceptively difficult question that yields no real data beyond another number for your medical record, it speaks to a hallmark of biomedical epistemology that converts qualitative assessments into numbers whose accuracy is frankly not important.

In the study details above, we see how the numeric transcription of reported emotions plays out vis-a-vis the inclusion of music. This study focuses on pregnant mothers experiencing pre-

²⁴⁰ Toker and Kömürcü, “Effect of Turkish Classical Music,” 4. Emphasis added.

²⁴¹ Foucault, *The Birth of the Clinic*, 108.

eclampsia, a form of hypertension that can occur later in pregnancies and be life-threatening. Researchers collected biographical data, including musical taste (that is largely irrelevant, given the study's focus on one genre). Patients self-report their emotional state by valuating their relation to statements such as "I feel calm," "I feel secure," "I feel upset," and so on a scale from one to four, signifying the responses "Not at all," "A little," "Somewhat," "Very much so," converting arbitrary rankings to data that reverse engineers "stress" as a somehow stable marker of a qualitative position. Technology and machines measure blood pressure, pulse, fetal heart rate, and fetal movement numbers.

But what of music? How are we to incorporate music into the quantitative rubric? Before and after each music therapy intervention—which occurred for 30 minutes a day five days prior to birth and two after—blood pressure, pulse, and fetal heart rate/movement were measured. STAI and NNCS were taken after the completion of the seven days. At the end, music's in/efficacy was measured through statistical analysis that showed no change in anxiety via the STAI but improved satisfaction with nursing. Systolic blood pressure remained unaffected, while diastolic dropped significantly in the test group, particularly in the post-natal period. There was significant difference in fetal movement, and a "minimalizing effect" on fetal heart rate.²⁴²

What exactly happened? *Why* was music therapy effective? Amidst the forms and the questions and machines, how was it that a compressed audio file, stored electronically, transmuted into sound and then back again into electrical signals by the stereocilia in the inner ear, has caused healing to occur? Physicians and researchers have their answers: music therapy might have an effect on the autonomous and central nervous systems; or, listening to music might elicit positive

²⁴² Toker and Kömürçü, "Effect of Turkish Classical Music," 5-8.

emotions, and there is a strong correlation between emotional outlook/mood and patient health outcomes. But one possibility is missing from their conclusion and discussion: that it was specifically *nihavend* or *buselik makam-s* that healed.

Following the advice of TÜMATA, researchers in this particular study selected *nihavend* and *buselik makam-s* for patients due to their association with blood circulation and the abdomen. This study gave patients only two choices, but no additional note was taken throughout the study of which patients chose which *makam*, or if there was statistical significance between the two groups' measurements. This doesn't come down to belief or disbelief in the practice, however. Both Toker and Kömürcü emphasized in interviews their sincere belief in individual *makam's* unique healing properties. And one can walk into Otağ music store and purchase the appropriate CD for a given ailment and benefit from these properties at home. It is significant, then, that this alone was not sufficient evidence, if not wholly unsurprising. It is difficult to imagine such a study published in a medical research journal, one which claims measured physiological change was due not only to music therapy *but due to the specific makam chosen*.

“As of now,” Toker tells me, “we have not done a study comparing *makam-s*, investigating which *makam* is more effective. We did not do a study like this because it requires that we gather a very large group. I spoke with Nuran (Kömürcü), and it isn't that we didn't think of it. But for that reason, we stayed with fixed *makam-s*.”

Toker continues, noting she consulted texts from TÜMATA based on the work of Abu Nasr al-Farabi, whose texts from the Golden Age of Islam translated much of the ancient Greek's work on music theory into the terms of *maqām*, drawing the first associations between particular *maqām-s*, the four humors, and Islamic cosmology.

“For example, at birth, *Acemaşıran makamı*, if we want sleep, *rehavi makamı*, for hypertension, *nihavend* and *buselik makam-s*. I made each choice personal. But it was said to me that *buselik makamı*, because of its notes (construction), it will not cause anyone discomfort, it is the most basic and can be used comfortably. Maybe you can get more detailed information about this from someone with a knowledge of music. As a healthcare worker, I cannot say this *makam* is superior to another.”²⁴³

As shown in the previous chapter, the tacit assumption of particular *makam-s*’ efficacy—the other side of which seems to operate as “belief”—dominates the relatively small literature on Turkish classical music therapy. Even for the amateur practitioners, it seems necessary that one simply buy in to the system. The question “does this really work?” is critical to this project, but not in the sense that this research can answer it. For this project, it is a discursive frame the guides analytical questions. It also guides the research studies analyzed in earlier chapters, as well as this brief summary above, but with an important difference: these researchers do not ask, “does it work?” because they are unsure, but because this type of question is, if a bit broad, requisite for the scientific method. In the study above, for example, they ask if Turkish classical music therapy be used to reduce anxiety in pregnant women experiencing pre-eclampsia. And the answer is in fact no, it cannot, according to their own data. We see myriad other effects noted above—increased satisfaction with nursing, decreased diastolic blood pressure, increased fetal movement numbers, and a minimalizing effect on fetal heart rate—but the data disproves their hypothesis.

This complicates the question “does it work?” by drawing attention to the word “work.” Does it work *at what? In what way?* For Toker and Kömürcü in this study, the second half of this

²⁴³ Toker, interview, 2020.

question might look like, “does it work *at reducing anxiety in...*” Data says no. But if we reword the question, the answer changes. “Does it *have a measurable, quantifiable effect on the body?*” or “Does it work *at reducing symptoms of pre-eclampsia such as elevated blood pressure?*” The answer to both of these is yes, and it is precisely this reframing that continues to drive research for both Toker and Kömürçü. Both acknowledge the limitations of the studies and their own orientations towards it: that they aren’t musicians themselves, that they feel they cannot account for differences between *makam-s*’ efficacies in the studies, and, as Kömürçü bluntly tells me, “of course headphones cannot be as effective as live music.” Comparing recorded versus live music—the biggest limitation of the study, in my view—is consistently met with such answers, but not any interest. That is, Toker and Kömürçü, and Adnan Çoban in Chapter 3, have clear understandings that this is a limitation, but for the purposes of their research, it does need to be addressed.

Between “importance” and “impact,” however, is the friction that I will focus on for the remainder of this chapter. They express *impact* of recorded versus live music in their repeated short answers to me throughout interviews: “of course it is different,” “of course live music is more effective.” Of course. But this impact never reaches the degree of *importance*. The scale is balanced by belief opposite impact. That is belief in the practice, informed to some extent by data but largely based on personal convictions, carries enough weight to continue in the same way. And this is present in Kömürçü’s other work as well: her study with Candan Ersanlı Kaya, for example, music was used as a co-variable with education/information for patients pregnant for the first time and undergoing induction. That is, in addition to music therapy, the study group also received an additional 10–15-minute discussion with a nurse or researcher “on the importance of labour, induction, why induction was applied, effects of induction, labour pain, methods of dealing with

pain, and effects of music on the process of labour...”²⁴⁴ It is difficult to surmise from the study design and data with any certainty that music plays a role here, given co-variables. And patients had no choice in the *makam* they would listen to via headphones. In addition to the impact of recorded versus live music, unpredictable contextual variables would surely affect efficacy, such as hearing difficulty or loss, distaste for the genre, among other possibilities. We do not have such information.

These details—how music is reproduced and consumed, the context in which we listen, our conditions of health—are tantamount to an understanding of music therapy as a material practice. Being attentive to the material conditions of listening broadly, and music therapy via sound reproduction specifically, elucidates the practice in the terms that we experience it. That is, without necessitating the conversion of subjective or qualitative experience to quantitative or calculative evaluation. While my interlocutors work within the dominant paradigm of their fields and the constitutive tools, thinking musical healing from a materialist perspective offers an alternative epistemology that more closely approaches the knowledge and experience of the practice that researchers are trying to recreate. In what follows, then, I think through this study and others within the framework of *soundbody*, offering a sonic materialist analysis with a focus on a situated onto-epistemology rather than a generalizable ontology. Considering the study design and its music technologies as biotechnics, I show that a materialist approach to sound reproduction technology and listening draws out critical inconsistencies that may hinder this project and offer an alternative understanding of the practice of Turkish classical music therapy.

²⁴⁴ Candan Ersanlı Kaya and Nuran Kömürcü, “Effect of Education and Musical Therapy Given During Labour on the Process of Birth in Induced Primipara Pregnant Women,” *International Journal of Medical Science and Clinical Investigations* 4, no 3 (2017), 2799.

5.4 Historical Knowledge and the Biotechnics of Listening

A brief story: in 1484, in the time of Ottoman Sultan Beyazıt II, a hospital complex was constructed on the shores of the Tunca River in Adrianople, contemporary Edirne, a few decades after the Ottoman capital moved to the newly seized Constantinople. The *darüşşifa* (lit., “house of healing”) was constructed by Mimar Hayreddin²⁴⁵ with the hospital’s acoustics and intended use of music therapy in mind.²⁴⁶ This hospital became a model for those later constructed in the 18th and (early) 19th centuries, including the dome beneath which music therapy historically takes place.



Figure 6: *Darüşşifa* in Edirne (Photograph by author)

During my fieldwork between 2018-2020 in Istanbul, everyone I met asked if I traveled to Edirne. Friends with little knowledge of Turkish classical music, let alone its therapeutic uses,

²⁴⁵ “Mimar” translates to architect, but also functions as an honorific for the great architects of the time. The most notable example is Mimar Sinan, architect for Süleyman the Magnificent, Selim II, and Murad III, who designed Istanbul’s Süleymaniye Camii (the Blue Mosque) and Edirne’s Selimiye Camii.

²⁴⁶ Adnan Çoban, *Müzikterapi: Cana Şifa Ruha Gıda* (Istanbul: Timaş Yayınları, 2005).

knew nonetheless from high school and college history courses of the importance of the Edirne hospital. During interviews, almost every interlocutor asked if I visited, and recounted the story of Evliya Çelebi, the 17th century travel writer who recorded his treks across the furthest reaches of the empire, from the Balkans to North Africa. His account of Edirne is the most heavily cited in the relatively scarce literature on music therapy in the Ottoman era. Citing him, Azize had the following to say:

And we know from Edirne that, three times in the week, the musicians were coming and playing there. And there was always this spring, this water spring--that's the reason why we have our water sound in our therapy. And today with the modern chronomedicine, we know that... sounds, when they enter into the body, they stay for seventy-two hours, around. They know by research. That means, when they come three times in the week in ancient times, it's nearly around that. So, they came, they played, the sounds were working, and when the seventy hours were gone, they came the next time. So, there was already a knowledge about it.²⁴⁷

As these stories are told and retold regardless of the questions I ask, my interlocutors emphasize how deeply rooted this knowledge is in Turkic society. There is nothing new for them to discover, because they are simply practicing what has been done for hundreds or thousands of years, depending on who you ask. *Among the Ottomans, and the Seljuks, and myriad Turkic civilizations prior, there was an explicit understanding of how sound and the body interact, of how to effect desirable change in the body through musical performance, of how perception and the senses were sites for intervention.* This knowledge of bodies and sound, as the story goes, has been passed down through the musical heritage of Turkic society, combining Arab musical forms and Arabic translations of Greek texts. The Seljuks, and later Ottomans, institutionalized and further codified the practice under their most current systems of musical and medical practice (*makam*, for instance), and my interlocutors today see their practice as yet another iteration of this teleology.

²⁴⁷ Güvenç, interview, 2020.

Conducting this research within the biomedical and university institutions, many of my interlocutors simply translate their belief into quantitative terms. As above, their insistence in the efficacy of Turkish classical music therapy is absolute and does not require validation via experimentation. Instead, they practice interrelated modes of engagement. The first mode, exemplified by those as Toker, Kömürcü, and Kaya here, takes belief and studies specific, contextualized applications that can be backed by quantitative evidence. The other, with a litany of names she mentions across Europe and Turkey, suspends the need for formalized research structures altogether, with physicians inviting TÜMATA to perform in their intensive care wards, in the rooms of coma patients, and so on.

Both modes of engagement draw on the same historical lineage and express it in different terms. The former translates it, seeking to provide evidence that may compel others. The latter brings in practitioners on their own terms, providing space for doctors and patients to marvel at the effects. Little is to be said of crossover beyond citation, insofar as amateur practitioners and TÜMATA are often unaware that physicians cite their work and conduct formalized research on it, but they were pleased all the same. The institutional research as a translation of music therapy practice in quantitative terms is precisely that: a translation. While the dominant paradigm of scientism certainly touts “empirical” (read: quantitative) research as the only true form of knowledge production, and our contemporary understandings of the body through the language of biology guide the majority of medical practice on a global scale through imperialism, biology and biomedicine are often simply translations existing knowledge systems into a lexicon weaponized by biopolitical regimes. This violence is further perpetuated through orientalist and exoticist tropes, from the caricature of Africa serving as the site of primitive naturalist listening, to the labeling of *Turkish classical music therapy* as “oriental” or “ethnic” music by TÜMATA. The

tables, charts, and statistics of Toker, Kömürçü, and Kaya's work certainly communicates *something* to those conversant in such calculative logics. But it does not necessarily more fully represent the qualitative or subjective experience of the patient, whose own depiction occurs in qualitative terms.

In discussing the historical practice of music therapy, as well as its contemporary iterations, we can usefully reframe the constitutive technologies, from wood-carved instruments to electronics, as biotechnics. Thinking "bio" as the body in its multiple linguistic and discursive representations, and technics as situated technologies and orientations of the body, we can reorient ourselves towards listening, mediation, and sound reproduction technology as learned, situated material practices that cannot be reduced to philosophical or biological naturalism. We learn how to hear within sociopolitical frameworks, and in doing so learn what we do *by* hearing. Hearing is not a naturalized process but a process of acculturation in particular networks of sensing that includes affect and emotion (see Chapter 3). Biotechnics, as they encapsulate tools of listening and the mediation of sound, resist ontological distinctions that ultimately work only to naturalize listening.

Listening as a learned practice has been demonstrated in both qualitative and quantitative terms. As seen in Chapter 3, studies on music cognition and perception in *makam* music show that listening is a process of both enculturation and formalized education, to varying degrees. Mungan et al demonstrated that *makam*-trained musicians segmented a microtonal musical example with greater accuracy than Turkish non-musicians and Europeans, with no significant difference between the two. That is, trained Turkish classical musicians *listen differently* than those not trained in the genre. Listening in this way includes top-down knowledge of musical structure, certainly, but the enculturation into a listening practice includes extra-musical knowledge as well.

This phenomenon has been explained by Denise Gill, who coins the term *biaurality* to denote “the process of shifting and shaping one’s ears to different axes, geographies, and idioms of listening.”²⁴⁸ Gill contrasts this to the common ethnomusicological notion of “bi-musicality,” coined by Mantle Hood to refer to musical fluency in another tradition, one which may allow ethnomusicologists to learn a musical tradition “from the inside,” but also involves the translation or representation of such musics in the language of Western epistemology. Learning to be bi-aural went further than learning a musical tradition for Gill, it meant the process of “hearing the homologies—material and immaterial analogies or intersections of aesthetics, beliefs, practices, and artifacts—between subjectivity and music making.”²⁴⁹

Bi-aurality ultimately denaturalizes listening, a move critical to consideration of the technologies and orientations that shape it. Mungan et al, along with those studies by Toker, Kömürçü, and Kaya offer us a preliminary list of those technologies: computer hardware and software, headphones, MIDI recordings that replicate instrument timbre through digital manipulation, and live recordings which compress sound through a process of perceptual coding. The instrument Gill spends years studying is likewise a technology. Importantly, this categorization extends beyond the objects we hold, play, or listen through. It includes the process of education and enculturation within a particular music/listening culture. It includes the homologies of Gill’s biaurality. And in historical perspective, it includes genealogy of sound-body knowledge in Turkic societies that constructs the tale of Turkish music therapy. Healing in any context can be defined by an orientation to the body, by a situated understanding of what

²⁴⁸ Gill, *Melancholic Modalities*, 114.

²⁴⁹ Gill, 115.

constitutes the body, and by a learned tradition of how the body *is*. Each of these comprises the biotechnics of listening.

The senses, more broadly, remain central to the practice of healing in a variety of contexts as the mode of extrapolating information from the body. Gavin Steingo and Jairo Moreno note that in South Africa and Colombia, respectively, fetal-human subjectivity is formed through the aural relationship of the midwife listening: “Life, in this relational sense, is what happens between her ear and the child’s heartbeat.”²⁵⁰ And while the two briefly address European philosophical and psychoanalytical theorizations of the fetus’s sonic world and question whether the fetus can hear or experience sound “co-vibrationally,” there is little to be said of the material ramifications of sonic impact on the pregnant person and fetus—the material conditions are, to some extent, abstracted into the world of ideas.²⁵¹ While their interlocutors’ communities systems of belief and practice are explicitly material in their consideration of fetal aurality and its consequences, more remains to be said of how local praxis shapes discursive formations of the sound-body relationship.

Homing in on this relationship, *soundbody* takes a Baradian approach to the intra-activity of listening, one which denaturalizes aurality and situates it within an entanglement of musical and sonic biotechnics. Music studies have often taken up Latour and actor network theory as the primary mode of discussing agency and mediation in assemblages of listening subjects and objects. This has been helpful for some, such as Eliot Bates’ work on the social life of musical instruments, but others take exception to ANT’s approach to relationality as a flat ontology, highlighting the

²⁵⁰ Jairo Moreno, “Antenatal Aurality in Pacific Afro-Colombian Midwifery,” in *Remapping Sound Studies*, ed. Gavin Steingo and Jim Sykes (Durham: Duke University Press, 2019), 109.

²⁵¹ Jairo Moreno and Gavin Steingo, “The Alluring Objecthood of the Heartbeat,” in *Sound Objects*, ed. James A. Steintrager and Rey Chow (Durham: Duke University Press, 2018), 167-184.

ways that relationality does not preclude resistance to those relations. As shown in Chapter 4, *soundbody* is functions analytically to allow the sound-body relationship to exist multidimensionally rather than as a strictly monodirectional listening practice. When we include the biotechnics of listening as fundamental to the denaturalized practice, the body can no longer simply be a passive vessel upon which sound acts. Instead, it becomes an active agent in the intra-action of listening, one which negotiates subjectivity on both material and metaphysical grounds through material engagement with the biotechnics of listening.

First-person historical accounts of music therapy are quite limited in the Ottoman archive and beyond the scope of this project. But the retelling of stories, speculative they may be, is a key character in the present, and has the important discursive function of narrating into existence an historical present congruous with these teleologies of health (see Chapter 2). As I have noted, these narrations of historical practice can likewise be framed as biotechnics of listening insofar as they are culturally situated orientations towards the sound-body relationship. Georgina Borne and Andrew Barry frame these in theories of mediation, noting that mediation occurs across varying registers of temporality and sensation. They write, “[a]ddressing music in these terms has come to involve analyzing which of these multiple potential mediations is present, and how, in any musical experience or musical culture, as well as what may be absent...and how they constellate and produce effects through their multiplicity, their simultaneity, and their interrelations—without any assumption of organic totality.”²⁵²

Retelling narratives of historical practice is itself a form of mediation foundational to the cultivation of Turkish classical music therapy listening practices. As an orientation, this mediation

²⁵² Georgina Borne and Andrew Barry, “Introduction: Music, Mediation Theories and Actor-Network Theory,” *Contemporary Music Review* 37, nos. 5-6 (2018), 449.

is also material in its redefining of relationality between listening subjects and objects. In contemporary practice, we see this orientation-mediation in TÛMATA's work in hospital rooms and weeks-long musical-spiritual retreats. When musicians file into a coma patient's room and organize themselves on the floor around the bed, as Azize tells me, the tangible biotechnics— instruments, people, beeping monitors—are likewise framed within intangible yet equally material orientations towards the sound-body relationship. And when, as was recounted to me with incredible excitement and tension, that coma patient wakes up, they find themselves in a hospital room subjected to multiple, intersecting forms of healing practice—one which sustained their body during the coma, and another which purports to have materially saturated the mindbody and vibrationally awakened them.

Live performance in the room of a coma patient is materially quite different from the research conducted by Toker, K m rc , and Kaya, who primarily use mp3s and headphones due to the constraints of hospital policies and the logistics of organizing live music for dozens of individual study subjects. Noted above, the mp3 is a compressed audio file that uses “perceptual coding” to reduce file size by eliminating aspects of recording deemed inaudible through a digital rendering of the human ear. As in Mungan et al, “perceptual” here most nearly means “naturalized”: a definition hearing based on the biophysiological understanding of the non-deaf ear as the primary (sole) hearing apparatus. In addition to the ableism of locating hearing within the ear alone, such perceptual coding likewise rules out the skin as our largest sensory organ. Our experiences of live music performance, particularly those with heavy use of amplifiers, is certainly not bound to the ear—particularly when volume exceeds the ear's ability and potentially causes damage. The mp3 is a reduction of sonic material experience based on a model of the hearing ear,

and as audiophiles have long critiqued, it cannot capture the sound quality of other recording technologies, and especially not a live performance.

Displacing the body in favor of the ear, the use of headphones and mp3s is a monumental shift in the materiality of listening and threatens the efficacy of a music therapy whose origin story relies so heavily on sound entering the body through vibration. The skin and our internal surfaces can (and do) sense vibration, but our cognitive perception of sound is based entirely on the transmutation of sound into electrical signals. Locating listening as a process of the ear—a constituent of the naturalization of listening—is a form of extreme mediation in its dissection of the body and limitation on sound-body intra-action. Headphones, to vary degrees, also may block out sound from other sources, as Korhan tells me, *but only in the ear*. That is, study patients may “hear” only the Turkish classical music being played on their mp3 player, but at the level of the skin, they are hearing everything else *except* the music in their headphones.

As discussed in Chapter 4 and above, this raises important questions about how sound affects both mother and fetus as symbiotic intra-active beings. Steingo and Moreno draw heavily on Julia Kristeva and Didier Anzieu in thinking through the sonic work of the fetus, who is enveloped in fluid, flesh, and the sounds of the mother’s body, but also in her voice. Toker echoed this to me, saying that “in existing studies, it is said that the most effective sound for the baby is live music and the voices of the mother and father.” She continued later that “of course if one listens to live sounds, it would be more effective. Because we used headphones here, it appears that we affected the baby through the mother.” This is to say that any effects of music therapy on the fetus had to occur through the mother’s body: sound enters her ears, is converted to electrical signals by stereocilia and interpreted by the brain, in turn creating an ill-defined effect on the autonomous and central nervous systems that has reaped a quantifiable benefit for the fetus. The

implication also seems to be that live music would have been more effective for the fetus *due to its direct vibrational impact through the mediator of the skin*.

Taken as a whole, the type of music therapy being practiced by Toker, Kömürçü, and Kaya translates and transmutes the historical practice they cite through the logics of biomedicine and technoscience and misses the capacious possibilities of the biotechnics of listening. The electronic technologies used here, which ultimately diminish the intra-active capacity of the soundbody, can be reappropriated to broaden the scope of healing through soundbody. Of course, we must recognize the logistic and economic limitations of such studies, which would require significant funding to employ musicians as full-time music therapy performers, as well as the social and political conditions that might make such employment undesirable for a professional. Recordings do, after all, offer the benefit and convenience replicability. Musical performances can be replayed ad nauseum as the patient desires, as Toker mentions with her own use of mp3 recordings during her labor.

Recordings also allow privacy from observation and, according to Azize, greater freedom to abandon one's inhibitions about the practice. "And we know from quantum physics," she tells me, "in the moment where there is someone who observes, things are changing, you know? So, you have—I was also thinking about it so when you have a CD no one is observing you. So, the effect can be very direct." She later continues, saying

So, if these people who do it with CD, maybe they would be...they would not feel so observed, and it gives sometimes more lightness. But, and also the effect what we heard from people who are really working regularly with the CDs, that they feel better. That they feel better, but there is no research on it, of course. But, what helps, helps. And if you have not the possibility of live music, then the CD is the best you can do, I think.²⁵³

²⁵³ Güvenç, interview, 2020.

With far less compression than mp3s, CDs offer an intermediary between live performance and mp3s (with the condition of a quality sound system). While there is risk that soundbody falls down the same slippery slope towards naturalism in thinking the body “an organic whole” or otherwise unified singularity, I will emphasize here that attentiveness to the ear and skin together must be likewise attentive to their stark differences in engagement with sound. As mediators, the skin and ear function quite differently as interconnected processes of differential modes of sonic transmutation. Each engenders a specific sound-body intra-action that cannot be reduced to naturalized, homogenous “listening” but contributes to multi-sensory soundbody intra-actions. Each mode engages various affective registers (which may be another conversation entirely), and forms an idiosyncratic, if incomplete, constituent of listening.

The biotechnics of listening are thus a heterogenous set of technologies, affects, and orientations that mediate the soundbody. They comprise the sound reproduction technology that shifts the materiality of listening between live and recorded performance, as well as the epistemological orientations that frame how each practice cultivates the soundbody as an iterative material unfolding that we label as “listening.” Such an analytical method decenters ontology from studies on listening in favor of situated knowledge systems contingent upon emergence. That is, music therapy is an ongoing and shifting engagement of soundbody that coalesces only around its material potential. The use of particular biotechnics of listening are co-constitutive of the orientations and epistemologies dictating their use in the first place and are productive sites for the reconsideration of how we conceptualize and employ music therapy, and to what ends.

Beyond new materialism’s propensity for using sound and vibration as “an idealized ontological model that translates the mathematical relationships behind neoliberal market logics and biopolitical governmentality into non-quantitative terms,” as Robin James argues, there is

great utility and importance in attending the matter of things without making claims to the vibratory potential for political equality.²⁵⁴ The material register is certainly not a site of liberation from the supposed chains of representation and language, as some may argue, but it does offer insight into the conditions where biopolitics play out: on the body. Material conditions of embodiment are inextricable from the socio-political structures that give them names, and they are likewise bound by the contextual histories from which they arise.

5.5 Materiality and Time

My interlocutors' orientation towards the past and the relationship it articulates with sound and body drive their work in the biomedical and academic research spheres. Needing to work in quantitative terms—and a sincere belief that these terms can be reconciled with music therapy—Toker, Kömürcü, and Kaya attempt to demonstrate a more capacious model of research that can bring music and sound from the fringes and integrate it as a key mode of care in obstetrics. Friction between the quantitative scientism of their work and the qualitative, subjective mode musical experience *is a problem of materiality*. The approach I have demonstrated here is rooted in an epistemology that addresses sound and body in the same terms. In conducting such an analysis, the constitutive logics of interlocutors' research can be reduced to phenomenology not as an abstraction from supposed empiricism but as a way of getting *more specific* about experience via the senses as the primary mode in inquiry in medicine, even if it is hidden behind numbers.

²⁵⁴ Robin James, *The Sonic Episteme: Acoustic Resonance, Neoliberalism, and Biopolitics* (Durham: Duke University Press, 2019), 89.

Biotechnics make a parallel move as they situate our soundbody within constellations of relationality. Acknowledging our bodily experience of listening as dynamic and intra-active rather than a passive mode of being manipulated brings into relief how our relations with the biotechnics of listening dramatically shape how we feel and who we are. While such technologies cannot replicate exactly the experience of live performance—itsself mediated by the acoustic design of a *darüşşifa*, for example—they do offer varied modes of engagement that, as everything else, can serve more than a singular prescriptive purpose. A relational soundbody highlights the agency of flesh, electronics, and sound within the context of “healing.” This agency is perhaps the most important part of this project, particularly in light of biomedicine’s requisite project of stripping agency from the patient and rendering the body incomprehensible to anyone but the physician.

Much remains to be said here, and this work is necessarily limited by lack of ethnographic access to patients undergoing music therapy interventions in particular. But the tight network of researchers and practitioners discussed here are making a profound impact, one which I hope to bring to a wider audience. While the academic language here is important in that it denotes highly specific meaning, it only begins to reflect the way my interlocutors cultivate knowledge, which relies so heavily on genealogy and a material connection to the universe. As noted in the Chapter 2, historical genealogy has at times been a tool of the new Turkish nation-state to construct a racial hierarchy and denote particular political alignments with Whiteness and European modernity. Genealogy has also functioned at times to tow the Ottoman bureaucratic worldview into the 20th century through the incredible documentary sources available in the archive.

A genealogy of Turkish classical music therapy certainly must carry some baggage of empire and colonialism. But as it is practiced in hospital rooms or in public healing events hosted by TÜMATA, other parts of this genealogy manifest within sound and on the surfaces of the body:

those experiences of magic or spiritual realization or emotional clarity that propel this work. These are the material enactments of such a genealogy as they occur within our bodies and within sound.

6.0 Conclusion

Across the four main chapters of this project, we hear from several important researchers by name, who offered me their time and insight into their work and that of others, but there are hundreds more people present within this text. These are the hundreds of patients in hospitals beds, in labor or in pain, abstracted away through the process of quantifying healing, a process dictated by a particular epistemological orientation towards the body. Biomedicine requires this abstraction, this reduction to numbers and tables and charts and statistics in order to create a “universalized” lens of the body. Making a critique of this model implicates myself and highlights the most important limitation of this research project: the absence of listening patients.

Such access is certainly possible under particular conditions, as shown by medical anthropologists such as Aslihan Sanal in her ethnography of organ transplantation in Turkey.²⁵⁵ But the studies I examine occur within an additional layer of logistical restrictions, including the total depersonalization of research subjects from the primary research, the number of patients admitted to a study based on inclusion criteria and a sample size that will demonstrate proper statistical significance of findings, and the temporal bounds of a limited project. One future for this project is the hopeful participation in one such study—to be in the right place at the right time, for the right length of time—and speak to participants on their terms, to hear about their experience of music therapy in their own words, and to share them without translating the language or transmuting the medium into a biostatistical model.

²⁵⁵ Aslihan Sanal, *New Organs Within Us: Transplants and the Moral Economy* (Durham: Duke University Press, 2011).

Limitations notwithstanding, this dissertation has shown that contemporary biomedical revivals of Ottoman music therapy practice are not really “revivals” at all, but continuations of practice in a vastly different world. Without romanticizing the Ottoman past or the power of music, Turkish classical music therapy *is* a site of contact for intersecting cultural and intellectual histories. My interlocutors work within and between these histories, and attempt to negotiate significant epistemological difference and in turn engage in a different kind of reparation, one which reaches across boundaries and sutures parallel genealogies together. In doing so, they demonstrate to ethnomusicologists a model too for bringing together music and biomedicine.

6.1 Contact, Genealogy, and Repair

Genealogy, in this dissertation, appears as a method for order the past and a discursive tool for animating the present. We have seen genealogy invoked as the cover for far more insidious sociopolitical projects and invoked out of a deep reverence and humility before the universe. Criticisms from historians have shown how genealogy as a mode of identifying origins and tracing development quickly become teleological projects that recenter existing structures of neo-colonial power. In their place, they offer notions of contact and locality as modes for thinking different about space and time, and as a way of displacing origins from its primacy within certain modes of historiographical practice. What would these mean for our music studies disciplines?

As the ethno/musicologies and music theory continue to reckon with white supremacy, anti-black racism, colonialism, and other ideological constituents of modernity, the notions of contact and locality (and circulation, we might add) have stood out as appealing frameworks for rethinking how we study musicking in a neo/colonial world. The recent volume *Acoustemologies*

in Contact: Sounds Subjects and Modes of Listening in Early Modernity, edited by Emily Wilbourne and Suzanne Cusick, is the latest iteration of such projects seeking to unsettle the colonial paradigms that have characterized Western academic inquiry broadly. This volume in particular “recognizes the world of early modernity as a set of contact zones” and approaches the sounds of intercultural contact from the other side of the colonial narrative. For ethnomusicologists—a great deal of whom work in post-colonial contexts—the question of decolonization and the ethics of conducting field work has yet to be answered. But ethnomusicologists have nonetheless devoted decades to working towards an equitable relationship with interlocutors and field sites, from the repatriation of cultural artifacts and recordings to collaborate work that decenters the researcher’s voice. None of these methods are without issues, but they remain at the core of the disciplines’ heated debates.

But what does it mean for us to depart from genealogies of music? Is this a necessary or helpful approach to repairing the serious harm inflicted on scholars and communities alike? Canonicity is the most obvious manifestation of preoccupation with genealogy and has been the target of critique and site of work for at least two generations of scholars. And for US-based ethnomusicologists in particular, this canon is grounded in the area studies funding structures tied to the US government’s diplomatic and military interests. When the “golden standard” of ethnomusicological research denotes difference and distance from “home,” as Tes Slominski argues, how can we divest from the structures that replicate and reward precisely these models of ethnomusicological inquiry?²⁵⁶

²⁵⁶ Tes Slominski, “Fielding the Field: Belonging, Disciplinarily, and Queer Scholarly Lives,” in *Queering the Field: Sounding Out Ethnomusicology*, ed. Gregory Bar and William Cheng. (New York: Oxford University Press, 2019), 217-232.

Medical ethnomusicology may be particularly well-situated to address these concerns. To begin, recent discussions amongst scholars working in this sub-field have asked, “what does it mean for our sub-discipline to be named “medical?” What work does that do?” Such conversation inspired recent panels at the Society for Ethnomusicology and provoked discussion of dedicated conferences and publications in which we can work through the baggage of the word “medicine.” But as shown in this dissertation, “medicine” as related to biomedicine doesn’t need to stand in opposition to “traditional” or similarly identified healing practices, we simply allow it to. If we approach musico-medical research as juxtaposed orientations towards the body through sound, the congruent and contradictory valences of “traditional” and “modern” may come to light in unexpected ways. While the ongoing colonial project *is* violent and repressive, an analysis of this slant does not do the reparative work of understanding postcolonial experiences as anything but suppressed. And juxtaposition does not mean the erasure of these historical facts, but rather “riding the thematic waves,” as Nappi writes, or find those contact points, the sites of negotiation and localization that mark medicine as a local practice.

In this dissertation, I dealt primarily with biomedical/university institutions, and in particular, with two branches of medical practice that hold importance in the history of medicine in Turkey. Obstetric care was one of the more advanced fields of Ottoman medical practice, and from the late 19th to mid 20th century was dominated by Besim Ömer, considered the most important obstetrician of the Early Republic Period. Psychology, and especially psychiatry as a medical specialization, was held in low esteem relative to other specializations and did not have its own department until 1908. And within these specializations, I specifically addressed the revival of “traditional” practices in this “modernized” space. The juxtaposition cannot be more

visible musical medicine from bygone centuries, stored as an mp3 and consumed through headphones while machines monitor physiological markers. What are we to make of this?

While I critique in each chapter significant parts of this practice, my intention is not to set up musical healing as antithetical to biomedicine. Rather, I demonstrate that such a juxtaposition is often exercised by the researchers as an act of subsumption. That is, music is asked to meet the horizon of modern biomedicine, to be expressed in the terms and through the tools of biomedicine itself. While the practice of Ottoman music therapy makes offerings to biomedicine, those offerings are contingent on biomedicine's willingness to listen. This dissertation then highlighted where listening is and is not occurring across these two variable practices. Listening here is a type of contact between sound and body; it is the enactment of genealogies of both health and political ideology; and it is reparative in its orientation towards the body and health.

Contact and locality will remain at the fore of ethno/musicological inquiry, I suspect, particularly as global conditions such as viral pandemics and climate change bring into relief the ethical quandaries of frequently international travel, ongoing settler colonialism enacted through biopolitics, and other such crises under which we have long been operating and are increasingly rendered audible in the disciplines. Coupled with the (often self-imposed) austerity politics crippling academic institutions and rampant anti-intellectualism that threatens the work we do, it seems inevitable that we ask, where are we? What is happening here, now? Who is connected and who is left behind? How can we work through contact as the primary and *fundamental* condition of conducting musical research? I cannot claim to have presented here any idealized or perfectly realized research methodology that answers these questions but have found these questions *within* the process of doing this project in this particular timeplace.

6.2 (No Need For) Research Futures

Time and again, I have come back to the opening epigraph this dissertation’s introduction, which comes from my interview with Azize Güvenç. On a warm day in late February, we sat in a small *çay bahçesi* [tea garden] in Yalova, an hour-long ferry ride across the Marmara Sea from Istanbul and she described for me “the big concert in the universe.” We are all enveloped in cosmic sound, we can feel and hear the sounds of each planet—the harmony of the spheres. She told me, “...this music doesn’t need [to be] researched because it is working, and you feel it working, when you are feeling something, you don’t need [to] research it.”²⁵⁷ And this question stays with me. While my interview with Azize came only weeks before the abrupt end of the fieldwork, it reminds me of the frequent questions I received much earlier as a visible and audible foreigner: “What are you doing in Turkey?” “What kind of research are you doing? Why?” Giving a satisfactory answer to the “why” is perhaps the most important part of academic inquiry—what are the stakes? And if I take Azize’s account to heart, if I listen to the stories that she tells me, then “why?” becomes an immensely more difficult question to answer. Why do I do this research if it already works?

Whether or not “it works” is not the most interesting or productive question, in my view, despite it being the question I’ve received most often in both the US and Turkey. And as shown in the preceding chapters, it is not the guiding question of the project. “Does it work?” is reframed in this dissertation as “what would it mean for it to work, and how does ‘work’ operate as a signifier of particular epistemological orientation?” Understood in this way, I continue to reflect on Azize’s statement. What is the relationship between “work” and “research” when the former stands in for experiential knowledge and the latter for empirical inquiry? Translating this question into different

²⁵⁷ Güvenç, interview, 2020.

terms shows that this dissertation is not the research Azize references, but that her question has been in part my question too as I study the research she *is* referencing. That is, the research in her question is the collection of studies analyzed throughout this project.

By thinking of this project and its outcomes as one about the relationality between “research” and work,” or between “empirical inquiry” and “experiential knowledge,” I find that it opens vast research futures for both this project specifically, and for music studies more broadly. As in Chapter 4, I take the work of ethno/musicology very seriously to be empirical, rejecting the false equivalence between empiricism and quantification that serves only to advance neoliberal ideology and discredit humanistic research. By locating ourselves between empiricism and experience and taking music as our object and language, the points of contact and friction become continually more distinct. Studies on music and medicine offer one path forward, through their tangible juxtaposition of experience and empiricism, albeit quantified. But the incalculable others too offer rich research futures that invite us not only to turn an ear, but also to reach out, touch, and feel.

Appendix A: “A Song in an African Tribe”



Appendix Figure 1: Slide 1

“Do you have a song, too?”



Appendix Figure 2: Slide 2

“In an African tribe, pregnant women gather their friends and go to the birth...”



**doğacak çocuğun şarkısını duyana dek
meditasyon yapıp dua ederler.**

Appendix Figure 3: Slide 3

“...and they meditate and pray until they hear the song of the newborn child.”



Appendix Figure 4: Slide 4

“According to this tribe, every soul has its own essence, its own sonic vibrations.”

Kadınlar bu seslere kulak verdiklerinde, hep birlikte yüksek sesle seslendirirler.



Appendix Figure 5: Slide 5

“When women lend an ear to these sounds, they always vocalize loudly together.”

Sonra da kabileye dönüp şarkıyı herkese öğretirler .



Appendix Figure 6: Slide 6

“Afterwards, they return to the tribe and teach everyone the song.”



**Çocuk
doğduğunda,
tüm kabile
toplansarak
ona şarkısını
söyler.**

Appendix Figure 7: Slide 7

“When the child is born, the entire tribe comes together and sings the song to them.”



Appendix Figure 8: Slide 8

““During important periods later in the child’s life, the same song is recited. On their death bed, too, the same song is sung.”

Bir insan kabul edilmez bir cürüm işlediğinde, kabile toplanır ve ona şarkısını söyler. Çünkü anti sosyal davranışlar ceza ile düzeltilemez; sevgiyle ve kimliğin hatırlanmasıyla çözülebilir.



Appendix Figure 9: Slide 9

“When a person commits a crime, the tribe comes together and sings them their song. Because anti-social behaviors cannot be corrected with punishment. They can be sorted out with love and being reminded of one’s identity.”

Kendi şarkını duyduğun zaman, bir başkasına zarar verecek davranışlarda bulunma isteğine ihtiyaç kalmaz.



Appendix Figure 10: Slide 10

“When hearing one’s own song, there remains no desire to behave in a way that does harm to another.”



Aslında hepimizin içinde bir şarkı olduğunu biliriz ve sevdiklerimizin zor zamanlarımızda bunu farketmelerini ve bize söylemeye yardımcı olmalarını arzu ederiz.

Appendix Figure 11: Slide 11

“Actually, we know that each of us has a song within us, and during difficult times with our loved ones, we wish that they recognize and sing that song to help us.”

Gerçek dost, bizim şarkımızı duyan ve ihtiyacımız olduğunda bize tekrarlayandır...



Appendix Figure 12: Slide 12

“True friends/companions are those who hear our songs and repeat them to us when we need them...”



Appendix Figure 13: Slide 13

“With the wish for one who remembers all of your songs...”

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