

THE SOUND OF BASS CULTURE(S): HEAVINESS, BLACKNESS, AND
UBIQUITOUS BASS

by

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THESIS ABSTRACT

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Bass culture describes the shared affinity for excessive low frequency aesthetics. During the 2000s and 2010s, discussion of the term first emerged within the context of bass-centric Afrodiasporic popular music genres such as hip-hop, EDM, dancehall, and reggaeton. In this thesis, I theorize sonic elements of bass prominence through the concept of *heaviness*—a multidimensional timbral definition that extends beyond mere prescriptions of lowness and loudness. Historicizing bass centrality, I discuss Jamaican music during the 1950s and '60s where sound system practices contributed to the codification of bass as a sign of Blackness. Looking to the future, I present the concept of *ubiquitous bass*—the omnipresence of low-end frequencies now available in the latest developments of portable listening devices. Though a case study of Beats headphones, I argue that increased accessibility of heavy bass in virtual experiences marks a significant shift from established accounts of low-end theory.

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1. INTRODUCTION

On the Dancehall scene the term “massive” is used for the crowd and their intensive, immersive, visceral experience of *sonic dominance*. These powerful low frequencies resonate with embodied movement and furthermore bleed into the cultural spectrum to become a carrier frequency, as it were, for Africa’s musical gifts to its diaspora.

– Julian Henriques¹

It has become common in recent years to construe a broad range of sound system enabled popular music practices as a singular bass culture. This is the timbral world the subwoofer has made, a virtual archipelago of thumping musics situated along the old trade routes of the African diaspora.

– Robert Fink²

[B]ass is a slippery thing to study. It quickly leads far beyond dancefloors, music and ears. It turns questions of musical sound to matters of extramusical vibration and extra-cochlear perception. The former opens onto the acoustics of bodies and buildings, inadvertent encounters with ambient waves, the unheard vibrations of infrasound and still more liminal events that can only be called sound-like.

– Paul Jasen³

You and your friends are headed to a new club making a buzz on social media.

Approaching the venue, the low thud of a bass drum can be heard more than a block away. Your anticipation builds as the party’s cacophonous soundscape slowly grows nearer. Upon entering the door, your ears are smacked by the house system. Its deep bass resonance penetrates your consciousness and overwhelms your senses. You immediately

¹ Julian Henriques, *Sonic Bodies: Reggae Sound Systems, Performance Techniques, and Ways of Knowing* (New York: Continuum, 2011), 12.

² Robert Fink, “Below 100 Hz: Toward a Musicology of Bass Culture,” in *The Relentless Pursuit of Tone: Timbre in Popular Music* (New York: Oxford University Press, 2018), 88.

³ Paul C. Jasen, *Low End Theory: Bass, Bodies and the Materiality of Sonic Experience* (New York: Bloomsbury Academic, 2016), 3.

start bouncing to the rhythm, gesturing to your friend to skip the drink line and head straight to the dancefloor. Amongst the stage lights, the DJ can be seen perched in the booth, bopping her head above the frenzied bodies flailing to beat below. As you get closer, the bass migrates from your ears to your chest. The energy of the room magnifies to near seismic levels and in an instance all that matters is this moment. The week's stress is shaken from your bones as you focus intently on the pounding drum and bass that propels you and fellow partiers into rhythmic cohesion.

It is a beautiful spring afternoon at the edge of the university's campus. Students are commuting from class and in and out of the various coffee houses, restaurants, and bars lining the adjacent commercial district. The sound environment is peaceful, only being disturbed by the occasional laughter, bicycle bell, and cautious motorist. Suddenly, the distinct thumping of a trap beat slowly grows nearer, blasting from rattling subwoofers of a modded El Camino with 22-inch rims and a custom paint job. As the car parades down the main drag, students roll their eyes in disapproval, raising voices to compete with the dominating stereo. The two men in the vehicle are fueled by sonic solicitation, wearing smiles as they bob their heads to the rhythm and mouth lyrics to passers-by. One distraught student yells, "turn that crap down!"

Rain trickles down the window as you peer out into the concrete oblivion that surrounds your urban apartment. The weather is less than ideal but thankfully you can stay in—working from home has its perks after all. Reaching for your new headphones, you queue an old favorite: The xx's self-titled debut (2009). Midway through the album, you melt into nostalgic trance, cranking the volume on "Fantasy" as the bass synth enters with its repetitive low frequency tone. This moment rattles your ears and plunges your

mind into deep reflection. Impressed by the bass response of the new cans, the track is replayed many times, becoming your newest musical addiction.

These snapshots are a few examples of bass sounds shaping memorable moments in everyday life. In these instances, low-end frequencies induce powerful physical and emotional responses, inspiring communal release, inciting conflict, and stimulating nostalgic introspection. This is the *low end*. This is *bass culture*.

As expressed by Jasen, theorizing bass can be a “slippery” endeavor as low frequencies induce multisensorial experience.⁴ In other words, we feel bass vibrations through tactile sensations almost as much as we hear them. This is one element of what I term *bass exceptionalism*: sonic and perceptual elements of low-end sound that distinguish bass from other registers. A partial result of these peculiarities, bass vibrations are a salient and culturally relevant topic, intersecting with constructions of race and gender in addition to having a history of integration in “numinous” occasions.⁵ In uncovering these politics of frequency, this thesis balances sonic and musical analysis with cultural and social significance. To do this, *heaviness* is theorized as an integral attribute of low-end prominence, being explored through timbral analysis (chapter 1) and historicized in listening or experiential contexts of Jamaican sound systems (chapter 2) and mobile audio devices (chapter 3).⁶ In doing this work, this thesis claims that the

⁴ Ibid., 3.

⁵ Ibid., 65.

⁶ It is important to note that my conception of the term “heavy” and “heaviness” is unrelated to the work by Cornelia Fales and Harris Berger on heavy distorted guitars in metal genres. As will become clearer in chapter 1, my analysis of heavy bass is indeed quite the opposite of a distorted tone in terms of acoustic details. My choice of the term “heaviness” is consistent with Jamaican and reggae employments where the word is a common colloquial reference to bass sound in addition to musical quality. See Harris M. Berger, *Metal, Rock, and Jazz Perception and the Phenomenology of Musical Experience* (Hanover, N.H.: University Press of New England, 1999); Cornelia Fales, “Short-Circuiting Perceptual Systems: Timbre in

acoustics of bass sound go beyond mere prescriptions of lowness and loudness and that social constructions of bass are intrinsically tied with a racialized notion of Blackness—a historically precedented affiliation codified through musical practice and commercialized in the realm of late capitalism.

As evident by this work’s scope, bass sound is a diverse topic, molded by an array of social/cultural contexts. Although this study illuminates just a few nexuses of bass centrality, bass culture is conceived here as a cumulative reference to numerous dance, club, and electronic performance traditions bound together by the prominence of low frequency sound.⁷ To reflect this, my approach acknowledges the coexistence of plethora cultural environments where bass centrality meets varying ideologies of bass resonance—a contrast from the emerging tendency in scholarship to conceive of a singular, monolithic bass culture.⁸ In an effort to recognize this multiplicity, I will adopt a more expansive conception and stylization moving forward: *bass culture(s)*.

A phenomenon of recent scholarly interest throughout the 2010s and early 2020s, bass culture(s) provides an exciting new frontier that encompasses a variety of methodological and disciplinary approaches with notable works emerging from African American studies, cultural studies, sociology, and (ethno)musicology. Historically, much of the foundational literature on bass culture(s) has centered around Jamaica and reggae music. This is due to the island’s rich history of sound systems where bass centrality

Ambient and Techno Music,” in *Wired for Sound: Engineering and Technologies in Sonic Cultures* (Middletown, Conn.: Wesleyan University Press, 2005).

⁷ Genres of bass culture or *bass music* may be subject to dispute. In my opinion they include but are not limited to R&B, ska, rocksteady, reggae, soul, funk, disco, house, techno, garage, drum ‘n’ bass (jungle), dub, dancehall, breakbeat, grime, EDM, and dubstep.

⁸ In the works of Bradley (2001), Henriques (2011), and Marshall (2006, 2014), Font-Navarette (2015), Riley (2016), Jasen (2016), and Fink (2018) to name a few.

emerged as an important element of social practice as reflected in the title of Lloyd Bradley's book (2001), *Bass Culture*, one of the most detailed accounts of Jamaican popular music to date.⁹

As a term, bass culture(s) holds important value beyond the Caribbean where it has been employed to denote Black music practices in British contexts. This is embodied by the title of poet Linton Kwesi Johnson's influential album, *Bass Culture* (released by Island Records in 1980), which undoubtedly informed Bradley's subsequent adoption.¹⁰ As Jamaican sound system practices spread across the Black Atlantic via postwar migration and emigration, bass culture(s) became an important marker of Black heritage.¹¹ In this context, Mykaell Riley, founding member of the reggae band Steel Pulse, has advocated for increased recognition of Black British musicians who have historically been influential in the development of the globalized popular music industry but often get eclipsed by Jamaican artists as well as white musicians. In Riley's adoption of the term, bass culture(s) is intrinsically connected with Jamaican self-identification and Afrodiasporic connectedness, transcending specific genre classifications:

In my usage the purpose of the term is to recognize the direct and indirect impact of the Jamaican community and Jamaican music on the cultural and social fabric

⁹ It is important to note that Bradley's publication is non-scholarly and thus much of the lore surrounding Jamaican music must be taken with reservations. See Lloyd Bradley, *Bass Culture: When Reggae Was King* (London: Penguin Books, 2001). For an older and more streamlined scholarly approach to Jamaican musicking see Dick Hebdige, *Cut "n" Mix: Culture, Identity and Caribbean Music* (London: Routledge, 2003). In addition, see Steve Barrow and Peter Dalton, *The Rough Guide to Reggae* (London: Rough Guides, 2004) for a more survey-oriented approach to the topic.

¹⁰ This album provides insights into the life of a Black British man living in a racist and cosmopolitan society. Tracks like "Inglan Is A Bitch" root the work squarely within the West Indian Afrodiaspora with use of Patois alongside a heavy dose of cultural commentary. Of course, this commercial endeavor is much in line with Island Record's reggae hits of the previous decade when put through the lens of a late capitalism climate.

¹¹ The concept of a Black Atlantic was first theorized by Paul Gilroy, *The Black Atlantic: Modernity and Double Consciousness* (Cambridge, Mass.: Harvard University Press, 1993).

of multicultural Britain, including a canon of globally influential music. Bass culture encompasses but is not limited to sound systems, ska, roots reggae, dub, pop reggae, jungle, drum and bass, trip-hop, garage, 2 step, grime, dubstep and a host of other genres and sub-genres. The term has evolved to transcend any individual style. Bass culture can be continually refined as a term, considered a catalyst in new sub-genres, and as a creative bridge across successive generations.¹²

For Riley, bass culture(s) provides an important way to reconnect with his Black heritage which he admits was a challenge during his upbringing in England. Self-describing as “one of the lucky ones,” Riley acknowledges the benefits that bass culture(s) can provide to similar individuals seeking to tap into the “accumulated experience” of Black British musicking.¹³

Focused primarily on musical contexts of the Black Atlantic, research in cultural studies and cultural criticism have added significantly to the growing theorization of bass sound. In general, the value of this research is twofold: on one hand it tracks the historical prevalence of low-end sound in different musical contexts and on the other it illuminates details of different social epistemologies of various bass (sub)culture(s). One such example of this research is the work of Julian Henriques (2003, 2011), whose ethnographic research on Jamaican sound systems emphasizes the subjectivity of embodied knowledge through discussion of metaphorical and physical soundwaves. For Henriques, the idea of “sonic bodies” encapsulates the entire apparatus of dancehall music making from DJs and selectors to engineers. In this context, bass sound is a foundational aspect of sound system performance, providing sensory dominance that

¹² Mykaell Riley, “Bass Culture: An Alternative Soundtrack to Britishness,” in *Black Popular Music in Britain Since 1945* (New York: Routledge, 2016), 102.

¹³ *Ibid.*, 114.

overpowers all other inputs and contributes to a distinctively mystical experience. A highlight of Henriques's work is his ethnographic research on Jamaican sound engineers, identifying salient social and technological aspects of bass mediation in Jamaican sound system culture.

Invoking Henriques's concept of "sonic dominance," a more objective approach to bass frequencies can be found in the work of philosopher and dubstep DJ Steve Goodman (2010).¹⁴ In his book, low frequencies are situated within the context of advanced weaponry alongside the Jamaican dancehall. In a discussion on the power of heavy bass, Goodman proposes bass dominance as an agent of fear and dread:

. . .sonic dominance draws attention to the sensory flattening activated by acoustic and tactile vibration. Moreover, this contributes to a particular mode of collectivity, activating a power of allure, or provocation. The notion of sonic dominance helps to conceptualize the nexus of vibrational force in magnetic, attractional mode. In the overpowering, almost totalitarian sensuality of bass materialism, it also illustrates the mobilization of a sonic ecology of dread: fear activated deliberately to be transduced and enjoyed in popular musical context.¹⁵

Overall, Goodman's work remains an illuminating piece of cultural theory that explores the power of sound in the context of military research and popular culture. His assessment of heavy bass as an agent of fear that simultaneously incites enjoyment aligns with evolutionary understandings of human physiology.¹⁶ In response to certain stimuli

¹⁴ Within the music industry, Goodman goes by the stage name Kode9. Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (Cambridge, Mass.: The MIT Press, 2010).

¹⁵ Goodman, 29.

¹⁶ For a musicological approach that also connects loud sound (and less directly bass) with fear and torture see Suzanne Cusick, "'You Are in a Place That Is out of the World. . .': Music in the Detention Camps of the 'Global War on Terror,'" *Journal of the Society for American Music* 2, no. 1 (2008): 1–26.

that evoke fear or shock, the release of adrenaline can be aestheticized to feel good, denoted here by Goodman as an ecology of dread.¹⁷

The prescription of heavy bass as “dread” can also be found in the work of Louis Chude-Sokei (1997), a scholar in African American studies who applies critical race theory to social and historicized conceptions of technology.¹⁸ In his research, sound system “bass and drums” provide Black communities with a collective escape from colonial repression in a ritualized environment where individual identity melts from consciousness:

The "divine revelation" was experienced in the rituals of sound system culture where the problematics of identity in a racist Babylon could be abandoned for a moment, buried in the womb of "bass and drums"; individual subjectivity could be lost in the pounding volume of a sound system that was devoted to freeing the body from the oppressive imbalance of black labor and white capital. There, in sound, was a space of community that was not geographical but was coded with the tropes and topoi of a specific invention called "Africa."¹⁹

Connecting Rastafari culture with “dread mysticism,” opposed to Goodman’s use of the term in general reference to fear, Chude-Sokei situates the epitome of dread epistemology in the productions of early dub producers like King Tubby and Lee ‘Scratch’ Perry. Accordingly, Chude-Sokei argues that the drum and bass aesthetic has become intrinsically tied with the sound system—an apparatus that acts as a “circuit” of transnationalism in the broader Afrodiasporic context.

¹⁷ See David Brian Huron, *Sweet Anticipation: Music and the Psychology of Expectation* (Cambridge, Mass: MIT Press, 2006).

¹⁸ Louis Chude-Sokei, “The Sound of Culture: Dread Discourse and Jamaican Sound Systems,” in *Language, Rhythm, and Sound* (University of Pittsburgh Press, 1997). See also Louis Chude-Sokei, “Roots, Diaspora and Possible Africas,” in *Global Reggae* (Jamaica: Canoe Press, 2012), 221–40; Louis Chude-Sokei, *The Sound of Culture: Diaspora and Black Technopoetics* (Middletown, CT: Wesleyan University Press, 2016).

¹⁹ Louis Chude-Sokei, “The Sound of Culture: Dread Discourse and Jamaican Sound Systems,” 196.

Similarly, Michael Veal (2007) highlights drum and bass as “one of many instances in which musicians of African descent began to deconstruct and Africanize the Western popular song.”²⁰ Identifying drum and bass as a distinctive aesthetic in roots reggae later codified in dub production, Veal underscores drum and bass as a musical signifier that “radically altered the sound of Jamaican music and that arguably established a characteristically *Jamaican* popular music aesthetic.”²¹ In this context, the concept of drum and bass is one that forefronts bass excessiveness, an essential aesthetic that distinguishes reggae from other genres. Moreover, Veal’s work discusses important semiotic connections between Afrodiasporic identification and common dub aesthetics like reverb and delay. In general, this source is foundational for ethnomusicological approaches to dub and other related Jamaican music genres.

Although drum and bass in dub and reggae is often highlighted as contributing greatly to the development of heavy bass sound in Jamaican popular music, it is a misnomer to assume that this aesthetic was not already embedded in earlier Jamaican practices. Barrow and Dalton (2004) make this clear in a quote by sound system owner King Edwards:

In October 1954, I migrated to the United States, but I didn’t like it. And while I was there, my brother wrote and told me if I didn’t like it there and decide to come back home, then I should carry a sound system. And I accepted his advice, and bought an amplifier and many records. But when I came to Jamaica, I discovered that the typical sound system that they have in America was not suited to the type of dance they have here. People in Jamaica need to have a sound with a *heavy bass*. So I had to rebuild. I started off with a fifty-watt amplifier, made with seven of eight tubes. The first night I played at Galloway Road, I played against a sound called Cavalier, and I was flopped.²²

²⁰ Michael E. Veal, *Dub: Soundscapes and Shattered Songs in Jamaican Reggae* (Middletown, Conn.: Wesleyan University Press, 2007), 60.

²¹ Veal, 59.

²² Barrow and Dalton, *The Rough Guide to Reggae*, 15. Emphasis mine.

In this story, Edwards, who would go on to become one of the most successful operators in late 1950s Jamaica, recounts his first failed endeavor in sound system ownership.

Admitting that his original system failed to impress due to its lack of bass response, this quote is a valuable account for illuminating the importance of heavy bass in the early days of sound system practices where bass response became an essential component for successful Jamaican systems (more on sound systems in chapter 2).

Moving away from Jamaica, an early installment of commercial sound systems in New York's 1970s disco scene illustrates a very different approach to sound aesthetics, one that was influenced by the concept of high-fidelity.²³ In 1972, the Loft's DJ and primary operator, David Mancuso, hired the sound specialist Alex Rosner to add an additional array of tweeters. Mancuso himself stated that "[he] wanted to get as close as possible to pure sound, and...thought the tweeter arrays would help with the high hats, which weren't as sharp as...they could have been in some recordings."²⁴ Initially skeptical about the system installed by Alex Rosner, Mancuso was presently surprised by its results, stating that "the sound was magnificent."²⁵ Striving for detail over everything else, bass was relegated as a mere afterthought. In fact, the new installment only included subwoofers after it was discovered that the design was "now top-heavy."²⁶ In the same

²³ For a history of high-fidelity see Franco Fabbri, "Concepts of Fidelity," in *Sound as Popular Culture: A Research Companion* (Cambridge, Mass.: The MIT Press, 2016), 251–59.

²⁴ Tim Lawrence, *Love Saves the Day: A History of American Dance Music Culture, 1970-1979* (Duke University Press, 2003), 88.

²⁵ *Ibid.*, 90.

²⁶ *Ibid.*, 91.

decade which birthed drum and bass as a prominent signifier of reggae's heavy bass signature sound, the "pure sound" of discotheque was in some instances nearly the opposite. Instead of striving for deep bass, disco clubbers were attempting to recapture the fidelity of live sound and the artist's original intentions. In a move opposite to bass centrality, a sort of *treble culture* was indeed at play.²⁷

More recent than disco, bass sound has played a critical role in house music and electronic dance music or EDM. In the work of Hillegonda C. Rietveld (1998), heavy bass is identified as a "tactical-acoustic" event that brings an important element to the sensorial experience of club environments:

Only there, at a place where an opportunity is provided to engage with it in a physical sense and when it has been amplified enough to become a tactile-acoustic event, does house music become complete within the movements of the dancing crowd...in this process of "listening" with the body a sense of bliss can be achieved. Added to the often sexually charged word-bites and lyrics, this bliss can give a sense of being unified with the tactile-acoustic space within the specific moment of consumption.²⁸

In addition to bliss, language which parallels the work of Simon Reynolds, Rietveld also suggests a Freudian connection to heavy bass perception within club spaces.²⁹ This approach is thoroughly explored by Chris Christodoulou (2011) who draws from the psychoacoustical theorization of Anthony Vidler (1992).³⁰ Christodoulou suggests that "the chora's uncanniness is inscribed in the visual iconography of drum 'n' bass via the

²⁷ My usage of this term here is not to be confused with the work of Wayne Marshall (2014) who proposes a treble culture as emerging from the use of mobile listening devices (see chapter 3).

²⁸ Rietveld, 161.

²⁹ See Simon Reynolds, *Generation Ecstasy: Into the World of Techno and Rave Culture* (New York: Routledge, 1999)

³⁰ Chris Christodoulou, "Rumble in the Jungle: City, Place and Uncanny Bass," *Dancecult* 3, no. 1 (2011): 44–63.

fetishised ‘dark space’ of the post-industrial city and in musical terms through the deep, low-frequency murmurs of its bass-lines.”³¹ In other words, the sensation of heavy bass through sonic dominance in hot and sweaty club environments mimics the experiences of being in a mother’s womb.

As an integral element of club music’s “beat” or “riddim” (Jamaican patois for rhythm), bass sound has been studied as playing a fundamental role in “the drop” of EDM productions. In combination with the “buildup,” bass has been theorized as an essential element for inducing emotional intensity amongst listeners.³² Also in club spaces, the impact of bass sound on corporeal motion has been shown to be correlated with increased dynamics through empirical research.³³ Of course, this connection has been culturally embedded within Afrodiasporic musical practices for many decades through drum rituals and popular practices.

As expressed by Rietveld’s coined phrase (audio-tactile), sub-bass frequencies in clubs are often felt more than they are heard. Thanks to powerful subwoofers, bass can be amplified at high intensities, providing “in the chest” sensations via haptics—a familiarity to many club goers around the world.³⁴ Approaching the study of bass from a technologist perspective, Robert Fink (2018) provides an exhaustive study on subwoofer

³¹ Ibid., 47.

³² Ragnhild Torvanger Solberg, “‘Waiting for the Bass to Drop’: Correlations Between Intense Emotional Experiences and Production Techniques in Build-up and Drop Sections of Electronic Dance Music,” *Dancecult* 6, no. 1 (2014): 61–82.

³³ Edith Van Dyck et al., “The Impact of the Bass Drum on Human Dance Movement,” *Music Perception* 30, no. 4 (2013): 349–59.

³⁴ This is explored by Fink who makes it clear that bass vibrations do not actually resonate internal organs. See Fink, 94. For more on musical haptics, see Stefano Papetti and Charalampos Saitis, eds., *Musical Haptics* (Cham, Switzerland: Springer Open, 2018).

design, clearing the air with scientific approaches towards the sensual overload provided to listeners by bass frequencies. Among many elements in this short but diverse chapter, Fink outlines important concepts of psychoacoustics that underline bass exceptionalism and puts the discussion of bass sound in conversation with the growing musicological field of timbre studies (more on this in chapter 1).

Finally, the most extensive work engaging with a theorization of bass sound is provided in the work of Paul Jasen (2016). A cultural theorist, Jasen combines sound studies with sensory studies as he adopts the concept of “myth science,” coined by Sun Ra and expanded upon in the sonic fiction of Kodwo Eshun, to explore bass’s ability to “defamiliarize the world.”³⁵ Jasen’s book provides a full-fledged dive into bass theory that among many facets tackles the history of bass sound in religious cultures, surveys the history of bass frequencies in organs, discusses bass prevalence in cymatic arts, recounts bass as a musical device in art music, and concludes with an exploration of “bass cults” (his preference in place of bass culture). An exhaustive source too rich to be summarized in a single paragraph, Jasen’s research seeks to flip the narrative on semiotics. Instead of humans making sense of bass, Jasen looks to uncover how bass impacts the human experience. In his own words, “the guiding question is not so much what we make of bass, but what it makes of us.”³⁶

In similarity with Jasen, my own approach to bass culture(s) is informed by the growing field of sound studies: an interdisciplinary area that now encompasses a myriad

³⁵ Jasen, *Low End Theory*, 15. See also Kodwo Eshun, *More Brilliant than the Sun: Adventures in Sonic Fiction* (London: Quartet Books, 1998).

³⁶ *Ibid.*, 31.

of subjects related to the production and consumption of music and/or noise. By the 2010s, sound studies has engaged with a range of topics from early car engines and earplugs to video game music, deaf culture, and the digitalization of hip-hop.³⁷ Turning attention to sound *qua* sound (as opposed to sound as music), sound studies provides renewed perspectives on the perception of acoustics that goes beyond traditional musical methodologies. As such, works in this field provide valuable theoretical references for material analyses of sound technologies that are often theorized as culturally and historically constructed.³⁸

A critical piece to this integrated approach is the conception of sound as a *perceptual* phenomenon. A foundational theme of Mark Grimshaw and Tom Garner (2015), the definition of sound as emergent perception illuminates the shortcomings of an approach based entirely on acoustics.³⁹ Going to great lengths to stress the importance of defining the concept of sound as independent from the existence of physical soundwaves, Grimshaw and Garner pose that acoustic waveforms are “not only inherently meaningless but ... not necessary to perceive sound.”⁴⁰ Taking a cognitive approach, these authors suggest that sound only arises in the auditory cortex, imagined sound *is* sound, and all sounds are organized by the perceiver alone. A stance that resonates alongside

³⁷ See Trevor Pinch and Karin Bijsterveld, *The Oxford Handbook of Sound Studies*, (New York: Oxford University Press, 2012).

³⁸ These theoretical approaches in sound studies can be traced back to Murray Schafer’s seminal work on soundscapes as well as more recent research by Johnathan Sterne. See R. Murray Schafer, *The Tuning of the World*, (New York: A.A. Knopf, 1977); Jonathan Sterne, *The Sound Studies Reader* (New York: Routledge, 2012).

³⁹ Mark Grimshaw and Tom Garner, *Sonic Virtuality: Sound as Emergent Perception* (New York: Oxford University Press, 2015).

⁴⁰ *Ibid.*, 38.

phenomenological approaches, this theorization recognizes that sound is never objective but always cultivated through individual observation. Running against the grain with a commercialized conception of sound to fulfill mass appeal, Grimshaw and Garner's work epitomizes the importance of psychoacoustics through the very definition of sound itself—which according to them must consider perception, memory, environment, reasoning, and imagination.

As stated above, this research positions bass culture(s) as both a singular and pluralistic conception. When considering Grimshaw and Garner's theorization of sound, the importance of a singular positioning of the term becomes questionable. If every instance of perceived sound is different from the next, then what is fruitful about studying bass across cultural and social divides? A justifiable query, this observation suggests that the very idea of an overarching bass culture(s) is unnecessary. Furthermore, if most instances of modern music do involve bass frequencies, then what distinguishes bass culture(s) from other musical practices? Instead of a dead end, this illustrates the need for more research on bass sound. By combining musicological methods with theoretical scaffolding, a clearer picture of heavy bass and bass culture(s) can be developed, illuminating the importance of connecting sound studies with musicological analysis and cultural theory. Indeed, as suggested by Marta García Quiñones, “sonic epistemologies should not leave music out, since they will ultimately reveal their potential in elucidating how music can be a form of knowledge through sound, in dialogue with other sounds.”⁴¹

⁴¹ Jens Gerrit Papenburg and Holger Schulze, eds., *Sound as Popular Culture: A Research Companion* (Cambridge, Mass.: The MIT Press, 2016), 71.

Related to the perceptual nodes of Grimshaw and Garner’s work, my research also engages with the musicological study of timbre. A topic that has long eluded researchers, timbre is notoriously difficult to theorize due to the tautological nature of its description. In other words, a specific timbre must always be defined in relation to something else: a musical instrument, a voice, or even an emotion. Zachary Wallmark (2022) tackles this problem by integrating cognitive sciences to study timbre’s effect on musical affect and meaning.⁴² Other (ethno)musicologists like Cornelia Fales and Robert Fink have studied timbre in relation to electronic or wired sounds and sub-bass frequencies, respectively.⁴³ A central element of my approach to define musical qualities of heavy bass, the study of timbre links perception with the more measurable physics of waveforms (as exemplified in spectrogram analysis), balancing quantitative evidence of bass heaviness with qualitative interpretation.

Lastly, this thesis aims to push the boundaries of bass research by exploring personal music consumption practices in mobile audio devices (MADs). In this context, scholars like Hosokawa (1984), Bull (2007), Kassabian (2013), and Marshall (2014), are influential sources that contextualize the history of mobile listening from the humble origins of Sony’s Walkman (1979) to the widely ubiquitous practice of mp3 listening made possible with the iPod during the early 2000s.⁴⁴ In 2023, mobile listening has

⁴² Zachary Wallmark, *Nothing but Noise: Timbre and Musical Meaning at the Edge* (New York: Oxford University Press, 2022).

⁴³ Fales, “Short-Circuiting Perceptual Systems”; Fink, “Below 100 Hz.”

⁴⁴ See Shuhei Hosokawa, “The Walkman Effect,” *Popular Music* 4 (1984): 165–80; Michael Bull, *Sound Moves: iPod Culture and Urban Experience*, International Library of Sociology (New York: Routledge, 2007); Anahid Kassabian, *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity* (Berkeley: University of California Press, 2013); Wayne Marshall, “Treble Culture,” in *The Oxford Handbook of Mobile Music Studies*, vol. 2 (New York: Oxford University Press, 2014), 43–76.

continued to thrive in an age of AirPods and portable Bluetooth speakers. In this context, Wayne Marshall explores “treble culture” in an essay that discusses the ubiquity of trebly listening experiences notorious in MADs. Arguing that this work is already outdated, I discuss the recent phenomenon of audio manufacturers explicitly marketing bass response to targeted consumers. As Jacques Attali would suggest, we are far into the repeating stage of bass culture(s)’s economy.⁴⁵

In contributing to the growing body of bass research, this thesis aims to provide additional steps towards a musicology of bass culture(s) by interacting with the sociological history of bass sound in addition to engaging with material explorations of audio technologies that I argue function as prerequisites for the consumption of heavy bass (see chapter 3). As such, the importance of this thesis lies in its interdisciplinary approach which I find essential for future research on the subject given the topic’s diverse body of literature. In addition, the balance between culturally based research and material or technologically centric methods resonates with my conception of concurrent pluralistic and singular constructions of bass culture(s). Specifically, bass exceptionalism acts as glue to hold the overarching concept together while the term’s plurality is represented by the range of historical and/or personal projections of heavy bass meaning, extending well into the realm of sociological and cognitive studies.

Lastly, the sustained value of this work rests in the ongoing proliferation of bass music in popular contexts as expressed eloquently by Jasen in the context of hip-hop:⁴⁶

If hip-hop has an overriding sonic profile—one that its makers and fans flock to, that its critics despise—it is neighbourhood-rattling bass. Yet this basic sonic-cultural fact has rarely been taken up in any sustained way.

⁴⁵ Jacques Attali, *Noise: The Political Economy of Music*, Theory and History of Literature; (Minneapolis: University of Minnesota Press, 1985).

⁴⁶ Jasen, 6.

In retrospect, the prominent emergence of hip-hop and EDM via marginal subcultures is now a forty-year-old phenomenon as bass sound continues to develop as a central feature in popular music writ large. Opposing a more traditional approach which investigates a specific genre or style such as trap, reggaeton, deep house, drum ‘n’ bass, or hip-hop in isolation, this work attempts to examine one singular sonic property—heavy bass. Although this limits my analysis to certain sociological contexts and leads to the exclusion of others entirely, my attempt to disrupt the traditional scholarly scope is designed to uncover the larger evolution of bass centrality. In sum, this work is not an extensive analysis of a particular sonic culture nor is it a corpus study of all bass culture(s). Rather, this thesis attempts to supply a “fundamental baseline” for the ongoing development of low-end theories, acting as a much-needed resource for future musicologists interacting with the growing topic.

Chapter Overviews

In this work, I present a trifold methodology that runs in correspondence with the structural format of this thesis: (1) a theorization of heavy bass sound that synthesizes psychoacoustical research, spectral analysis, and personal experience as a multi-genre bassist; (2) a historical case study on early Jamaican popular music which gathers ethnographic evidence from secondary sources, discusses relevant folk traditions, musical instruments, and analyzes important musical examples through traditional notation; and

(3) a technological review of recent developments in Mobile Audio Devices (MADs) with an emphasis on Beats headphones through an analysis of consumer reviews, technical specifications, and commercial advertisements.

In chapter 1, I discuss technical, physical, and perceptual barriers to bass listening that contribute directly to bass exceptionalism. In this context, the biological limitations of human hearing and the physical challenges of propagating loud sub-bass frequencies also inform my working definition of heaviness. Within this chapter, I approach heavy bass as a musical *timbre*. Along with exhibiting a sub-bass fundamental pitch and high volume, I argue that all heavy bass sound requires low spectral centroids: a measurement of *where* the average mass of a sound's overtones are located within the frequency spectrum. Analyzing musical examples with the use of a spectrogram and waveform analysis, I argue that timbre provides a valuable framework for understanding heavy bass sound due to its inherent multidimensional construction.⁴⁷

I examine bass sound in Jamaican popular music as the subject of chapter 2. In this cultural context, heavy bass first originated in the budding sound system culture that first developed during the immediate post-war era and continued throughout the 1950s through to modern dancehall practices today. During the '50s, sound systems replaced live musicians out of economic necessity and quickly emerged as the central site of downtown social life in the heart of the island's capital, Kingston. Within this environment, I track bass response as an important commercial necessity in the growing

⁴⁷ To accomplish this, I will use Sonic Visualizer's open-source software and uncompressed digital files of musical examples. The peak frequency overlay comes preconfigured with Sonic Visualizer. This option only alters the visual display of the software's default spectrogram and is not a different or alternative analytical tool. Rather, this visual overlay highlights frequencies with the most amplitude for a specific sound sample which in the case of heavy bass provides a significant prominence of the fundamental frequency.

competitive industry, as evidenced earlier in the quote by King Edwards. Intersecting with racial identification and connectedness, I analyze bass sound as *articulating* Blackness once Jamaican music spread globally through the global recording industry.⁴⁸ Along the way, I historicize bass sound in earlier Jamaican practices of mento and subsequent popular styles of ska and rocksteady. As a result, I add bass to the toolbox of Afrodiasporic musical aesthetics and highlight the general need to historicize bass heaviness.

Chapter 3 explores bass culture(s) in the modern world of ubiquitous listening through mobile audio devices (MADs). Countering Wayne Marshall's claims regarding "treble culture," I argue that improved technologies and lowered price points of MADs have made heavy bass *more* prevalent and accessible for everyday listeners. This is evidenced by the popularity of marketing strategies that stress bass response as a metonym for sound and product quality. Thus the equation of heavy bass listening with improved "studio quality" has embarked a further commercialization of bass culture(s) within the context of late capitalism. Instead of needing frequent local clubs for sonic dominance at the low end, modern listeners can easily opt for their own heavy bass listening experience by adjusting the bass in onboard EQ preferences. Better yet, you don't even have to wait for the DJ to play your favorite song. This phenomenon raises important questions when considering the historical scarcity of bass sound that has informed decades of bass culture(s)'s social constructions as a community centric experience only available in certain specialty environments. Without the foil of

⁴⁸ Keith Negus, *Popular Music in Theory: An Introduction* (Middletown, Conn.: Wesleyan University Press, 1996).

“treblification” (as Marshall puts it), the concept and performance practice of bass culture(s) is increasingly put into crisis. Moreover, ubiquitous bass offers a sanitized virtual listening space where previously required in-person engagement with Black culture is no longer a necessity for engaging with the low end.

2. HEAVY BASS: THEORIZING LOW-END SOUND

Guitar effects pedal, bass pedals . . . what’s the difference? My initial thoughts on the matter seemed inconsequential as I pieced together an old board for playing bass in my college rock band. Excited by our new originals, the group was looking to put an edge to our tone and bass distortion seemed to be the “missing ingredient.” At the time, I had recently transitioned from guitar to bass, so my equipment was a hodgepodge of borrowed and repurposed gear. Using my trusty Proco Rat distortion pedal, this didn’t seem to matter. The stompbox created a gritty, fat, and crunchy tone that emanated from my dependable SWR cabinet. Outside of the group context, it sounded thick, powerful, and woefully dirty, reminding me of the intro to Muse’s “Hysteria”—exactly what we were looking for. However, on the bandstand the pedal was a complete disappointment. Even with the volume cranked, the bass response seemed to all but disappear. Every time I engaged the device, my sound quickly became washed out, baren, nonexistent.

Finding solace among bassists who had experienced similar vexations, I quickly discovered that the “bass cut” is a direct result from using any kind of drive on low frequency inputs.⁴⁹ As most experienced bassists have learned, EQ boosts or bypassed signal chains are necessary for compensating the natural loss of the bass sound when adding distortion.⁵⁰ An acoustic puzzle, this is just one example of *low frequency*

⁴⁹ For more context on this phenomenon and other experiences with bass and distortion pedals see “Distortion Pedals — Bass Signal Cut,” The Gear Page, February 1, 2014, <https://www.thegearpage.net/board/index.php?threads/distortion-pedals-bass-signal-cut.1384043/>.

⁵⁰ Some bass specific distortion pedals will have these features built into the device, but many bassists also use separate EQ devices to do this work.

exceptionalism—low sounds playing by their own rules due to perceptual and technological limitations of this register. Rather than continue blindly with our cranking rituals, it is time to dig deeper into the acoustical abnormalities of the low-end and ask why the register can be so elusive and troublesome. In answering these questions, the following chapter works towards a theorization of bass sound with a specific focus on *heaviness*: the low-end thump that shakes windows, hits chests, and ripples the coffee in your mug.

A centrally important aspect of bass sound, the phenomenology of heaviness is not directly related to any one single parameter of musical expression (e.g., pitch or dynamics). Looking at acoustic aspects of bass, I argue that, while lowness and loudness are integral attributes of bass sound, heaviness is also observable through *spectral* elements of acoustic vibrations—specifically the attribute of *spectral centroid*. This perspective pushes back against the pitch centrism that underlies traditional music studies as well as recent attempts to theorize low-end sound outside of the musicological discipline.⁵¹ Moreover, I claim that “heavy bass” is best conceptualized as a species of timbre. In doing this, I break down the false independence of pitch and amplitude which become critically intermingled at low registers. As will be argued, heavy bass *as* timbre reflects the sound’s multidimensional acoustic construction in addition to its perceptual looseness. My construction of heaviness is inherently perceptual and experiential, relying on comparative case studies and a degree of subjectivity—it does not attempt a robust systematic methodology.⁵² However, heaviness is situational and highly dependent on a

⁵¹ I am referring here to Jasen (2016).

⁵² By subjectivity, I am referring to the inclusion of my own experiences as a professional bassist across classical, jazz, and popular genres which provide important pieces of evidence throughout this chapter. I

plethora of variables including cultural context, listening environments, and of course playback technology that militate against any single privileged method of analysis. Thus, heavy bass as described in this chapter is decisively non-universal and based fundamentally in phenomenological aspects of listening.

Beginning with the basics, this chapter starts by defining the pitch of bass sound via organology and musical references. A surface level analysis, this initial plunge highlights the need for greater exploration nuancing of low frequency sound. Following this, my focus shifts towards equal-loudness studies which illustrate perceptual particularities of bass sound perception. After overviewing some timbral rudiments, I present two comparative case studies where heavy bass is analyzed through spectral and waveform analysis at the sites of performance and post-production.

Bass and Pitch

Sound frequency is critical for identifying pitch but may not be familiar or useful to everyone. For engineers and mixing specialists who regularly interface with EQ technology, the language of frequency (as measured in Hertz) is engrained in one's musical perception much the same way that note names and octave registers are to trained musicians. In appealing to both perspectives, I have found it important to reference both frequency and notated pitch throughout this chapter. In addition, my discussion of pitch in this section refers to *fundamental frequency* (or F0): the lowest frequency of a periodic waveform, as opposed to the higher partials or overtones that are always present in

acknowledge that this brings in an element of research bias. However, I feel that my experiences as a bass performer are valuable insights to the growing area of low-end theory.

complex acoustic sounds. In musical contexts, the named pitch of a given note is reflective of the fundamental frequency; thus, for example, A4 is often tuned to 440 Hz. Overtones are crucial elements of sound quality but not a core element of pitch in traditional conceptualizations (more on this later). To generalize, the bass register ranges from approximately 20 Hz (E0), the lower limit of human audibility, to around 250 Hz (B3). Below 20 Hz has been described as the “infrasound” region where vibrations are felt rather than heard. This region is typically split further into subcategories. For many applications, it is common to differentiate between a low bass (20–60 Hz/E0–B1), mid bass (60–120 Hz/B1–B2) and high bass (120–250 Hz/B1–B3) while “sub-bass” typically refers to frequencies below 70 Hz or 100 Hz (though this designation is not universally agreed upon).

Moving beyond numbers and letters, these ranges only become meaningful when put in context of specific instruments or related to specific recordings. In terms of the double bass, range limitations vary depending on setup. For five-string instruments, the lowest possible note is B0 (31 Hz) while a typical four-string instrument with an extension can down to C1 (33 Hz), without it the lowest note is an E1 (41 Hz).⁵³ The majority of the classical symphonic repertoire for the double bass bottoms out at C1 or “low C” although several instances of the “low B” can be found in works by romantic German composers writing for five string instruments as well as more contemporary

⁵³ An extension is a device that elongates the lowest string above the nut with an ebony attachment that is fitted onto the scroll, acting as a small “extension” to the fingerboard. This device increases the length of the lowest string and allows the player to access lower notes without changing the instrument’s tuning. This setup is very common in American orchestras as it allows the bass section to consistently double an octave below the cello’s lowest note (C2), hence the name “double” bass. Some extensions do reach down to B0 but they are far less common. In classical bass culture, the extension notes are colloquially known as “low notes” to distinguish them from the four-string range that only reaches down to an E1. If a player does not have an extension, the low notes are simply played up the octave.

pieces. Notable examples of the low B can be found in Richard Strauss's *Also Sprach Zarathustra* (1896), Respighi's *Pines of Rome* (1924), and Berg's *Wozzeck* (1925).⁵⁴ While the double bass is undisputed as a critical instrument for low frequencies, other symphonic bass instruments can reach even lower notes. For instance, the contrabass tuba extends down to Bb0 (29 Hz) while the contrabassoon's lowest standard note is an A0 (27.5 Hz).

By and large, the double bass register is the same as electric bass instruments. Five-string varieties can reach B0 while the standard four string electric only extends down to E1 (41 Hz). In terms of application, most classic rock and jazz recordings utilize four-string instruments but it has become more typical to dip down into the low notes in popular styles like R&B and (neo)soul. For example, tracks like "Molasses" by Hiatus Kaiyote (2015) regularly demonstrates the lower range of a five-string electric while tunes like Raveena's "Honey" (2018) exemplify the use of a low Eb1 (39 Hz) which is heard regularly throughout the repeating three chord groove.⁵⁵ Of course, any of these conventions may be altered with use of different tunings.⁵⁶ Outside the confines of the string bass, the kick drum and its synthesized equivalents also extend below 100 Hz and into the sub-bass register. An essential backbone for many hip-hop records, examples of

⁵⁴ In similar light, some composers like Brahms only wrote for a four-string bass instrument though modern interpretations often substitute lower pitches for certain passage work. Alternatively, composers like Bach consistently wrote bass lines notated down to low d below the staff, indicating that with the octave transposition this would be actualized at D1. Playing these low notes has become convention in modern performance even though it is uncertain whether or not the bass part was doubled at the octave during Bach's life.

⁵⁵ As an electric player with a four-string instrument, not having the low E-flat can be quite annoying especially when this note is the tonic.

⁵⁶ In certain musical practices, the act of detuning has been recorded at excessive levels. See Zachary Wallmark, "The Sound of Evil," in *The Relentless Pursuit of Tone: Timbre in Popular Music* (New York: Oxford University Press, 2018), 65–87.

sub-bass kick include “Rebel without A Pause” by Public Enemy (1988) with its bass drum sample tuned to a low G-flat1 (46 Hz) along with tracks like “What U Gon’ Do” by Lil Jon & The East Side Boyz (2004) where a low thumping drum is layered with a bass synth tuned down to an E-flat2 (78 Hz) and extended to B-flat1 (58 Hz) on the fourth beat of every eighth bar. Thanks to modern electronics, the extent of low sound is only limited by the technological reproduction of these low frequencies and, of course, human hearing.

Outside of the western classical tradition and popular genres, instruments like the Australian didgeridu (didgeridoo) or yirdaki can produce frequencies down to about 50 Hz (G1). For example, the virtuosic didgeridu performer Ondřej Smeykal can be heard performing a low A1 (55 Hz) on “Cestovani” (2004). In this recording, the drone is manipulated with overtones throughout the entire four-minute recording, a performance practice that originates in Aboriginal ritual contexts.⁵⁷ Even lower, great Eastern bells are said to exhibit extreme sub-bass fundamentals such as the Yongle Bell in Beijing which allegedly hums at 22 Hz (F0).⁵⁸ Weighing about 46 tons, this bell dates back to the early fifteenth century and can allegedly be heard for miles once it is struck. In addition to these examples, many indigenous cultures also utilize an array of low drums. Instruments like the djembe, tribal powwow drums, and congas are just a few well-known examples.

As demonstrated, bass frequencies in musical practice are quite diverse. Thus, the discussion of pitch as defined by the fundamental frequency is severely limited and not

⁵⁷ For more on the didgeridu see Alice M. Moyle, “The Australian Didgeridu: A Late Musical Intrusion,” *World Archaeology* 12, no. 3 (1981): 321–31; Karl Neuenfeldt, *The Didgeridu: From Arnhem Land to Internet* (Sydney: J. Libbey/Perfect Beat, 1997).

⁵⁸ Jasen, 76..

conducive to representing perceived bass impact or heaviness. In other words, lowness alone does not equate to strong bass response typical of popular production. While low pitch brings us to the venue of bass sound, it may or may not make us dance. As such, it is entirely possible to have low frequencies that are not perceived as “heavy.” This seems obvious when pinning instruments like the djembe against a synthesized sub-bass kick or a plucked double bass against a Fender Precision amplified through an Ampeg SVT stack. Familiar to anyone who has performed or listened to both acoustic and electronic performances, the meat of these differences lies in amplification—the rock band versus the symphony.

Before moving forward, it is necessary to clearly define terms such as frequency, pitch, amplitude, and loudness which may describe similar characteristics of sound but are not entirely interchangeable. Primarily, this is a result of physical properties of vibration (acoustics) not being identical to human perception. In this chapter, this reality has been hinted at with the discussion of fundamental frequency. Although a stand in for pitch, any musical note is actually composed of multiple frequencies that occur simultaneously. Thus, *frequency* is a term that describes the physics of sound while *pitch* refers to the human perception of register. Likewise, *amplitude* describes the physical measurement of sonic intensity while *loudness* refers to the perceived characteristic of the same attribute. In the following discussion, the discrepancy between the physical domain of acoustics and the perceptual domain of sound becomes integral for understanding bass exceptionalism.⁵⁹

⁵⁹ Cornelia Fales, “The Paradox of Timbre,” *Ethnomusicology* 46, no. 1 (2002): 56–95.

The Necessity of Amplification

At all frequencies, sound becomes more perceptually prominent as amplitude increases. As sound pressure levels (SPL) rise, that is, so does the perception of *loudness*. It is common to assume that this relationship is linear; however, the link between amplitude and loudness changes across the frequency spectrum. Moreover, the unequal relationship between these two attributes (amplitude and loudness) is most drastic at lower registers. Generally, lower frequencies require higher intensities to produce the equivalent level of loudness compared to higher ones. This was first evidenced by Fletcher and Munson who used human participants in their inaugural equal-loudness experiments in 1933.⁶⁰ Participants were exposed to pure tones of differing frequencies: for each sound, the listener was asked to alter the SPL to match a level of perceived loudness that stayed consistent throughout the test's duration. When examining the results, Fletcher and Munson found that lower tones correlated with higher SPL intensities. An inverse exponential relationship, Figure 2.1 illustrates Fletcher and Munson's findings as well as subsequent equal-loudness studies that have replicated their original data.⁶¹ In interpretation of this figure, it can be deduced that playing a C6 note (1 kHz) tone and C2 note (65 Hz) at the same level of loudness would require the lower note to be performed thirty decibels higher than the treble note. Because decibels are a logarithmic scale, this

⁶⁰ Harvey Fletcher and W. A. Munson, "Loudness, Its Definition, Measurement and Calculation," *The Journal of the Acoustical Society of America* 5, no. 2 (1933): 82–108.

⁶¹ Yoiti Suzuki and Hisashi Takeshima, "Equal-Loudness-Level Contours for Pure Tones," *The Journal of the Acoustical Society of America* 116, no. 2 (2004): 918–33.

equates to playing the lower pitch at 1000 times the intensity of the higher one. No wonder acoustic bass instrumentalists are always instructed to play louder!

These results illustrate the realities of human perception and an important aspect of human psychoacoustics: our ears favor the mid-range. A byproduct of evolutionary pressures, the physiological trait of being sensitive to these frequencies correlates with the register of the human voice as well as other environmental sounds that typically do not extend into bass extremities with exception of catastrophic natural disasters that are comparatively quite rare. In today's world, this is good news for communicating around a table at a busy restaurant or understanding radio speech in your car over the low hum of highway noise. However, this biological inefficiency has catastrophic effects when seeking low sounds. As Fink puts it, "Below 100 Hz, all humans are hearing impaired."⁶²

When it comes to music, it is common, even for trained musicians, to have difficulty in differentiating between bass guitar, upright, and other bass synthesizers. As a jazz musician, I have been fooled many times by upright bass tones that sound "electric" or synthesized tones that sound "acoustic." Similarly, bass pitch can be hard to deduce compared to higher registers. This is evidenced again through my own experiences performing in double bass sections in orchestra. If a held pitch immediately sounds out of tune, performers have been trained to physically put an ear on the side of their instrument to check for individual intonation. Without this proximity, it is almost impossible to tell who might be straying flat or sharp as the section's sound blends seamlessly together.⁶³

⁶² Fink, 93.

⁶³ This also relates to the omnipresence aspect of bass sound compared to the more directional perception of higher frequencies. See Fink, 99-100.

As a former cellist, I can speak to the drastic reduction of this issue at higher registers. For instance, I've never seen an upper-string musician stray to hear their own instrument quite in the same way.

Acting as a hearing aid, amplification counters against biological deficits. By boosting bass, amplification can balance the scale of what has already been tilted by perceptual shortfalls. In live musical spaces this is deployed regularly and can be evidenced by many conventional performance practices. For example, bass amps need higher power outputs than guitar equipment to provide similar volume levels. In fact, it is typical to see a bass amp rated between 200 to 500 watts while a 100-watt guitar amp, even a solid-state model, is comparatively quite loud.⁶⁴ Furthermore, psychoacoustics also explains why the first part of a drumkit to receive PA support is always the kick. In small venues where the cymbals and snare carry with plenty of presence, the bass drum is the first element to get lost in the mix.⁶⁵ Even in classical situations, it is not atypical to put a mic on the first bass stand to augment the house sound and add a bit of low-end resonance.⁶⁶ In club environments and within the realm of Jamaican sound systems, not much needs to be said about the “wall of sound” that emanates from an array of stacked subwoofers designed and tuned for specific bass frequencies.⁶⁷ A throughline in all these situations, bass receives the most amplification simply because it needs the most help.

⁶⁴ The number of times I have heard guitarists say they returned their Fender Twin because it was “too loud” is astonishing. I have never come across similar circumstances with bass combos although lighter weight designs like Markbass single speaker designs have become the go-to options for saving the back strain of lugging around older and heavier equipment.

⁶⁵ This also has to do with the limited sound propagation of low frequencies: they don't travel as far in open spaces as higher registers, another example of bass exceptionalism.

⁶⁶ This is particularly useful in “dead” halls without ample reverb.

⁶⁷ See Fink, “Below 100 Hz”; Julian Henriques, *Sonic Bodies*.

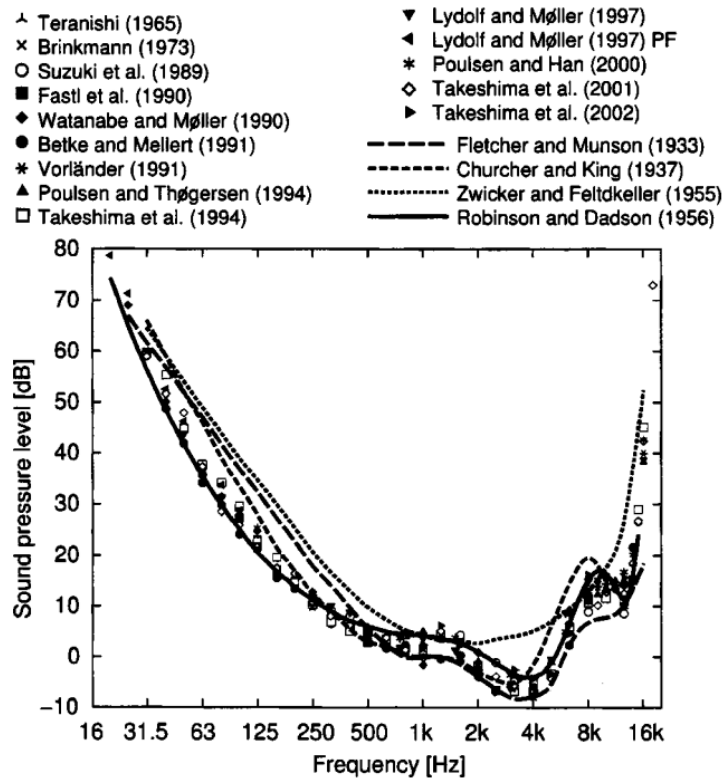


Figure 2.1. Equal-loudness contours of pure tones recorded by various acoustic studies.

As I have explained, humans lack hearing sensitivity at bass registers. To accommodate, sound intensity can be manipulated to balance against biological limits. Thus, amplification becomes critical to produce heavy bass since low frequencies require more intensity than treble counterparts. A critical component of bass exceptionalism, this phenomenon evidences a myriad of performance practices and production techniques employed in different genres and venue situations. However, amplification and pitch are not the only attributes contributing to a sense of heaviness. Recall that my distorted bass guitar was amplified, yet the tone still lacked low-end prominence. In this situation, it was not only a question of *if* the signal was amplified but *how* the amplification was being done.

Heaviness as Timbre

Thanks to a recent explosion of works on timbre published in the late 2010s and early 2020s, timbre research has rapidly expanded the musical toolkit for analyzing acoustics, perception, and semiotics of musical sound.⁶⁸ In ethnomusicology, Cornelia Fales’s “paradox of timbre” (2002) pioneered the concept as integral for characterizing sound but also inherently challenging to analyze due to its perceptual fluidity and multidimensionality. For Fales, timbre carries the most information about a sonic environment and a musical source but also is the “most divergent from sound in the physical world.”⁶⁹ In framing timbre as a paradox, Fales first put a finger on the lingering issue of timbre research in (ethno)musicological contexts: it has traditionally been defined through exclusion.⁷⁰ In other words, timbre is not a single linear variable like pitch or amplitude but a combination of these sonic aspects as well as other nonlinear characteristics of acoustics. As a result, timbre analysis can facilitate the study of musical elements where conventional categories like pitch, rhythm, and dynamics fall short.

Because of timbre’s multivariable construction, it is the perfect method for analyzing heavy bass sound since pitch and amplitude are already interdependent in the production of bass prominence. As explored here, the spectral composite of a sound becomes an integral part of this equation. However, timbre is difficult to deduce analytically and systematically. One way out of this is to rely on comparative and

⁶⁸ Stephen McAdams, “The Perceptual Representation of Timbre,” in *Timbre: Acoustics, Perception, and Cognition*, ed. Kai Siedenburg et al. (Cham, Switzerland: Springer, 2019), 23–57.

⁶⁹ Cornelia Fales, “Short-Circuiting Perceptual Systems: Timbre in Ambient and Techno Music,” 58.

⁷⁰ *Ibid.*, 157.

descriptive language—certain timbres sound *like* something else or are indicative of material descriptors. For example, a heavy bass timbre could be described in comparison to the rumbling of an earthquake or as creamy, thick, pounding, dark, or dense.⁷¹ While verbal descriptors are integral for communicating timbre characteristics, the use of descriptive vocabulary can only do so much heavy lifting.

By contrast, a more material approach to understanding timbre is to discuss specific acoustic aspects of a sound’s spectral and envelope complexion. Although timbre is still at its core a perceptual phenomenon, it is understood that the acoustic characteristics of sound do directly impact how a timbre is understood by different listeners. This assumption is rooted in psychoacoustic research that has tested the effects of a sound’s acoustic properties on human perception. Among these studies, it has been observed that spectral centroid (*where* the center of mass in a spectrum is located) and attack time both play critical roles in how timbre is perceived by human subjects. Specifically, experiments over the last forty-plus years have confirmed that both these elements are “major determinants of timbre” although these studies define spectral centroid or spectral “gravity” in a variety of ways, making direct comparisons difficult.⁷²

For my purposes, the acoustic aspects of timbre, most importantly spectral centroid and attack time, are assumed to have the ability to alter perceptions of bass heaviness. As such, waveform and spectral analysis highlights critical information from musical examples of heavy bass, observations that can be compared against individual

⁷¹ In this way, the modifier “heavy” is an extension of this procedure.

⁷² For example, see Grey (1977); Krimphoff, McAdams, and Winsberg (1994); McAdams et al. (1995); Marozeau et al. (2003); and Caclin et al. (2005).

listening assessments. To do this work, I upload each audio example into the program Sonic Visualizer to produce peak frequency spectrograms. Like a normal spectrogram, the y-axis measures frequency while the x-axis measures time. Unlike a classic spectrogram, the peak frequency overlay offers a lens to highlight the most intense frequencies for a given moment instead of showing all energy content. This helps to emphasize spectral centroid as examples with higher density in the fundamental frequency will have little or no overtones shown due to the higher ratio between fundamental and upper partials. Thus, when looking at these figures, brighter bottom fundamentals and darker upper frequencies correlate with a lower spectral gravity. For reference, each example in this paper has the same visual settings for accurate comparison.⁷³ In addition, I supplement this data with spectrum snapshots at critical points of each example's bassline to show in detail the ratio between the fundamental and higher overtones at respective moments of each song's bass drop. This puts more of an exact figure on the extent of low spectral centroid compared between examples. In general, this method has facilitated a comparative approach for understanding heaviness of bass sound. A spectrum itself, it is important to preface that heaviness is not a fixed or exact dimension of sound. As discussed later, this leads to certain limitations of this analysis's future application.

⁷³ For all peak frequency diagrams in this chapter the color was set to wasp with threshold at -68 dB and colour rotation turned down to zero. In addition, the scale was set to linear with the gain control at 0 dB or at twelve o'clock. The window size was set to 4096 at 93.75% overlap with the oversampling at 1x. The bin display was set on frequency with the scale at linear. Finally, the y-axis zoom was set to 20 with a frequency window from 20–700 Hz and the x-axis time was set to 60. All examples here show the first 27.5 seconds of each track for a representative sample.

Heaviness in Music Performance

Released in 2015, “The Hills” by Canadian singer The Weeknd exemplifies a strong example of heavy bass sound. In the verse, a scalar synth line and distorted bass accompaniment loop the same C–A-flat–F progression that repeats throughout the entire production. This setting mirrors The Weeknd’s low register and cool delivery, a contrast from his signature falsetto style. Building into a synthesized TR-808 drum beat with steady high-hat subdivision and consistent hand clap on the third beat of each measure, the beat drops out (0:41) to make way for a rising synth tone that mimics the sound of a woman’s high-pitched scream. At this moment, The Weeknd delivers his vocals—“I only call you when it’s half past five”—and the beat rushes back in with a significant low-end bass drop. The impact of the bass is unmistakable and arguably provides the signature aesthetic of the sound, sampled from Tom Raybould’s soundtrack for the film *The Machine* (hardly being changed at all from its original context and resulting in a copyright court claim).⁷⁴ When listening, this bass sound is deep and resonant. With a good subwoofer, the low frequency synth fills the room and sustains a glorious energy of sub-bass bliss that simultaneously attacks and aggravates due to its teleological buildup and quick impact. Interestingly, this drop is not excessively low in pitch. Opening at C2 (65 Hz), the sound is full and undoubtedly heavy without dipping into the “low note” register.

When viewing the peak frequency diagram of this example (Figure 2.2), the entrance of the synth bass is almost impossible to miss. The steady yellow line that

⁷⁴ Ben Sisario, “Suit Claims Weeknd Song Infringes on Copyright of Film Soundtrack,” *The New York Times*, December 10, 2015, sec. Business, <https://www.nytimes.com/2015/12/10/business/media/suit-claims-weeknd-song-infringes-on-copyright-of-film-soundtrack.html>.

appears at the bottom of the spectrum overshadows all other frequency activity in the track, exhibiting a high relative amplitude concentrated at the low fundamental. Looking at the spectrum overlay (figure 2.3), the dominance of this fundamental is confirmed. The peak at around 65 Hz (C2) is well over three times the amplitude of the next overtone just below 200 Hz [the second partial at around a G3 pitch (195 Hz)].⁷⁵ There are other points of intensity in the midrange, but these are likely from the vocal track as this spectrum is not analyzing the bass sound in isolation. One can see that the synth tone exhibits a low spectral centroid due to the pronounced fundamental frequency, exhibiting a much higher relative amplitude than other frequency registers in the track.

By way of contrast, “Funny Thing” is the seventh track from Thundercat’s 2020 album, *It Is What It Is*. A virtuoso electric bass player, Thundercat is known for using his signature Ibanez six-string—an instrument that extends the standard range of the bass in both the low and high register. In this track, Thundercat uses this low range continually and repetitively via a quarter-note thumping line that extends down to a sub-bass C1 (33 Hz) over a two-chord loop. A whole octave below the entrance of the synth bass in “The Hills,” spectral analysis (Figure 2.4) shows a scattering of different peak frequencies from 25 to 300 Hz throughout the song. In general, there lacks significant low frequency density in any one part of the spectrogram. Overall, this data showcases a diminished

⁷⁵ In all the following spectrum diagrams, the amplitude (y axis) is set to a linear scale and not a logarithmic representation of decibels.

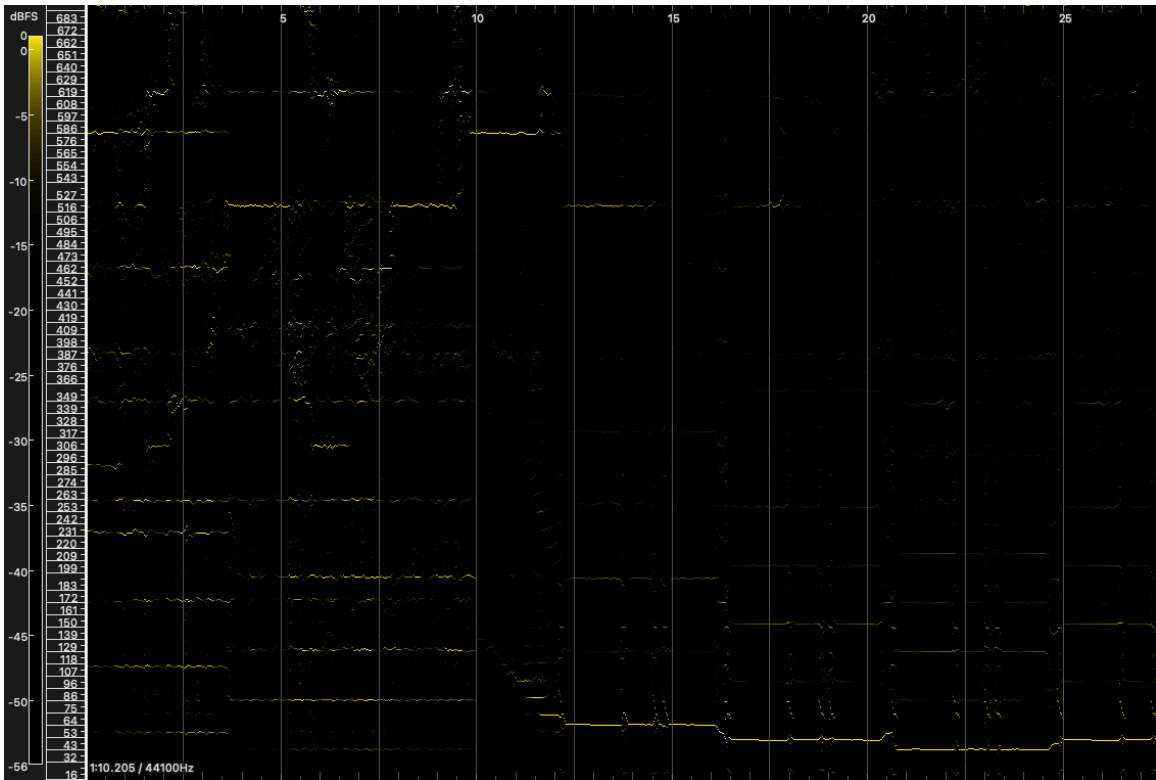


Figure 2.2. Peak Frequency Spectrogram of “The Hills” by The Weeknd

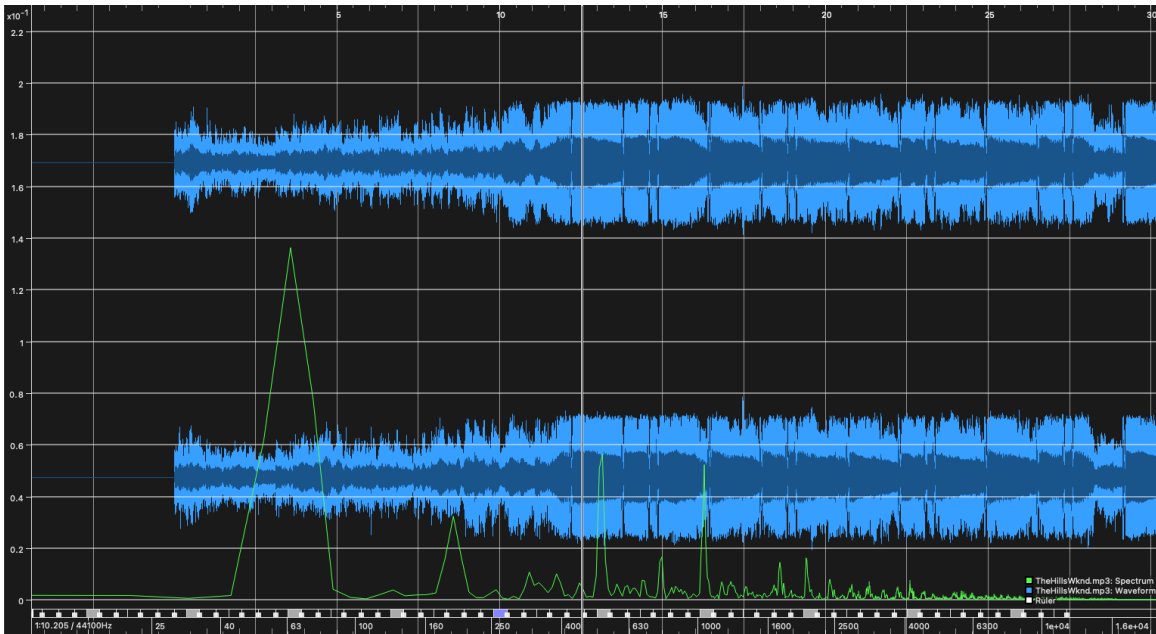


Figure 2.3. Waveform and Spectrum of “The Hills” by The Weeknd at the first bass drop (0:44)

dominance of low fundamentals compared to other frequency elements visible in the spectrogram. This is in part related to the lack of sustained bass notes in the recording but still suggests a comparatively higher spectral center than our previous example. Looking at the spectrum overlay (Figure 2.5), these observations are confirmed: although the low fundamental is still the most prevalent frequency, its shape is less defined as evidenced by the wider base of the fundamental peak. While Thundercat's bass sound does have a somewhat low spectral centroid, the fundamental is not nearly as dominant as The Weeknd example. Consequently, most listeners, including myself, would likely perceive "The Hills" as "heavier" in comparison.

To a familiar ear, Thundercat's bass tone is recognized in this example as exhibiting low pitch compared to his more virtuosic soloing lines that are a signature of his style. In this context, the lack of heaviness is directly related to the artist's aesthetic choices and use of electronic effects. Throughout "Funny Thing," Thundercat's bass sound is modulated by an envelope filter. This makes the bass more melodic and distinct in the general mix. However, this compromises the low-end impact as added upper partials required to produce this tone also have the effect of increasing spectral centroid. In this way, the modulation of the "auto wah" (as it is often described) has similar consequences on spectral redistribution as distortion. In addition, the envelope filter alters Thundercat's attack, which may make the low frequencies less defined as the start of each bass note is softened. In addition, this song has a pronounced kick drum which shares the low-end space with Thundercat's bass, another addition which makes the composite low-end sound more blurred instead of defined by a singular synthesized and held instrument as is the case with "The Hills."

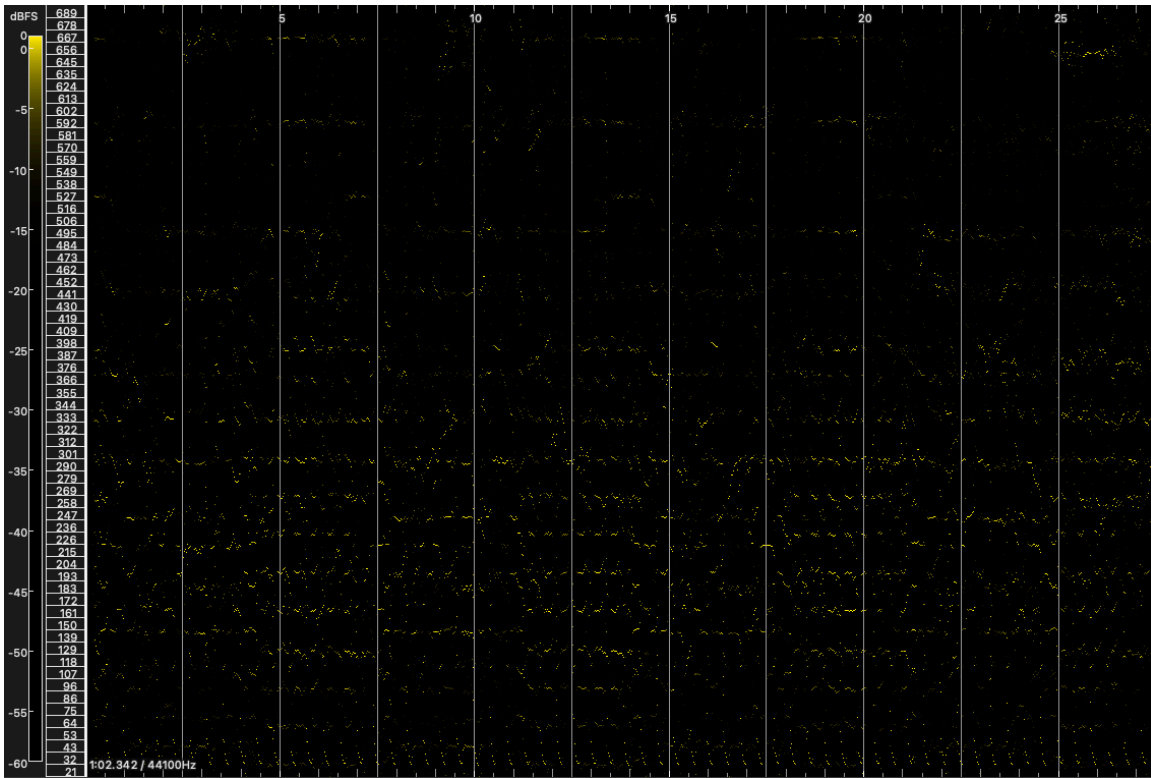


Figure 2.4. Peak Frequency Spectrogram of “Funny Thing” by Thundercat

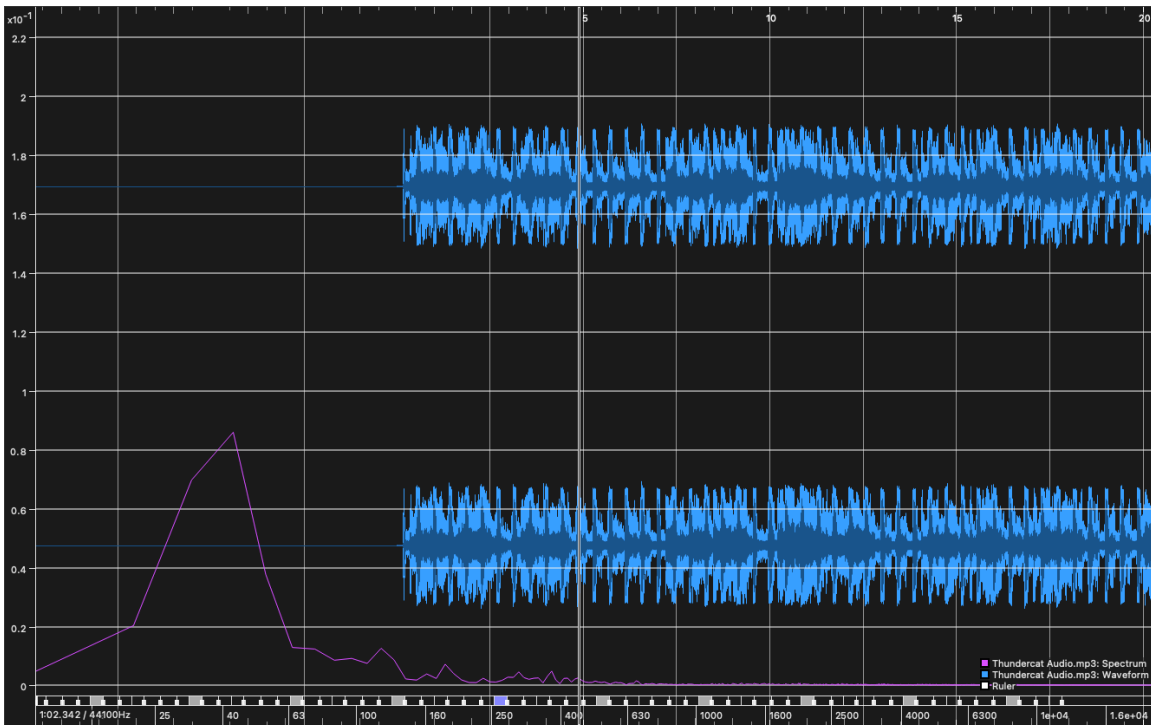


Figure 2.5. Waveform and Spectrum of “Funny Thing” by Thundercat at first low C (0:40)

With comparison of these two examples, I suggest that pitch is not the only deciding factor when analyzing the heaviness of bass sounds. Although far from conclusive, of course, this simple case study highlights important questions regarding how we perceive bass heaviness in popular music contexts, laying the basis to make broader phenomenological claims in later sections of this thesis. Specifically, I argue that the extent of low-end heaviness is a constant balancing act between spectral composite, F0, and amplification. Furthermore, this comparison is significant because it shows how choice of instrument and curation of desired tone can impact the perception of bass sound. Because spectral centroid needs to be low for bass prominence, adding effects like distortion or envelope filters will directly result in a lowering of heavy potential. As Fink notes,

In the final analysis . . . the “sound” of the sub-bass is a timbre of no timbre, a tone whose expressive effect comes largely from that which we cannot hear. In this regard, it is typical of the social phenomena that we generally refer to as tone.⁷⁶

Although Fink does not mention spectral centroid directly, the idea of a “timbre of no timbre” resonates precisely with the fact that heavy bass relies on minimal spectral overtones and clear attack envelopes to create the perception of heaviness, saturation, bass fullness—in other words, “bass dominance.”⁷⁷ At the site of performance this means cutting out upper frequencies that conventionally provide a fingerprint of timbral characteristics and, to put in cultural and social contexts, tone. Accordingly, I claim that heavy bass can be in part actualized by the dialing back of the tone knob on a guitar or

⁷⁶ Fink, 112.

⁷⁷ Bass dominance in the way the Henriques (2011) understands it.

diminishing the presence of added effects in combination with high levels of amplification.

Heaviness in Music Production

In addition to performance, heavy bass can also be bolstered through post-production.

With the rise of digital audio workstations (DAWs), production has become an essential way for many mixers and sound engineers to increase heaviness by cutting, mixing, and filtering sound. An inside perspective into how this can be done is discussed by producer Alec Watson in *Canadian Music*:

As an engineer and listener however, not only do I have an appreciation for an impossibly well-played track, but there is something I love about the pureness of tone and placement that can only be achieved through artificial means. . . . Like building a house, you need to start with a solid foundation—the kick drum and bass. . . . I like to cut each bass note and place it just behind the transient of the kick. This allows the transient and upper harmonics of the kick’s attack to come punching through your speakers before the bass note starts to ring.⁷⁸

For Watson, bass sound is enhanced by manipulating the raw audio recordings of bass guitar and kick drums. By cutting the attack envelope off the front of the electric bass, the kick drum provides the front end of the composite sound while the bass guitar supplies the sustain and a slower decay. Thus, the strong natural attack of the kick complements the natural sustain of the bass guitar. Put another way, the distinctive envelopes of each instrument’s timbres are blended to get an artificially constructed composite of surgically designed heaviness. Of course, this sonic trickery is not used by every producer, and it is certainly not suitable for every situation. However, it evidences the extent of post-

⁷⁸ Alec Watson, “Drum and Bass Mixing,” *Canadian Musician* 27, no. 1 (January 1, 2005): 31–32.

production alterations which have become more numerous in recent years thanks to software development. As previously mentioned, Watson’s account highlights the importance of envelope attacks in bass sounds, adding an element of punchiness to make bass even more prominent in the mix.

Even before DAWs made micro adjustments of attack envelopes possible, post-production effects and mixing were used to increase bass heaviness as early as the 1960s. One of the most notable forms of this can be found in Jamaican dub—remixed recordings crafted by Jamaican audio engineers who originally produced special cuts for certain sound systems (see chapter 2).⁷⁹ During the late 1960s, producers such as Bunny Lee began releasing dub remixes as B sides to the public and by the 1970s King Tubby had established himself as one of the prominent mixing specialists, producing special records for Coxsone Dodd’s Downbeat system. Dub’s echo, delay, and reverb are defining musical characteristics of the style which has been connected semiotically to shared Afrodiasporic experiences and the broader Afrofuturistic cultural aesthetic.⁸⁰ Among these post-production alterations, Tubby was known to change bass and treble levels which aligned with dance sensibilities. Adjusting EQ, Tubby was able to bolster bass and bring clarity to treble instruments.

A well-known example of this approach is Tubby’s dub of Jacob Miller’s “Baby I Love You So” (1974) which was released as the single’s B side: “King Tubby Meets Uptown Rockers.” Comparing the two releases, the dub version sounds slightly heavier and more present in the treble range. The mix “pops” more and the overall soundstage

⁷⁹ Early specials were cut on acetate vinyl and known as “dub plates.” See Veal, 51-55.

⁸⁰ For example, Michael Veal argues that reverb in dub acted as a sonic metaphor for the condition of the diaspora while echo is associated with futurism and memory. See Veal, 198.

seems to be larger compared to the midrange concentration of the original record. Elements like the electric guitar comping are far more backgrounded in the Tubby rendition than in the original recording. Although subtle, this combines into a slightly heavier bass sound on the dub record when compared to the original. Essentially the same record, the two tracks are not completely identical as King Tubby rearranges snippets of the lead melodica and vocals so that they answer each other in call and response instead of doubling, as in the original track. This is typical of dub mixes which were designed to open up vocal space for DJs (Jamaican MCs) to toast (rap) at live dances.

In the following two figures, the spectrogram and spectrum overlays of “Baby I Love You So” (Figure 2.6) is placed beside that of “King Tubby Meets rockers Uptown” (Figure 2.7). In analysis, there are subtle differences in frequency content between 200-350 Hz. In general, the King Tubby example provides much less activity in this register as evidenced by the lack of yellow found against the Miller example where these frequencies are more pronounced. This is because Tubby has reduced the brightness and presence of the rhythmic comping instruments in his production. From about 500 to 700 Hz, the curving outline of the melodica and voice can be seen in the Miller example, but no significant peaks are visible in the Tubby spectrogram. While the difference is slight, both production changes contribute to an overall lower spectral centroid in Tubby’s mix compared to the original recording.

When looking at the isolated spectrums of the bass drop (figures 2.8 and 2.9), it is confirmed that Tubby’s dub has a lower spectral centroid than Miller’s original recording. Specifically, the peak of the fundamental frequency is higher in Tubby’s dub and there is significantly less prominence in subsequent overtones when compared to the

parallel music in the Miller recording. Looking at the waveform itself, Tubby's track shows much more extremities in amplitude peaks which evidences increased amplification. Like "The Hills," this spectral analysis confirms what can be ascertained through listening: disparities in bass heaviness reflected through timbre manipulation.

Conclusions

Throughout this chapter I have explored many facets of bass sound to uncover some of the mystique that circulates around low-end sound. By doing this, I have drawn attention to the problematic pitch centrism that lingers in bass analyses, perpetuating the oversimplification that lowness and loudness equates to heaviness. In this chapter, heaviness has been understood phenomenologically as a complex psychoacoustic phenomenon dependent on a variety of contextual factors. Because of its multidimensionality, I argue that heavy bass is best analyzed by centralizing timbre to supplement amplitude and frequency measurements. In reflection of established psychoacoustic studies, I have homed in on one particular dimension of bass sound—spectral centroid—which I propose plays a critical role in the perception of heaviness that in addition to attack time is manipulated at both the site of performance as well as post-production.

In general, the analysis of bass sound discussed here is still underdeveloped. My attempts are far from a robust methodology where bass frequencies might be analyzed systematically with ample musical examples that cross style and geographic origins. This, as well as an emerging typology of bass tone must be left for future research. Instead, my

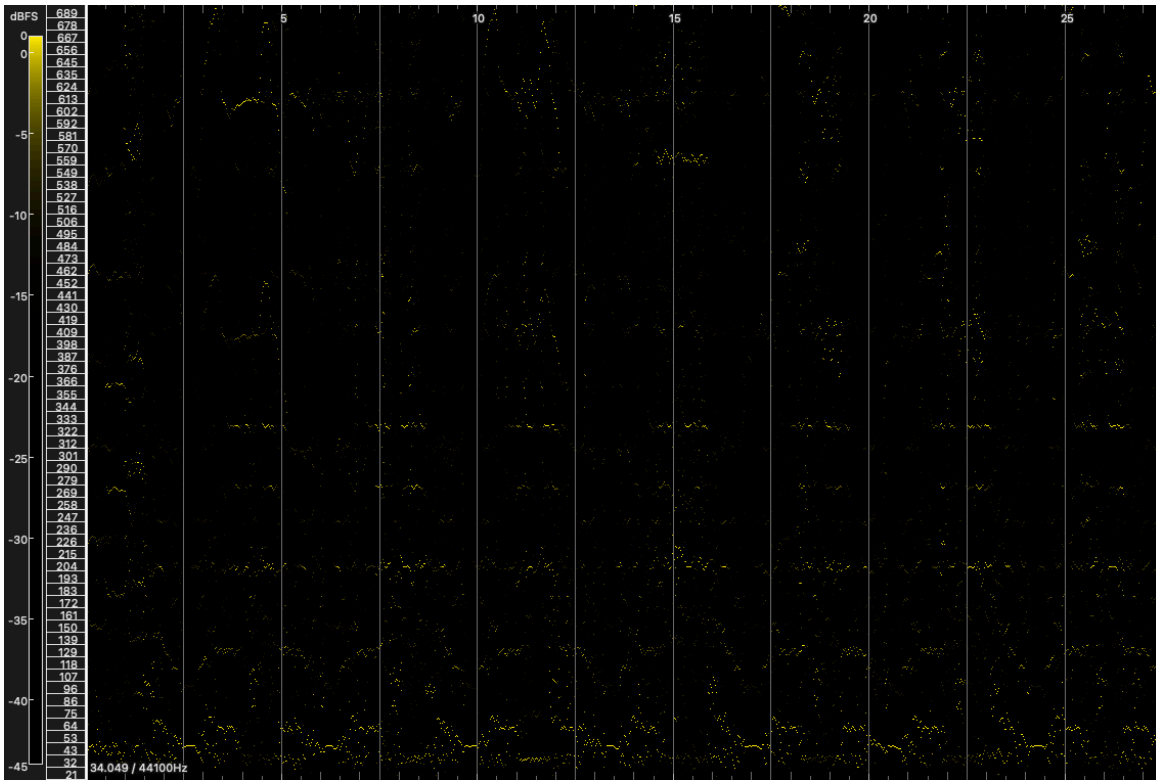


Figure 2.6. Peak Frequency Spectrogram of “Baby I Love You So” by Jacob Miller

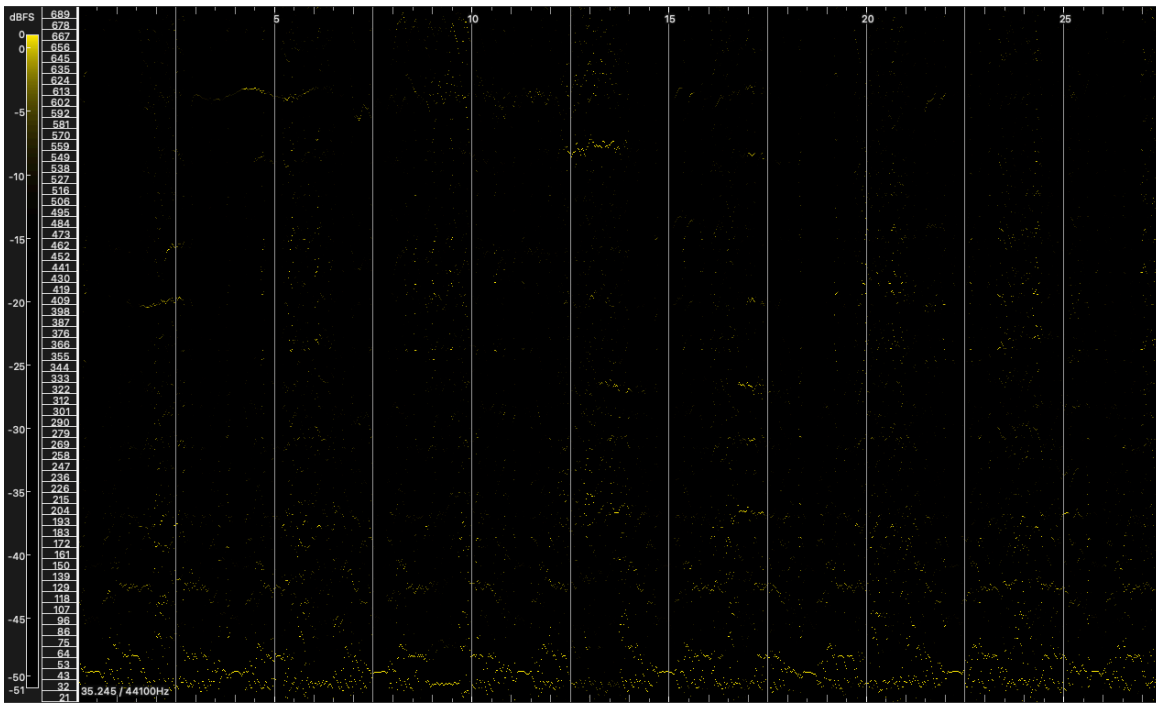


Figure 2.7. Peak Frequency Spectrogram of “King Tubby Meets Rockers Uptown”

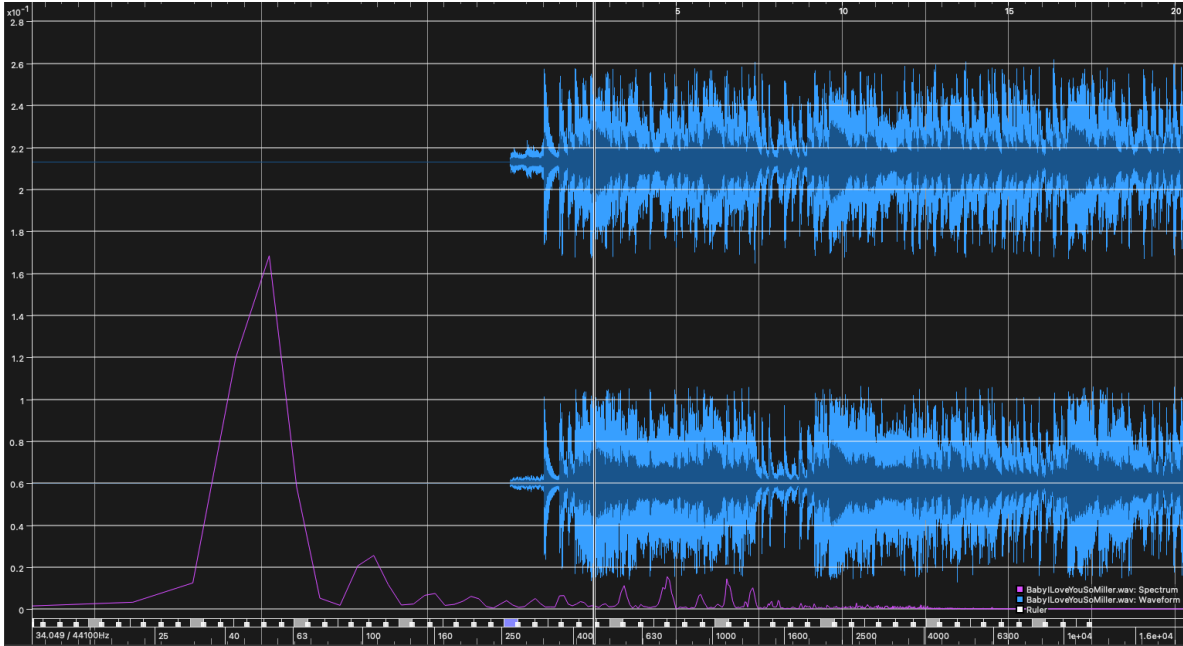


Figure 2.8. Waveform and Spectrum of “Baby I Love You So” by Jacob Miller at the bottom of the bassline phrase (0:03)

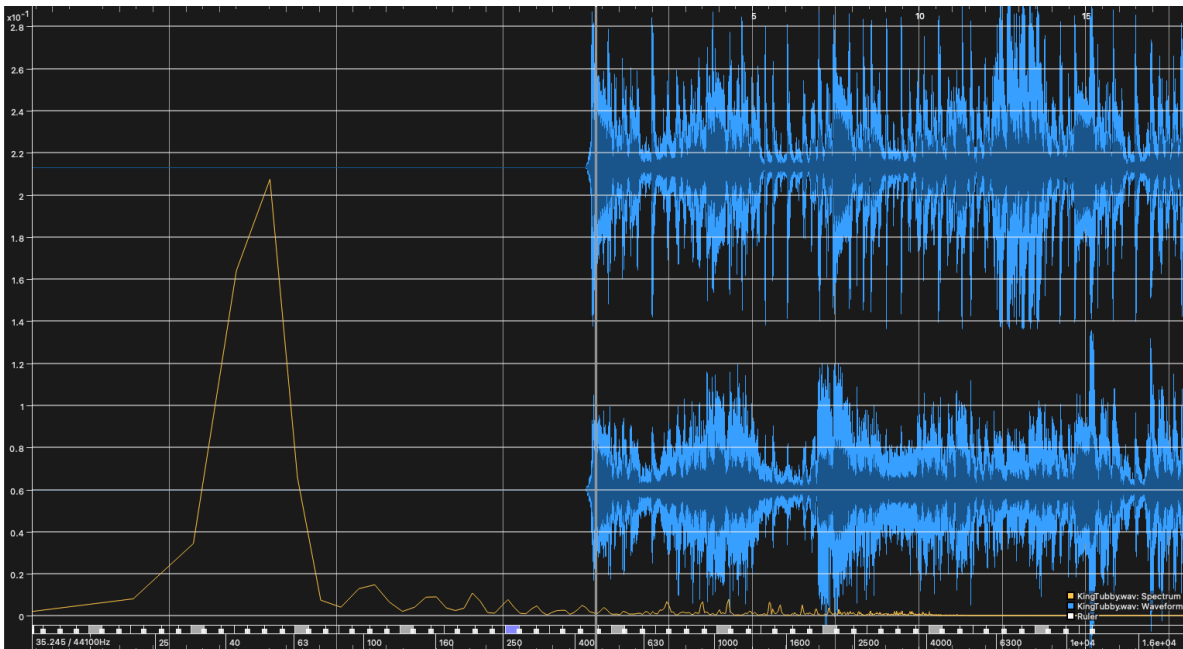


Figure 2.9. Waveform and Spectrum of “King Tubby Meets Rockers Uptown” at the bottom of the opening bassline (0:01)

research and case studies here raise important questions pertaining to bass exceptionalism, signaling that future approaches to bass analysis should consider variables like spectral centroid and attack time in addition to frequency and amplitude within the context of music production and performance. As resonance, saturation, and dominance of bass frequencies become more ubiquitous in popular music, theorizing bass sound becomes integral to understanding musical meaning and sonic perceptions of important and influential musical works. Although spectral analysis of heavy bass is a step in the right direction, it has limitations. Most problematic in this regard is the fact that the construction of heavy bass is at its core a relative and subjective label that only adequately categorizes bass prominence through comparative analysis. Although the conceptualization of heavy bass as timbre is a step in the right direction, future cognitive and empirical research on bass sound is needed provide a fuller picture on spectral/envelop characteristics and listener perceptions.

Overwhelmingly, timbre has been discussed in this chapter as an acoustical phenomenon. However, this is not the only aspect of timbre: timbre also plays a fundamental role in the generation of musical meaning. In the case of heavy bass, semiotics are especially relevant because of the limits involved with sensing low frequencies. As an additional consequence, heavy bass is sonically less diverse than other registers since added overtones (which often contribute to a tone's culturally embedded meaning) are inherently missing by design (as is the case with low spectral centroids). In the next chapter, I consider one important semiotic connection: heavy bass as a sign of Blackness. To do this, bass is situated within the context of Jamaica's early sound

systems and subsequent popular styles of the 50s and 60s which were later codified into the global explosion of reggae during the 1970s.

3. THE JAMAICAN CONTEXT: BASS AND BLACKNESS

In 1940, Hedley Jones appeared on the front cover of Kingston's *Daily Gleaner* showcasing his "automatic" guitar (see figure 3.1).⁸¹ Being a local banjoist, Jones was inspired by the recordings of electric guitarist Charlie Christian which instantly motivated him to get his own electrified instrument.⁸² Unable to afford the revolutionary Gibson ES-150, then priced at \$150 USD (over \$3000 in today's money), Jones took matters into his own hands. As a resourceful radio repairman, Jones painstakingly assembled the electrical components for his guitar from recycled devices: magnets from an old telephone and wiring removed from a busted radio and manufactured the instrument out of local Jamaican mahogany.⁸³ At the time, his invention reflected the cutting edge of music technology. In fact, Les Paul wouldn't develop his own solid-bodied prototype for another year.

To amplify the guitar, Jones found himself in a similar dilemma. In the early '40s, a suitable portable setup with reasonable sound quality and minimal feedback was not commercially available. High-quality radio receivers were up to the task, but they were well out of Jones's budget.⁸⁴ Just like with the guitar, Jones engineered his own

⁸¹ Heather Augustyn, "Pioneer Hedley Jones," *Heather Augustyn* (blog), December 19, 2014, <https://skabook.com/2014/12/19/pioneer-hedley-jones/>.

⁸² *Hedley Jones Talks About the First Electric Guitar*, 2009, https://www.youtube.com/watch?v=SYz1MqeGH_c.

⁸³ *Ibid.*

⁸⁴ Hedley Jones, "The Jones High Fidelity Audio Power Amplifier of 1947," *Caribbean Quarterly* 56, no. 4 (2010): 97–107, 98.

equipment from scratch. After providing for himself, he began supplying local musicians with their own electrified setups, facilitating electric conversions for regional performers like Fitz Collash, Sandy Gully Clarendon, Don Hitchman, Victor Brown, and Gladstone Taylor.⁸⁵ Through these experiences, Jones acquired special techniques related to sound amplification such as winding power transformers. According to his own testament, these practices were not common on the island where very few people knew the ins and outs of audio technology.⁸⁶



AUTOMATIC GUITAR AND ITS MAKER

Mr. H. G. Jones of Kingston who has, after a lot of experimenting, produced the Electric Spanish Guitar he is seen holding in the picture. The principal feature of the guitar is its electro-magnet pick-up which has been made up from a pair of horse-shoe magnets and a number of stove bolts. The sound reproduction of the instrument is very good, as compared with the commercial types of electric Hawaiian guitars, a few of which are in the island. So far, Mr. Jones' guitar is the first of its kind here, and should prove a success as the maker promises to go further into that branch of electricity. Says Mr. Jones: "It's a pity that a few of our talented young men have not the 'push' to make ourselves of some benefit to this our island, but I hope to pursue the line I have started to a real success, provided I get the necessary encouragement to do so—that's in the line of L.S.D.—as these instruments are very costly ones to build."

Figure 3.1. Jones and his electric guitar featured in the *Daily Gleaner*

⁸⁵ Ibid., 98.

⁸⁶ Ibid., 99.

After his stint in the Royal Air Force, Jones opened a small radio repair business alongside fellow RAF veteran Altamont Edwards. At the shop, Jones serviced a variety of electronics including PA systems used at the time by early sound system operators. In those days, PAs were made for vocal reproduction in mind and lacked suitable audio range for musical playback. Although Jones knew that better equipment existed for the early soundmen, Jones was also aware of economic constraints that underlined their enterprises:

I made improvements [to PAs] where possible, but was limited by the original purpose of the equipment plus the speaker limitation. Except to point out these drawbacks, I made no attempt to sell to them ideas that perhaps they could ill afford.⁸⁷

While not in the sound business himself, Jones's influence on sound equipment would quickly become substantial thanks to his venture into record sales.

Known as "Bop City," Jones's record department was adjacent to his radio repair shop where he imported an array of foreign vinyl for local consumption. In post-war Jamaica, radio ownership was a privilege few could afford. As a result, record shops were often the first site where Jamaicans encountered professionally produced recordings.⁸⁸ Thus, if a record sounded low-quality in the store, there was little other incentive for purchasing it. Following this logic, Jones knew that if he could improve the quality of his playback, he would grow his business and get an edge over the local competition. In fulfillment of this goal, Jones recalls his first attempt at a high-quality stereo:

For this my record-selling venture, I needed top-class reproduction, so I immediately imported two eighteen-inch English Celestian bass woofers (speakers) and half a dozen of the twelve-inch, heavy-duty variety. These arrived

⁸⁷ Jones, 103.

⁸⁸ Bradley, 5.

in February 1947. I mounted the woofers in bass reflex cabinets that I had constructed for them and turned to my trusted power amplifier designs to set them alive.⁸⁹

Unintentionally introducing a critical innovation for the future development of Jamaican dance scenes, it did not take long for the neighbors to notice.

Across the street from Jones's radio repair shop was the Jubilee Tile Gardens, a popular lawn where local Jamaicans would gather to dance and enjoy music. One Saturday night in 1947, Jones recalls playing a selection of Perez Prado recordings to demonstrate his "thunder" while unbeknownst to him, Tom Wong, a local soundman, had been contracted to supply music at the Gardens the same evening. During the dance, Jones's setup outclassed Wong's PA rig, pulling the crowd away from the venue and onto the street adjacent to Jones's shop. In local terminology, Wong had been "flopped" or defeated by Jones's system. Determined to get his hands on the superior technology, Wong showed up the next day to buy Jones's setup out from under him. Just as he had done with guitarists, Jones fabricated Wong his own gear:

So, I built that amplifier for Tom. He promptly called it a Sound System. That's where the name derives from: *he* called it a soundsystem. From there on, there was this innovation, the Jamaican Sound System. My third apprentice, Fred Stanford, very witty type of a fellow, he's the one who nicknamed Tom Wong 'Tom the Great Sebastian,' [a nod to the star trapezist the Great Sebastian, from the hugely successful 1952 Cecil B. DeMille movie, *The Greatest Show on Earth*]. Tom was the first legitimate soundsystem.⁹⁰

A rather minute transaction with massive unintended consequences, Jones's distinctive background which combined musical passion, electrical technical knowledge, and clever

⁸⁹ Jones, 104.

⁹⁰ Seb Carayol, "Hedley Jones: The Renaissance Man Who Pioneered Jamaican Soundsystem Culture," Redbull Academy, accessed April 14, 2023, <https://daily.redbullmusicacademy.com/2019/05/hedley-jones-feature>.

inventiveness provided the perfect storm for the foundation of Jamaican sound systems, producing a novel apparatus that would go on to be critical for the development of the island's popular music scene. This directly stimulated the legendary bass culture(s) which erupted from Kingston's dance spaces in the '50s and spread across the Black Atlantic to become a focal point for Afrodiasporic musical practices much beyond the original Jamaican context.

In this chapter, bass culture(s) is situated inside Jamaican music practices with a focus on early popular styles of the post-war era: mento, ska, and rocksteady. This music, along with American R&B, formed the basis of Jamaican sound system repertoire of the '50s and '60s. At this time, bass centrality first emerged as a marked feature of Jamaican dances where music was increasingly sourced via recorded playback as opposed to relying on live bands. By the 1960s, sound system dances or "blues dances," a reflection of the weighty incorporation of R&B records, became central gathering spaces for local Kingstonians. Growing in popularity, they functioned as an important driving force behind a rising local recording industry which first produced records for the sole purpose of supplying new sounds to systems whose operators were having difficulty sourcing appropriate foreign records. As a result, sound system sensibilities, including heavy bass aesthetics, became integral features of local recordings "produced" by sound system

owners.⁹¹ After many years, these practices would culminate into the distinct and familiar “reggae” style of the 1970s.⁹² But already, we are getting ahead of ourselves.

Considering this history, I claim that heavy bass has played a critical role in articulating Black commonality through repetitive musical practices of Jamaican musicking: live dances, communal listening sessions, musical performances, and other activities where music is integrated into social life.⁹³ In general, the intention of the chapter is not to lay claims on Jamaica as a primary or original bass culture(s). Rather, the Jamaican context is presented here as an influential and seminal instance of bass centrality that cemented a strong connection between bass and Blackness—a phenomenon that has since repeated elsewhere in funk, disco, house, techno, and Miami bass, to name just a few. In outlining the strong historical connections between heavy bass and Blackness, this chapter concludes by evaluating the ethical stakes of such an association and how the term bass culture(s) might function to celebrate or contain the notion of Black music—a simultaneously beneficial and dangerous association.

⁹¹ It is important to note that the label “producer” in Jamaican music does not equate to American contexts where this title is always in reference to the artistic director of a recording process. In Jamaica, producers can have a variety of musical influence on recording sessions, ranging from obsession to merely writing the checks. At the very minimum, recordings were at least run by the sound system owners for approval. In any case, it is important to keep in mind that early commercially available records produced in Jamaica reflect years of exclusive sessions where records were cut for the primary purpose of live dance sets that were often exclusively cut on acetate vinyl or “dub plates.” These “specials” became coveted property of certain systems and important firepower when engaging in sound system competition or “clashes.”

⁹² My deployment of quotes around reggae reflects the colloquial use of the term to refer to all Jamaican music genres and doubles to denote the fact that international roots artists like Bob Marley were writing in a music style that reflected local practices that were locally popular on the island in the late 1960s. By the time Bob Marley became popular in the 1970s, early reggae and rocksteady was no longer popular in Jamaica. This is an additional reason I have chosen to focus on the early developments of sound system adjacent styles because of its influence on internationally recognized Jamaican sound. For more on roots reggae see chapter 4 of Steve Barrow and Peter Dalton, *The Rough Guide to Reggae*, 3rd ed., expanded and completely rev. (London: Rough Guides, 2004).

⁹³ In doing this, I am applying Negus’s theory of articulated identity. See Negus, 100.

Identity, Blackness, and the Jamaican Downtown

Identity is never constant or fixed. It is a mutable, hyphenated, and adaptable impression formulated through self-expression or prescribed by society. It is conveyed and reinforced through the deployment of labels such as queer, straight, southern, country, urban, Latin, and Black. In practice, identity can refer to a multiplicity of processes otherwise referred to as self-understanding, connectedness, and categorization.⁹⁴ For most, self-identification is constantly morphing as we age, move, reconnect with memories, and engage in new experiences. This informs commonality or groupness as important experiences bond us to meaningful communities. On the other hand, categorization suggests outside agents engaging in the process of identifying. With categorization the identifier often makes assumptions about self-identity, relying on otherwise arbitrary or superficial traits to create groupings—the exact opposite of self-understanding. Thus, “identity” is a problematic term due to its inherent multiplicity of meanings. As such, it is imperative to be explicit about *how* identity is formulated and *who* these constructions might serve. To reconcile this, an effort has been made to limit the use of the general term “identity” in favor of more precise terminology introduced above.

Identifications rooted in innate physical characteristics prove particularly problematic. As is the case with race, the notion of an inherent or essential character predicated by skin color is deeply engrained in western philosophy but largely rests on

⁹⁴ This terminology has been extracted from the work of Brubaker and Cooper. See Rogers Brubaker and Frederick Cooper, “Beyond ‘Identity,’” *Theory and Society* 29, no. 1 (2000): 1–47.

false conjectures.⁹⁵ Thus, the concept of race is entirely constructed through social practice and social conditioning. To theorize this, Negus's (1996) "expressed" conception of identity provides a useful methodology:

This concerns a shift from *essentialist* ideas about cultural identity—the notion that individuals of a particular social type possess certain essential characteristics and that these are found *expressed* in particular cultural practices—towards the idea that cultural identities are not fixed in any essential way but are actively created through particular communication processes, social practices and 'articulations' within specific circumstances.⁹⁶

In this conception, social practices articulate the formation and perpetual maintenance of groupness instead of categorization being inherent or essential to a certain group. As such, conceptions of "Black identity" and "Black music" must be maintained through social articulations rather than being inherent to certain musical or physical features. Negus confirms this by arguing that "Black music" does not actually imply any inherent musical characteristics (e.g., call and response, improvisation, or bass) although these may be present in many examples and thus have historically informed racialized categorizations of musical style.⁹⁷

One such aesthetic historically theorized as inherent to Black music is full body movement, commonly linked by white writers with danger and overt sexualization. Discussed by Firth (1996), the association of Black music with sensualism is embedded in European ideologies of mind/body dualism and racialized contexts of African primitivism:

⁹⁵ This claim is evidenced by research on the vision impaired. See Osagie K. Obasogie, "Do Blind People See Race? Social, Legal, and Theoretical Considerations," *Law & Society Review* 44, no. 3 (2010): 585–616.

⁹⁶ Negus, 100.

⁹⁷ This can be seen as problematic because it turns an eye from cultural contexts where these characteristics might have implications.

There is, indeed, a long history in Romanticism of defining black culture, specifically African culture, as the body, the other of the bourgeois mind. . . The logic here is *not* that African music (and African-derived musics) are more "physical," more "directly" sexual than European and European-derived musics. Rather, the argument is that because "the African" is more primitive, more "natural" than the European, then African music must be more directly in touch with the body, with unsymbolized and unmediated sensual states and expectations.⁹⁸

As this quote infers, Black or "African music" relates to the body through more than mere physicality; it has been racialized alongside notions of African primitivism.

Therefore, the association between Black identification and primitive or natural aesthetics has conditioned a robust connection between Black music and bodily sensation. As discussed earlier in this thesis, bass is an important musical feature that primes the body for movement. As I suggest, bass is thus an integral aspect of the racialized matrix developed around Blackness in popular music.

In breaking down this racialized industry, seminal authors like Amiri Baraka (1963) and Eileen Southern (1971) pioneered novel approaches to Black music traditions not steeped in white, male biases.⁹⁹ In these works, a new path was forged for engaging with American popular music which contrasted from past practices of white music critics codifying Black aesthetics through racist lenses. Among many things, these works openly acknowledge the history of white performers appropriating Black forms, unveiling a more accurate history of Black experiences in America. Coming from a similar perspective, American composer and musicologist Olly Wilson (1992) outlines a list of

⁹⁸ Simon Frith, "Rhythm: Race, Sex, and the Body," in *Performing Rites: On the Value of Popular Music* (Cambridge, Mass.: First Harvard University Press, 1998), 127.

⁹⁹ Amiri Baraka, *Blues People; Negro Music in White America* (New York: W. Morrow, 1963); Eileen Southern, *The Music of Black Americans: A History* (New York: W.W. Norton & Company, 1971).

six essential qualities of African or Black American music traditions, including his addition of the “heterogeneous sound ideal.”¹⁰⁰ Although his own addition refers to contrasting musical timbres which include treble and bass extremes, it is notable that bass does not make Wilson’s list. In addition to tracking the history of heaviness in Jamaican practices, the connections made here between bass and Blackness functions to broaden the established toolbox of Afrodiasporic aesthetics.

More recently, musicologists have turned to hip-hop to foreground an ongoing discussion of Black identification in popular spaces. In this space, authors like Loren Kajikawa (2015) have provided an increasingly nuanced approach towards “sounding Blackness,” falling in line with a growing progression of rap scholarship that increasingly acknowledges the problems of an essentialized identification based in racial constructions.¹⁰¹ Connecting Blackness with racial authenticity and a “keeping it real” mentality, Kajikawa analyzes Blackness as an important component of commercial success while simultaneously acknowledging that “realness does not mean that one finds homogenous portrayals of racial identity in rap songs.”¹⁰² In response to Ingrid Monson’s warning about categorizing musical features as white or Black in jazz spaces (1995), Kajikawa confirms the continued relevance of Negus’s identity theorization: racial

¹⁰⁰ Olly Wilson, “The Heterogeneous Sound Ideal in African-American Music,” in *Signifyin(g), Santifyin’, and Slam Dunking: A Reader in African-American Expressive Culture*, ed. Gena Dagal Caponi (Amherst: University of Massachusetts Press, 1999), 158.

¹⁰¹ Loren Kajikawa, *Sounding Race in Rap Songs* (Oakland: University of California Press, 2015).

¹⁰² *Ibid.*, 6.

categorization only becomes useful when considering explicit social (and musical) articulations.¹⁰³

In the case of Jamaica, race has long operated as a critical marker of cultural differences, but it functions differently from American contexts. This is most obvious when considering racial demographics. In the US, the 2020 census reports that residents who identify as Black make up 13.2% of the total population.¹⁰⁴ Although Jamaican data from the 2022 census is still not released, data from 2011 confirms that the island's Black population composes 92.1% of the island's residents.¹⁰⁵ Though colorism has long played a role in Jamaican society, class has facilitated the primary social division amongst local communities. In this way, it has become convention to conceive Jamaica as a nation split in two.¹⁰⁶ One half is represented on tourist brochures that depict tropical beaches, sunshine, and waterfalls while the other represents oppression, economic hardship, and gang violence—as Bob Marley memorably put it, a “concrete jungle” erected through colonial slavery of the previous “400 years.”¹⁰⁷ As a result, Jamaican groupness and

¹⁰³ Ingrid Monson, “The Problem with White Hipness: Race, Gender, and Cultural Conceptions in Jazz Historical Discourse,” *Journal of the American Musicological Society* 48, no. 3 (1995): 396–422.

¹⁰⁴ “U.S. Census Bureau QuickFacts: United States,” accessed May 25, 2023, <https://www.census.gov/quickfacts/fact/table/US/PST045222>.

¹⁰⁵ “Jamaica,” in *The World Factbook* (Central Intelligence Agency, May 19, 2023), <https://www.cia.gov/the-world-factbook/countries/jamaica/#people-and-society>.

¹⁰⁶ This portrayal is most evident in Hebdige's (1987) opening of “First Cut” (originally published in 1979). The downtown/uptown divide is featured heavily in an array of other texts on Jamaican culture including Bradley (2001), Veal (2007), and Patton and Smith (2021) to name a few.

¹⁰⁷ These quotes are in reference to Bob Marley and the Wailer's seminal album, *To Catch a Fire*. A breakout record that launched Marley's global career, the work marks a dramatic shift in Jamaican crossover production. Discussed by Dick Hebdige (1987), this record purposefully played up Rastafarian images and Black identity instead of toning down this content down for white audiences—a tactic that was an established convention at the time. In many ways, this album marks the beginning of the roots era and the establishment of a robust connection between Rasta identity and Jamaican music within the context of the global industry. See Hebdige, 80.

categorization is often reduced to a binary scale between the haves and have-nots—a dichotomy that is reflected in many other societies but which has had particular influence in the shaping of local music practices in Jamaican contexts, particularly Kingston. Again, this stratification is not a racial distinction per se even though race and colorism are deeply embedded within Jamaica’s class hierarchy.

Decades after the initial wave of Jamaican urbanization in the 1930s, Kingston became divided by mid-century between its “downtown” (lower-elevation urban areas where poorer, rural originating, and darker-skinned residents live), such as the Trenchtown neighborhood, and “uptown” regions (hillside regions above the urban center where affluent populations with lighter complexions reside).¹⁰⁸ Common labels still used today, downtown/uptown distinctions are often deployed as placeholders for an array of social differences expressed through fashion, lifestyle, and musical taste.¹⁰⁹ Within this dichotomy, the sound system tradition and the subsequent local recording industry is historically tied in with downtown spaces, emerging from impoverished neighborhoods where blues dances flourished and associated recording studios were built. Again, local configurations of “downtown” are fundamentally class designations rather than racialized categories. However, race moves to the fore front of musical identification when Jamaican recordings and musicians crossed borders. This is due to the simple fact that the Island’s musicians are overwhelmingly Black. Although the global identification of Blackness in the case of Jamaican music aligns with local colorism, it is important not to

¹⁰⁸ Veal, 14.

¹⁰⁹ A prevalent theme in modern dancehall, the downtown/uptown split lives on to this day in hits like Valiant’s 2023 track, “Rasta.” In the song’s lyrics, the “uptown girl” becomes a sexualized image. In this context, the uptown categorization doubles to confirm Valliant’s well established “bad boy” reputation for even the privileged, sheltered women (from uptown) “know [he] ah dawg, [he is not] nuh cupid.”

confuse the two. In other words, local downtown groupness is not equivalent with globalized Black identification of reggae, constructions that also aligned in the '60s with an emerging government sponsored nationalism that popularized racialized self-identification. Thus, in the global context the international success of downtown music (reggae) has strongly linked Blackness with bass sound which was first constructed locally as a fundamental aspect of sound system dances. Thus, the early history of heavy bass in local Jamaican musicking is essential for understanding bass's subsequent codification as a symbol of Black categorization, a phenomenon that occurred once reggae became racialized within the larger global industry and detached from the more local downtown/uptown social divisions.

Before the Big Beat Came the Rumba Box

By the 1930s, Kingston had quite the bustling jazz scene. In estimation, around twenty to twenty-five big bands and small combos were active throughout the '30s in the Kingston area, including those lead by Sonny Bradshaw, George Moxy, and Milton McPherson.¹¹⁰ Importing American sheet music, Kingston's scene bred a host of professional jazz artists who were often educated at one of Kingston two music schools: Stony Hill Reformatory School for Boys and Alpha Boys School for Abandoned Children. During the 1940s, the explosion of Jamaican jazz exemplifies the larger trend of urban tastes being influenced by American culture which loomed over the island politically and economically and even

¹¹⁰ Norman C. Stolzoff, *Wake the Town & Tell the People: Dancehall Culture in Jamaica* (Durham and London: Duke University Press, 2000), 35.

dominated the music of local radio at the time.¹¹¹ As such, jazz is often painted as a symbol of uptown aristocracy though notable downtown figures like Coxson Dodd and Hedley Jones were known jazz advocates—hence the name of Jones’s record shop.¹¹² Moreover, the development of jazz performance practices on the island became integral for the future success of Jamaican studio bands like the Satellites, Jets, Supersonics, Maytals, and Upsetters.

In addition to jazz, prewar Jamaica was also home to a thriving folk tradition known as *mento*: the island’s primary popular dance and instrumental style developed throughout the nineteenth and early twentieth century but rooted farther back in the island’s colonial history. Although local recordings were not made until the 1940s, the height of *mento*’s popularity in Jamaica peaked sometime during the early twentieth century. A moderately slow style performed in common time with a pronounced accent on the fourth beat of each measure, *mento* hybridizes African drumming traditions with European folk influence.¹¹³ Within Jamaica, *mento* is associated with rural communities since performances have historically centered around these areas. Often labeled as “country” by local urbanites, rural communities are generally positioned as “backwards” or “strict” compared to urban life in Jamaican contexts. As a result, *mento* simultaneously represents indigenous roots and primitive origins within the Jamaican culture.

¹¹¹ Bradley, 88-89.

¹¹² In fact, some of Coxson Dodd’s first sound sets of the early 1950s included a plethora of jazz records such as works by Charlie Parker, Dizzy Gillespie, and Fatz Navarro. See Bradley, 27.

¹¹³ Olive Lewin, “*Rock It Come Over*”: *The Folk Music of Jamaica* (Kingston, Jamaica: University of the West Indies Press, 2000), 103.

Traditionally, mento is performed for leisure and during celebrations, distinguishing itself from ritual traditions that serve discrete functions within the secretive contexts of the island's various cult communities such as the Maroons, Kumina people, and later, Rastafarianism.¹¹⁴ Stylistically, mento is a vocals-driven song style that relies on chordal accompaniment performed on either the guitar or banjo. In addition, florid melodies are often improvised with the use of a fife or other available instrumentation while rhythmic accompaniment is traditionally performed on a variety of shakers and hand drums. Rounding out the ensemble, the *rumba box* (see Figure 3.2) provides a bass line composed of a broken rhythmic feel that often aligns with the “3” side of a typical clave pattern, otherwise known as the tresillo.¹¹⁵

Known as the marimbula in Latin contexts, the rumba box is an enlarged mbira, a plucked idiophone originating from Africa. The colossal size of the Caribbean variety, compared to the hand or palm sized instrument typical of Zimbabwe origins, makes the rumba box capable of low resonating notes similar to an acoustic bass but with a distinguished metallic attack. Instead of plucking with the thumbs, as is the case with the mbira or kalimba, the rumba box performer uses her index or middle fingers to excite the vibration of the metal tongues while sitting on top of the instrument in similar position to that of playing the cajón. Conventionally, the rumba box's body is constructed out of plywood with a large resonating hole on the front side of the instrument. According to Thompson, the metal tongues were preferably fabricated out of the springs from wind up

¹¹⁴ These styles are drum traditions and thus centralize African influence much more than mento which combines European folk with African sensibilities.

¹¹⁵ Image sourced from Evan Fraser, “Marimbula,” Evan Fraser, accessed May 11, 2023, <https://evanfrasermusic.bandcamp.com/track/marimbula>.

phonograms, but more contemporary constructions source other materials for these components.¹¹⁶ In general, the rumba box has a limited note range that depends on the number of tongues equipped on the instrument. This ranges from two to three on typical Dominican and Haitian varieties to ten or more found on Cuban and Puerto Rican versions.¹¹⁷ In my observations, Jamaican rumba boxes typically have five to seven. On many instruments, the tongues can be pulled in and out of the bridge to adjust the length and change the instrument's pitch. Overall, tuning varies greatly depending on the player and the musical situation. Within folk contexts, harmony is rooted in dominant-tonic relations of a single key center. Thus, in instances like mento it is sufficient to have a tongue for the tonic, dominant, subdominant, and one for the supertonic. Although it is preferable to play songs in keys that align with the "true" bass notes of a specific rumba box, meaning that the box is tuned to the root of the song's harmony, rhythm is much more important than exact pitch. In some instances, the rumba box may be a second or third off from the guitar or banjo's harmony.¹¹⁸

In Jamaica, the rumba box has a long history in mento where its African origins directly link the instrument with African heritage and folk identification. Because mento was a strong influence on the developing Jamaican popular styles, the instrument is an important precedent for Jamaican bass practices writ large. This often flies under the radar because early mento recordings (late '40s) commonly swapped out traditional

¹¹⁶ Donald Thompson, "A New World Mbira: The Caribbean Marimbula," *African Music* 5, no. 4 (1975): 140–48.

¹¹⁷ *Ibid.*, 145.

¹¹⁸ *Ibid.*, 147.

instruments like the rumba box for those employed in jazz ensembles.¹¹⁹ As a result, many mento recordings feature the double bass, drum set, and the occasional saxophone instead of the folk instrumentation described above. In fact, big bands with standard brass and saxophone instrumentation like Byron Lee and the Dragonaires were known to perform mento as they became a mainstay on the north shore tourist circuit (more on them later).



Figure 3.2. A typical marimbula of Cuban origin which can be heard performed by Evan Fraser on “Marimbula” off the album *Organica* (2007).

Recently, the rumba box has made a comeback in Jamaican practices and has even received recent popular exposure in Dez I Boyd’s song, “Rumba Box”—a 2021 finalist in the annual Jamaican Cultural Development Commission (JCDC) song competition. In the accompanying music video, Dez I Boyd introduces the rumba box as

¹¹⁹ I am uncertain if this change in instrumentation was for practical or commercial reasons. It likely involved both.

the island's original bass instrument before the scene cuts to images a traditional mento band playing alongside the pop song's soundtrack in lip-synced fashion (see Figure 3.3).¹²⁰ Instead of acoustic mento music, the song's production features contemporary drum and bass sound with a pronounced banjo accompaniment that exemplifies hybridity between Jamaican reggae and mento styles. In general, the song functions to celebrate Jamaican dance culture with a chorus that describes a woman dancing to a rumba beat. Throughout the production there is a festive tone as the lyrics and video celebrate Jamaican dance traditions.

Much before Dez I Boyd's record, mento and the related style of *calypso* became solidified as important symbols of West Indian identification and connectedness outside of the Caribbean by the 1950s. This was an important precursor for the formulation of Black musical categorization later embodied in terms like bass culture(s). Aesthetically, calypso is very similar to mento, sharing many features with the related but distinct genre. Muddying this division further, Jamaican mento recordings were often marketed as "Jamaican Calypso" due to the Trinidadian style's popularity in US and British markets. For instance, the 1950 compilation titled, "Jamaican Calypso vol. 1 and 2," showcases a mixture of different mento singles released and recorded in the late '40s by Stanley Motta on his MRS label or Ken Khouri with Federal Records.¹²¹ Consisting of

¹²⁰ *Jamaica Festival 2021 Song Finalist - Dez I Boyd "Rumba Box" Music Video.*, 2021, <https://www.youtube.com/watch?v=A8vpZe5EUys>.

¹²¹ Before Federal installed its mastering facility in the early 50s, the first on the island, acetate discs would have to be shipped back to the UK where they would be pressed and released to the British market before being shipped back to Jamaica. It was not uncommon for these masters to be damaged during this journey and thus it was always a toss-up whether the record would be pressed. In general, early studios where these records were cut in the 40s were designed primarily to facilitate live radio and as a result had minimal setups with no capabilities to overdub. This was a drastic change once sound owners built their own studios during the mid to late '50s and early 60s such as Dodd's Studio One which first opened in 1954. See Bradley chapter 2.

simple song structures, I-IV-V harmony, and lighthearted yet coded lyrics, these tapes are rare exemplifications of how mento might have sounded in rural contexts during the early twentieth century. While many of these records never became commercially successful on the international market, they are important examples of early music production coming out of Jamaican studios.



Figure 3.3. Scenes from Dez I Boyd’s “Rumba Box” music video.

Alongside recordings, West Indian musicians were also active outside of the Caribbean, spreading calypso music through live performances. For example, artists like Young Tiger became a notable nighttime entertainer in London during the 1950s where he “adopted the calypsonian’s practice of instant commentary on the rich and famous,” a

common theme amongst Trinidadian calypso lyrics.¹²² Recordings like “I Was There (At the Coronation)” (1953) showcase important expressions of Black experiences living in the “mother” country.¹²³ In this song, Young Tiger explains holding his ground “like a young creole” during Queen Elizabeth’s coronation alongside other diasporic citizens from a range of different colonies. In a call and response chorus, Young Tiger repeatedly pleads that he “was there” in a persistent tone that draws attention to the often-overlooked presence of West Indian immigrants living in London at the height of the British empire.

Overall, mento and calypso were incredibly important forerunners for the development of Jamaican popular styles which increasingly fused American jazz traditions with native folk practices, an already hybridized form of African musical traditions blended with European folk influence. Moreover, the commercial success of calypso provided a critical precedent for local Jamaican production that increasingly catered to international audiences. In mento performance, the rumba box played a foundational role for the presence of bass in Jamaican ensembles even though the substitution of the upright bass has since overshadowed the important legacy of this distinctive Caribbean instrument.

Moving into the era of sound systems, it is important to keep in mind that mento never totally died on the island. Contrary to the claim that sound systems only played American R&B, authors like Stolzoff have made it clear that mento was still an important part of dance life during 1950s Jamaica. Along with jazz records, sound systems would

¹²² Stuart Hall, “Calypso Kings,” in *The Auditory Culture Reader*, ed. Michael Bull and Les Back (New York: Berg, 2003), 419–25, 421.

¹²³ *Young Tiger at the Coronation*, 2012, <https://www.youtube.com/watch?v=lojmNum1kWk>.

often play a “mento suite,” featuring local stars like Lord Fleas, Count Lasher, Papa Motta, and Hubert Porter.¹²⁴ As for bass, the sound systems transformed the limited acoustic output of rumba boxes and string bass into a much more notable low-end presence, birthing a local bass culture(s) known today as dancehall.

Sound Systems Breed Bass Culture(s)

For the crowds that flocked to wherever the big beat boomed out, it was a lively dating agency, a fashion show, and information exchange, a street status parade ground, a political forum, a centre for commerce, and, once the deejays began to chat on the mic about more than their sound systems, their records, their women of their selves, it was the ghetto’s newspaper.

- Lloyd Bradley¹²⁵

During the 1950s, sound system dances served a plethora of social and recreational roles in downtown Kingston. With limited options for other activities due largely to economics, the social centrality of live dance was a far cry from today’s overwhelming entertainment options. For most local Jamaicans, dance venues were the heart and soul of downtown life, making the sound system a critical piece of cultural infrastructure. Because of this, sound system owners became highly influential figures whose celebrity like statuses shaped local culture. In addition, the rise of sound systems as a replacement for live music occurred much earlier in Jamaica than other Caribbean contexts. A trend that is often linked with Hedley Jones’s pioneering amplification achievements, Jamaica’s position at the forefront of new music technologies is a throughline in the

¹²⁴ Stolzoff, 50.

¹²⁵ Bradley, 5.

island's production history. From the quick adoption of the electric bass in rocksteady to postproduction effects in dub by legendary audio engineers such as King Tubby and Scratch Perry, Jamaica's incorporation of technology within musical practice has been historically on the cutting edge of convention.¹²⁶

Tracking key aspects of early sound systems, sociologist Norman C. Stolzoff (2000) provides a thorough ethnographic review on the history of Jamaican dance culture synthesized as "dancehall." In this work, Stolzoff defines the term more broadly than its modern genre connotation in a move that can be read as intending to give modern practices increased cultural status by contextualizing them within the larger history of Jamaican musicking. For Stolzoff, sound systems rose in popularity due to a combination of post-war emigration and the rising tourist industry which lured mento bands and jazz acts away from the capital city and towards the north shore resorts:

the sound systems made dance entertainment widely available to those who were unable to afford it. People no longer depended on the aristocracy of a few trained local musicians to hold a dance with high quality music. Thus, the sound systems first gained popularity in the late 1940s in the virtual absence of live band music. Yet by the mid-1950s, new bands started to form in Kingston, reinvigorating the live music scene that had broken up immediately after the war. Nonetheless, in this short interval, the sound system had all but replaced bands as the primary form of dancehall music-making.¹²⁷

In other words, sound systems were needed to supplement a lack of live bands since musicians were moving elsewhere to pursue both musical and nonmusical opportunities after WWII.

¹²⁶ For more on technology and Black identity within the context of Jamaica musical practices see Louis Chude-Sokei (1997, 2016)

¹²⁷ Stolzoff, 42-43.

Furthermore, sound systems also arose out of economic necessity. Because recorded playback was much cheaper than live bands, sound systems became a lasting staple of Kingston's dance scenes which were unable to compete with the wages supplied to musicians in the tourist industry. Of course, this impact hit differently across downtown and uptown communities who had different financial resources:

The relative lack of lower-class popular entertainment was compounded when the local village bands left their communities to play in the North Coast hotels of Montego Bay and Port Antonio. With the boom in tourism, the cost of hiring a band was out of the ordinary person's reach. Only people from the upper crust could afford to bring in live bands from Kingston three or four times a year to perform at dances held by organizations such as the Policeman's Association or some other social club. In the 1950s, just as in the nineteenth century, it was clearly understood that these affairs were not open to the masses, because people from different classes did not mix at entertainment events.¹²⁸

Hinting at the socially segregated reality of Jamaican culture, Stolzoff highlights the significance of Jamaican class and racial tensions when it came to music and social practices—a situation that resonates with urban areas in the United States where segregation was enacted by law, social practice, or both.

As prefaced earlier, sound system culture became overwhelmingly associated with downtown life. Paraphrasing Clarke (1980), Stolzoff supports the notion that the blues dances were primarily a downtown cultural phenomenon:

The sound system dance...was strictly a downtown phenomenon, which means it attracted Black, lower-class people who lived in ghetto areas. And, if you wanted to hear rhythm and blues you had to go to the dances, because the radio would not play it, preferring to cater to what one critic described as the 'antiseptic tastes' of the uptown crowd.¹²⁹

¹²⁸ Ibid., 45-46.

¹²⁹ Stolzoff paraphrasing Clarke in *Wake the Town and Tell The People*, 49. See Sebastian Clarke, *Jah Music: The Evolution of Popular Jamaican Song* (London: Heinemann Educational Books, 1980).

Connected with the R&B genre and pitted against the uptown community, represented by the absence of R&B on local radio airplay, Clarke's positioning of the sound system is reminiscent of a subcultural reading that places heavy importance on class resistance and the essentialization of musical elements across an otherwise diverse cultural context. As I have already mentioned, R&B was not the only style performed at these dances which often featured jazz and mento records. Likewise, the sound system perpetuated downtown connectedness via repeated performances that offered a sense of community and even doubled as a source of opposition against uptown life. However, it is a bit of a misnomer to equate this with Black self-identification or categorization, which, as stated previously, holds a different meaning outside the island than within.

Among all sonic signifiers of early sound systems, bass stands out as the most salient characteristic in Jamaican dance spaces. In these contexts, the centrality of bass was directly stipulated out of increased competition garnered through *clashing*—the activity of pitting two or more sound systems against each other within a single venue or “yard.” In these environments, music selection and sound quality would influence an audience's evaluation for deciding which system won the competition, “flopping” the other. For Stolzoff, the prevalence of excessive low-end sound was merely a byproduct of the competitive drive to win clashes before record selection became the primary way to flop competitors:

First, they tried to upgrade their equipment to make it more “heavy,” or powerful, so that it could handle the deep bass lines of R&B. Second, they needed new records to keep up with their competitors.¹³⁰

¹³⁰ Stolzoff, 50.

In this view, heavy bass is a rather peripheral aspect of sound systems culture, taking a backseat to culturally and socially centered topics such as the critical role of the “selectah” (similar to a DJ in hip-hop settings but not equivalent) who carefully crafts playlists in order to broadcast culturally relevant themes or bash on the competing system in clashing circumstances. Rather than a quick fad, other authors have been more adamant about the role of bass in sound system culture.

Focusing more specifically on the musical elements of the sound system, Julian Henriques (2011) provides a more direct link between Jamaican “sounds” and the developing bass centrality that emerged from these practices. Engaging in ethnographic research on notable dancehall actors, Henriques’s research (2011) on the crews of Stone Love and Kilimanjaro sound systems illuminates the deeply entrenched significance of excessive low-end energy in Jamaican dance spaces. In fact, bass is so central for Henriques’s understanding of the island’s culture that he prefaces his analysis of Jamaica’s *base* culture as one centered around bass sound:

There are at least two key characteristics of Jamaican auditory culture, one sonic and the other social. On the auditory frequency spectrum, Jamaican auditory culture is a *bass* culture. It is the high volumes, low frequencies—rather than mid or top—and distinctive rhythmic patterning that make Reggae’s auditory vibrations memorable, quickly becoming culturally laden, or ‘fully loaded,’ as would be said. On the Dancehall scene the term ‘massive’ is used for the crowd and their intensive, immersive, visceral experience of *sonic dominance*.¹³¹

For Henriques, bass is far from a trivial matter in sound system settings and instead acts as a defining symbol of cultural and national connectedness. As such, sonic dominance becomes a metonym for Jamaican Black power and a weapon for the dread cause.

¹³¹ Henriques, *Sonic Bodies*, 13.

Described by Henriques as the “connoisseurs of vibration,” Jamaican sound engineers can mostly trace their lineage back to Hedley Jones thanks to a strong apprenticeship tradition that has become the primary avenue for passing down engineering knowledge.¹³² One of the most essential skills learned in this manner is how to perform “compensation,” or tuning, of loudspeakers before each dancehall set. In this process, the output of the system is optimized to the specific acoustic space as dictated explicitly by the engineer’s ears as opposed to scientific instruments. Comprised of procedures too detailed to express in this chapter, the sound engineer’s goal is to balance the mix to his (the engineering position is historically exclusively male) preferences. Locking the EQ switches away to respect the engineer’s labor, Jamaican sound systems traditionally hold the engineer’s tuning as proprietary as Henriques notes, “the ownership of a Sound is indeed the ownership of a *particular* sound.”¹³³ While each engineer has slightly different goals when it comes to compensation, the sound is always a respected component, making up the system’s sonic signature. This propriety is likely rooted in the fact that early engineers needed to perform hardwired changes to the system’s circuitry to alter EQ, a requirement for all setups before 1975 in which electromagnetic parts needed to be physically moved in and out of the circuitry to balance the sound. Of course, today this process is all done with the adjustment of faders and knobs instead of soldering.

Amongst sound system circles, the cultural respect for sonic propriety further evidences the integral role that sound aesthetics, especially heavy bass, has had in the

¹³² Ibid., 65.

¹³³ Ibid., 72.

articulation of commonality amongst Jamaican communities.¹³⁴ For sound systems engineers, bass is so significant that it has traditionally been relegated to its own separate fader which can be boosted as the set progresses while all other levels remain at the same setting established during initial compensation procedures. In tightly contested clashes, bass boosting can make just enough difference to flop the competition as confirmed by Stone Love's engineer, Denton Henry: "him slide the switch and the bass just swell, him win the session because of that, because of the sound *not because of the record*."¹³⁵ Far from a mere byproduct of competition, the engineering ability to boost bass is deeply respected within the Jamaican context and provides a critical competitive edge for sound systems. As a result, bass intensity has slowly increased over decades of sound system practices. Today, bass levels have been pushed to technological limits as sound engineers continue to be vital components of the sound system crew tasked with perpetuating bass extremity.

The Beginnings of Local Records: Early Sound System Music and Ska

By the late '50s, sound systems were going to great lengths to acquire rare or inaccessible records to remain competitive in clashes. As previously mentioned, playing certain prized riddims became an additional sign of sound superiority if other systems were unable to match with the same vinyl or another record with a similarly exclusive reputation. Within this context, exclusivity became heavily tied with street status as special records became

¹³⁴ Ibid., 71.

¹³⁵ Ibid., 86.

a sign of a system's sonic signature. On the quest for exclusive records, sound owners went to great lengths to find rare vinyl. While well-established owners like Duke Reid could afford to book trips to places like Miami to personally flip through 45s in American record shops, soundmen with less financial resources would often make deals with local sailors to provide them with rare finds. Although record stores like Jones's Bob City supplied vinyl to the general Kingston consumer, sound owners would not be caught dead with these easy finds, often viewing them as targeting uptown audiences or casual listeners. In the sound system culture, hard hitting records required a hunt.

Just as engineers would lock away controls and maintain technical specifics within the confines of apprenticeships, sound selectors would keep the title and artists of key tracks closely guarded secrets. Literally tearing away vinyl labels, records would often be named after yard locations or the soundmen themselves to maintain secrecy. For instance, Willis Jackson's "Later for the Gator" was long known in Jamaica as the "Coxsone Hop," (named after the sound owner Coxsone Dodd). Allegedly uncovered by Duke Reid and his Trojan sound system via bribery of some of Coxsone's men, Coxsone's system was flopped when Duke played a slew of his formerly exclusive tracks.¹³⁶ In these contexts, clashes became so heated that close listeners could make money by "cracking" the genuine names of popular riddims, selling the information to competing systems looking to dethrone reigning companies.

Beyond a critical element of clashing culture that played heavily into the formation of sound system identification, the role of the *special* or exclusive record is fundamental to understanding the emerging local recording scene. The shift away from

¹³⁶ Bradley, 41.

relying on foreign records is rooted in the dwindling of local American R&B radio hits that were often distinctively native to southern New Orleans and Miami scenes. As the U.S. popular industry became more centralized because of TV and nationalized radio, hits became less rarified as regional variability dwindled. In addition, R&B sound aesthetics were shifting towards rock sensibilities—a trend that was not favored amongst local Jamaican listeners who instead preferred the “jump style” sound which exhibited less guitar driven rhythms and more classic blues orientations. These dynamics are explained by Dodd himself:

What really gave me the idea that we needed to produce some local recording [was that] at about 1960 the rhythm & blues dried up and in came the rock & roll, but rock & roll wasn't so popular in Jamaica. It never went over. So I figured, more or less, then we'd have to get in the studio and get with that heavy dance beat, you know. So that's how we really thought of doing it.¹³⁷

As a result, Jamaican sound owners were increasingly turning to local recording efforts to continue supplying their ever-hungry dancehall audiences with new hits. An upside to this was that controlling production also meant controlling distribution. Thus, exclusivity could be maintained without the worry of being exposed by other systems.

By the late 1950s, Jamaican produced recordings slowly worked their way into the sound system discography. One of the first local hits to find successful on sound systems was Eric Monty Morris's “Humpty Dumpty” produced by Prince Buster in 1959. Comprised of a slightly slowed down R&B groove with swung eighth notes on the drum set ride, a prominent kick drum on one and three, and a consistent snare backbeat, “Humpty Dumpty's” drum groove is reminiscent of many American recordings like Big Joe Turner's “Honey Hush”—a sound already popular amongst sound system audiences.

¹³⁷ Veal, 29.

Instead of following the established twelve bar blues form, “Humpty Dumpty” deviates but retains much of the same basic harmony, featuring a I-IV-V pattern in C major followed by a IV-I-IV-I-V progression in the same key for the chorus. Opening with a solo saxophone riffing over the verse melody, the first verse recites “There was an Old Woman Who Lived in a Shoe” rhyme while the second verse features the “Humpty Dumpty” rhyme which is repeated in the third verse following a short saxophone solo. The chorus features a repetitive “wohoo” vocal gesture which is followed by backgrounded brass and saxophone hits in a call and response manner. The bass line is composed of a walking pattern on all four beats also reminiscent of many popular American hits of the time. Perhaps most notable in this song is the electric guitar which consistently comps on syncopated off beats. The signature sound of ska, reggae, and most Jamaican popular music today, the offbeat pattern is what most clearly distinguishes “Humpty Dumpty” as a Jamaican record.

In general, the Jamaican offbeat comping is often attributed to developing out of banjo comping found on mento records such as Lord Lebby’s “Sweet Jamaica.” Often mentioned without much musical description, the extent of mento’s influence on the developing Jamaican R&B groove and offbeat comping pattern depends on one’s musical perception and their construction of meter. In Lord Lebby’s “Sweet Jamaica,” it could be argued that the chordal comping occurs on beats two and four if feeling the quarter note at around 160 bpm. However, when aligning the quarter note pulse at half the speed, or around 80 bpm, the rhythmic patter occurs on each offbeat, as is unmistakably heard in “Humpty Dumpty” thanks to the clear placement of the snare backbeat that accentuates beats two and four. In “Sweet Jamaica,” the rumba box is playing a tresillo pattern.

Whether this pattern is split across two bars, implying the 160 bpm tempo, or one measure, implying an 80 bpm tempo, changes how a western performer feels the comping rhythm as “offbeats” or emphasizing beats “two and four.” This subtle but corporeally important distinction is illustrated in the following musical example (Figure 3.4). Because an accent on two and four compared to a steady offbeat depends upon musical orientation, the linkage between the Jamaican offbeat and rhythmic comping in mento is inherently debated.

The figure displays three musical staves illustrating different interpretations of Lord Lebby's "Sweet Jamaica".

- Top Staff (Comping):** Shows two rhythmic patterns. The first pattern, labeled "Bpm 160ish (clave over two bars)", consists of eighth notes with 'x' marks above them, indicating offbeats. The second pattern, labeled "Bpm 80ish (clave over one bar)", consists of quarter notes with 'x' marks above them, indicating accents on the second and fourth beats.
- Middle Staff (Bass Line (Tresillo)):** Shows a rhythmic pattern of eighth notes with 'x' marks above them, representing the Tresillo rhythm.
- Bottom Staff (Comping Accent Reduction):** Shows a rhythmic pattern of eighth notes with 'x' marks above them, representing a reduction of the comping accents.

Figure 3.4. Multiple rhythmic interpretations of Lord Lebby’s “Sweet Jamaica”

Just as the interpretation of rhythmic influence of the Jamaican offbeat depends on listening perspective, so does the interpretation of heavy bass within the context of 1950s and ‘60s era Jamaican recordings. As evidenced earlier in the context of Henriques’s work, bass presence in sound systems as well as most listening devices (see chapter 3) has dramatically increased throughout history. Thus, heavy bass for listeners in the late 1950s is much different than heavy bass today. What I am trying to stress here is that analysis of musical features such as rhythm and bass heaviness must consider the role of perception that inherently informs our categorization of such aesthetics. As a

result, the analysis of bass heaviness must be contextualized and specified just as rhythmic analysis of the Jamaican offbeat must do the same.

In consideration of historicization, I claim that early Jamaican productions do exemplify the extreme terrain of bass sound of the age. Thus, records like “Humpty Dumpty,” which marks the beginnings of the *ska* style, can be considered as catering to bass centrality in the same way that hip-hop or dubstep would to a modern listener. Although it is unlikely that Jamaican ska would be considered a prominent example of heavy bass by modern listeners, the historical precedent of sound system aesthetics suggests otherwise, a disconnect directly related to technological development. Because bass response has increased as production and playback devices has developed overtime, bass heaviness on modern records is incomparable with older productions. This is rooted in easily identifiable limitations. For instance, vinyl can only be encoded with so much low frequency signal before the needle literally skips out of the groove. It was not until the 1970s when this issue was mitigated by developments of the 12-inch single—an era when bass enhancing devices like dbx’s Boom Box were specifically engineered and marketed for enhancing sub-bass playback.¹³⁸

In Jamaica, ska producers and sound owners certainly relied on engineers to boost bass levels of local recordings in live playback just as they had been doing with American imports for years though some would attest that bass is heavier in Jamaican productions themselves. According to some sound system engineers, Jamaican-produced

¹³⁸ For more on the dbx Boom Box see Jens Gerrit Papenburg, “Enhanced Bass: On 1970s Disco Culture’s Listening Devices,” in *Sound as Popular Culture: A Research Companion*, ed. Holger Schulze (Cambridge, Mass.: The MIT Press, 2016), 205–14. For details on the 12-inch vinyl see Hillegonda C. Rietveld, *This Is Our House: House Music, Cultural Spaces, and Technologies*, (Brookfield, Vt.: Ashgate, 1998).

vinyl were indeed encoded with more bass response even if by a slight margin. Explained by Denton Henry, the bass fader became a critical way to adjust a foreign record to a bass-oriented sound in addition to its use in clashes:

I found out it was the recording standard foreigners used to use. And we because we were bass oriented, we used to put a bit more bass on our tunes. So even on a little system that is not so good, you still get a good sound. Foreign ones, when you put them on you don't hear any bass, (they) flat and weak. And that's what propel our music over their music, locally...So what I did I put a compressor and then put an equalizer on the bass, equalize the bass in such a way that if a bass frequency come at a certain level it carries it down. If it comes too low it carry it up. So if you put on a foreign tune you hear a good bass, put on a local tune, hear a good bass. You don't have to keep tweaking your bass.¹³⁹

Just by listening, it is hard to pick up on this nuance in old Jamaican records. Future research on contemporaneous productions during this era might be able to evidence the subtilities expressed by Denton Henry but it is hard to isolate with so many variables. Taking this into consideration, I argue that ska is indeed a bass genre catering to an early bass culture(s) even if perceived bass response on most '60s Jamaican ska records like the Skatalites's *Ska Authentic vol. 2* or The Maytal's *The Sensational Maytals* is nothing to write home about. However, in just a few years this would all change as the 1960s ushered in new abilities of bass prevalence in Jamaican studios.

The Electric Bass and Rocksteady

In 1951, Monk Montgomery debuted Fender's first electric bass in Lionel Hampton's big band. The instrument was a notable success as it provided a strong, penetrating, and supportive sound that did not feedback during amplification thanks to its solid body

¹³⁹ Henriques, *Sonic Bodies*, 70.

design. A completely different instrument from the double bass, the new bass guitar provided a novel way for low sound to be performed in group settings, allowing the instrument to cut through the mix like never before. By the late '50s, the electric bass was widespread in most American popular scenes but was resented in jazz communities where established upright performers saw the instrument as a musical cheat and potential threat to their performance careers.¹⁴⁰ This is due to the comparative ease of playing the electric bass compared to the upright, especially the ability to produce accurate intonation—a much more challenging endeavor on the fretless double bass compared to the machined “precision” of the electric bass guitar (hence Fender’s original name).

In Jamaica, Byron Lee, leader of the Dragonnaires, first brought a Fender Precision to the island around 1960.¹⁴¹ One of the first acts in Jamaica to attempt touring, Byron was looking for ways to make his band more portable. Famously making a lukewarm impression at New York’s 1964 world’s fair, the Dragonnaires were on the periphery of the Kingston scene, making their living as entertainers at north shore tourist destinations instead of in the downtown recording studios that fueled the early dancehalls. Although less influential than studio bands like the Skatalites, it would not take long for the Precision Bass to find itself in the hands of legendary Jamaican bassists like Robbie Shakespeare, Boris Gardiner, and Aston “Family Man” Barrett. In Jamaican studios, local bassists quickly adopted the new instrument during the early and mid '60s and the new electric sound quickly became a marked feature of the emerging style of

¹⁴⁰ Brian F. Wright, “‘A Bastard Instrument’: The Fender Precision Bass, Monk Montgomery, and Jazz in the 1950s,” *Jazz Perspectives* 8, no. 3 (2014): 281–303; See also Brian F. Wright, “Jaco Pastorius, the Electric Bass, and the Struggle for Jazz Credibility,” *Journal of Popular Music Studies* 32, no. 3 (2020): 121–38.

¹⁴¹ Bradley, 157.

rocksteady, a genre that first featured the emergence of active and syncopated bass lines that have since become a mainstay of reggae sound. This marked a drastic shift from the quarter-note based convention of the preceding ska era (see Musical Example 3.5 for examples).

Typically, rocksteady is defined as beginning in 1966 with records like Alton Ellis's single, "Rock Steady" and Hopeton Lewis's track of the following year, "Take it Easy." Authors like Bradley suggest that the stylistic origins of the genre can be traced to the rocksteady dance which was developed a couple years before the emergence of these influential recordings.¹⁴² In general, rocksteady was contemporaneous with the development of American soul by artists like The Impressions, Sam Cooke, and Aretha Franklin during the mid '60s. In fact, a direct connection between the two genres emerged as American artists would frequently tour the island and Jamaican bands began recording soul covers of their records. For instance, The Technique's "Queen Majesty" (1967) and "You Don't Care" (1967) are both renditions of The Impressions's "Minstrel and Queen" (1963) and "You'll Want Me Back" (1963) respectively. Typically, rocksteady is also associated with rising "rudeboy" aesthetics that emerged alongside increasing gang violence in Kingston which was a result of increased tensions between the two primary political factions: Manley's People's National Party versus the Jamaican Labour Party. While rudeboy records such as The Wailing Wailers's "Rude Boy" (1965) and Derrick Morgan's "Tougher Than Rough" (1967) are important anthems for this transitional era, most rocksteady records were rooted in love themes popularized by

¹⁴² For Bradley (2001), rocksteady's slower rhythms and relaxed style can be attributed to numerous things, from just simply wanting change to rising tensions in the dancehall and the unusually hot summer of '66 in which slower tempos were favored because it required less physical effort to dance to.

artists like The Techniques and The Ethiopians. Aside from these details, the most inherent musical distinction between Rocksteady from Ska is the transition from traditional jazz instrumentation to that of a rock band. In this context, the electric bass suddenly emerged as a foregrounded lead instrument, a huge contrast from its backgrounded roll as timekeeper and accompanist.

As any bass player knows, choices in rhythm can have a drastic effect on an ensemble's sense of groove and time. As in jazz and ska, the walking bass line provides an undisputed pulse and grounds other musicians squarely within metered cohesion. In this way, the walking bass is akin to a vanilla flavor—pleasant, safe, and far from insulting. Supplying a needed push to the groove without necessarily interfering with rhythmic elements, the walking bass or simple two beat feel is a safe bet for many styles that might have more active instrumentation or fast paced tempos where complicated syncopated bass playing can easily interfere with the groove and overlaid lead lines, fills, and vocal patterns. This however became less of a concern as the rocksteady era began to strip down in musical instrumentation, removing the presence of accompanying horns, on its slow path towards rhythmic barebones or “the gradual de-emphasis on harmony” which reached an apex with drum and bass aesthetics of dub in the early 1970s.¹⁴³ Armed with a more powerful electric sound and with more musical space, also a result of slower tempos, Jamaican bassists became an unforeseen focal point in rocksteady records where expressive lead playing, sometimes doubled by guitar, brought the new instrument into the limelight.

¹⁴³ For more discussion on drum and bass in Jamaican dub, see Veal, 58.

Specifically, artists like the Jets, Techniques, Ethiopians, Gaylads, and Supersonics were quickly shifting the local sound aesthetic away from driving ska beats and towards the more relaxed and rhythm-centered grooves of rocksteady. An overlooked foundation of reggae, many of the late '60s Jamaican hits are regarded as less original or less Jamaican compared to the roots era because rocksteady songs were often covers of American and British records. This was likely not because of a lack in Jamaican

Hopeton Lewis- "Take it Easy" (1967)

The Ethiopians- "Engine 54" (1968)

The Techniques- "Queen Majesty" (1967)

Tommy McCook and The Supersonics- "Flying Home" (1968)

Figure 3.5. A Selection of Notated Bass Lines from the Rocksteady Era

creativity but rather reflected artists pursuing commercial crossover success. Still, rocksteady's sound was maintained as closely connected with downtown identification

just as the preceding ska style had done through repeated articulations of live clashes and dancehall celebrations. Even more rooted in Jamaican folk and African heritage, the syncopated bass lines of rocksteady more closely resemble the aesthetic of tresillo based lines prevalent in mento compared with the walking lines of ska. Furthermore, the intertextuality with soul facilitated an even stronger connection between the style of rocksteady and local configurations of Black self-identification which again were emerging alongside national independence and decolonization.¹⁴⁴ Instead of reggae and dub, it was Rocksteady where bass centrality first emerged as a performative musical style as well as in listening experiences of sound system spaces centralized around downtown communities.

Conclusions

I have demonstrated through an overview of early Jamaican popular musics that heavy bass aesthetics have long been a critical component of local downtown (self)-identification and connectedness. Even before the technological pioneering of Hedley Jones, bass sound was a foundational component of folk traditions with the rumba box. Merging mento influence with jazz performance and R&B aesthetics, ska became the first local style specifically produced for Jamaican blues dances where competitive clashes instilled a culture of proprietary sound. After the electric bass was introduced to

¹⁴⁴ It is worth noting here that Anne Danielsen (2006) acknowledges a disconnect between funk music and Black identification in her own experiences growing up in Scandinavian. This again highlights the fallacy of understanding certain musical features as inherently Black or white. Writing primarily about rhythm, it is also relevant that Danielsen argues funk is not “primarily about bass,” stressing that a complex or syncopated bassline is not necessary for a classic funk sound (61). See Anne Danielsen, *Presence and Pleasure: The Funk Grooves of James Brown and Parliament*, Music/Culture (Middletown, Conn.: Wesleyan University Press, 2006).

local musicians, the style of rocksteady emerged with the bass instrument being thrust into the musical foreground as it suddenly played melodic, syncopated lines instead of quarter note accompanying pulses. This heralds back to tresillo patterns of mento as rocksteady lines first codified virtuosic bass performance practices in Jamaica as later developed in reggae.

In general, my focus on early Jamaican popular music is an effort to ground bass culture(s) within a historical tradition, but also showcases the importance of historicizing a perception of heavy bass sound. In general, heavy bass is expressed within the context of live spaces and through minute differences in sound system design. As a result, it is not easily decoded through musical analysis. In other words, bass lives in the multidimensional details of performance, production specifics, and live sound as outlined in chapter 1. Thus, heavy bass has functioned as a dark underside to the Jamaican offbeat when discussing the island's popular music categorization. To this point, I argue that the formative years of ska and rocksteady are crucial eras for the development of both these defining aesthetics even though from a modern perspective this conclusion is more challenging to make in the case of bass heaviness.

More broadly, the Jamaica context represents a seminal instance in bass culture(s), but it is not a definitive origin of bass music as evidenced by the web of influences and creolized nature of local Jamaican traditions that are both native and foreign in origin. This mirrors the concluding remarks of Font-Navarette's (2015) attempt to pinpoint the origin of bass music in Black Miami neighborhoods in the 1980s as he writes, "in the absence of a clear center of definitive origin, we might be left with nothing

more than a flood of trivial, short-lived musical fads and overblown theorization.”¹⁴⁵ In partial agreement with this assessment, it must be stressed that defining a history of bass culture(s) is by default a hopelessly fraught endeavor. Rather, the value of Jamaica traditions are in the formulation of heavy bass as a sign of Blackness through deeply rooted practices of bass centrality that have emerged through repetitive articulations of dancehall performances—performances which are not limited to the Jamaican island itself but have been historically prevalent throughout Afrodiasporic communities in places like the US and the UK.¹⁴⁶ A notable example of this is of course Clive Campbell (DJ Kool Herc) who emigrated from Jamaica to South Bronx in 1967 and became a seminal actor for the subsequent development of hip-hop. In sum, the Jamaica context gives us a singular, yet highly influential look into the complex process of identification formation within the context of bass sound—a process that has extended from local traditions to the broader global setting and overlapped multiple generations. Of course, conceptions of race are very different in Jamaica than they are in the UK and America. However, because dancehall traditions, ripe with heavy bass aesthetics, have been maintained in these contexts, so too has its strong association with Black connectedness and categorization.

For many, the notion of bass culture(s) and bass sound as sonic symbols of Blackness are important sources for connecting with heritage and reaffirming self-identification. As stated in the introduction, bass culture *is* Black music for Mykaell Riley

¹⁴⁵ David Font-Navarette, “Bass 101: Miami, Rio, and the Global Music South,” *Journal of Popular Music Studies* 27, no. 4 (2015): 488–517.

¹⁴⁶ As evidenced in Riley (2016).

who was able to affirm his Black heritage through Afrodiasporic musical practice. However, categorization can also function to stigmatize as much as unite. In terms of heavy bass and Blackness, this materializes in potential stereotyping that often goes hand in hand with a notion of impoverished beats played by dangerous or criminal Black men. It is no secret that heavy bass in the context of blasting car stereos functions as a trigger for white bodies on the guard against hazardous Black individuals. In fact, this is not a hypothetical. The 2012 killing of Jordan Davis showcases the real danger that can emanate from debates over “thug music” and “rap crap.”¹⁴⁷ A tragic murder motivated by bigoted racism, the equation of bass and Blackness has a dark side rooted in stereotypes and white fear. This comes out in the deployment of bass culture(s) which can be used to *contain* as well as celebrate Black expression.

Especially relevant for those socialized outside of Afrodiasporic spaces, familiarity with historical formations of heavy bass as a sign of Blackness can be used to improve allyship, solidarity, and awareness of Black causes. Conversely, a passive approach to these histories may lead to cultural ignorance and the perpetuation of systemically racialized practices. I am not suggesting that white people stray away from the distinctive joys of heavy bass experiences and the production of sub-bass sound in popular contexts. Rather, I propose that heavy bass should be acknowledged as an articulated sign of Black consciousness and celebrated as a community forming phenomenon instead of being deployed as a dominating or dangerous weapon. This is becoming increasingly important as heavy bass sounds are gaining ubiquity in all

¹⁴⁷ See William Cheng, “Black Noise, White Ears: Resilience, Rap, and the Killing of Jordan Davis,” *Current Musicology*, no. 102 (April 1, 2018).

listening environments. Even in mobile environments (the subject of the next chapter), heavy bass has become an expectation rather than an exception.

4. UBIQUITOUS BASS: HOW BEATS HEADPHONES

CHANGED MOBILE LISTENING

The Walkman represents parasitic and/or symbiotic self which has now become autonomous and mobile.

– Shuhei Hosokawa¹⁴⁸

The technology of the iPod privileges private life, enhancing the conception of the consumer as an “isolated subject.”

– Michael Bull¹⁴⁹

[The Walkman and iPod] are not unrelated: they bespeak a series of experiences that connect mobilized spaces—which can be as ‘small’ as ones’ own headspace—to domestic spaces. The smooth, nearly seamless continuity between the home and the vehicle (or between the home and the mediatized ambulation away from home) is perhaps one of the momentous changes wrought by mobilization.

– Sumanth Gopinath and Jason Stanyek¹⁵⁰

Convenience, accessibility, flexibility, personalization, isolation, domestication—these are just a few of many concepts related to the omnipresence of portable electronics. For most, mobile technologies have become a necessity for daily functioning, serving a variety of needs from record player to personal assistant. Whether staying in touch with loved ones or binging the latest Tik Tok trend, mobile technologies supply a range of sonic and visual experiences that can connect us, isolate us, and allow us to remember or

¹⁴⁸ Hosokawa, 166.

¹⁴⁹ Bull, 8.

¹⁵⁰ Sumanth Gopinath and Jason Stanyek, “The Mobilization of Performance: An Introduction to the Aesthetics of Mobile Music,” in *The Oxford Handbook of Mobile Music Studies*, vol. 2 (New York: Oxford University Press, 2014), 1–39, 4.

forget. Like never before, an endless stream of online media is now accessible at the flick of a finger. In these scenarios, portable electronics have become default tools for accessing information.

Throughout the 2010s and into the early 2020s, mobile audio devices (MADs) have made significant technological strides, making high-fidelity sound accessible for most consumers. As such, bass response has dramatically increased in these products, an impressive feat in audio engineering given these device's small drivers and minimal amplification power. An experience that was previously exclusive to club environments and live venues with expensive, professional-grade sound systems, head thumping sub-bass can now be contained between our ears almost as much as it propels us on the dancefloor. Consequently, it is now easier than ever to rattle your ears off with the latest dancehall riddim or slip into a trance via sub-bass drones wherever or whenever you might be in the mood. A low-end revolution like never before, this is the new normal of listening, what I term *ubiquitous bass*.

In music scholarship, the term “ubiquitous listening” has been theorized by Anahid Kassaibian to outline the popular convention of music listening that functions in the background of our lives rather than receiving undivided attention:

Ubiquitous Listening is about the listening that fills our days, rather than any of the listenings we routinely presume in musicology, sociology, media studies, and elsewhere. The problem I am addressing is not a disciplinary one—it crosses fields and disciplines blithely. How do we listen to the music we hear everywhere, and how does that listening engage us and activate the world we move in?¹⁵¹

Here Kassaibian seeks to restructure how music is researched in popular contexts, arguing that the ubiquitous listening is a phenomenon where conventional music theory and

¹⁵¹ Kassaibian, 11.

musicological methods of analysis fall short because music is not being listened to as a narrative or with close attention, an assumption in these fields. Rather than a passive experience, however, Kassabian asserts that ubiquitous listening stimulates an array of emotional responses, though not through traditional avenues. Consequently, attention must be understood as a spectrum that ranges in quantity and quality; thus, certain types of media facilitate attention in a variety of ways which may be preferred by certain listener types or listening situations. For instance, heavy bass grabs a listener very differently from the development section of a symphony or the wordplay of a folk song. In consideration of this work, my adoption of the term “ubiquitous” doubles as a comment on *how* heavy bass music is consumed, as well as its omnipresence.

In general, the discussion of bass in MADs is often relegated to the periphery of bass research. In the current literature, professional, live music settings have dominated the discourse.¹⁵² This makes sense as subwoofers have long been a necessity for producing adequate low-end frequencies due to the limitations of physics and psychoacoustics (see chapter 1). As such, the subwoofer has been delegated as the primary instrument of heavy bass sound. In pushing beyond the typical scope of bass research, my exploration of ubiquitous bass in MADs raises important questions regarding the commercialization of bass culture(s), challenging the historical notion that low frequency sound functions as a commodity of scarcity rather than one of excess or abundance. That is, bass has always been a rare commodity—one that requires specialized and often expensive access and gear. As we collectively move forward in the

¹⁵² For instance, works like Henriques (2011) and Goodman (2010) do not mention mobile technologies in the context of bass frequencies while more recent research by Jasen (2016) acknowledges the growing presence of low-end sound in mobile devices but relegates this discussion to his Epilogue.

digital age, the growing ubiquity of bass is shifting the discussion of the low end from questions of bass quantity to those of sonic quality. As any music producer would claim, the two are intrinsically connected in the realm of low sound. To reign in this chapter's scope, I will be looking at the quantity or response of bass sound in playback instruments. As such, I contend that loudspeakers and MADs function as prerequisites for heavy bass experiences. If the playback device is incapable of adequate bass response, the phenomenon of heaviness will be absent in the listening experience regardless of how well a track is mixed or mastered.¹⁵³ Additionally, the idea of ubiquitous bass brings new concerns to the special or intangible quality of low-end sound that has been mystified in club environments, weaponized in the context of warfare, or cultivated as a numinous device in traditional settings.¹⁵⁴ This poses an important question: is the shift from bass scarcity to bass ubiquity numbing our perceptual responses to bass sound? Or, is it merely reestablishing our concept of heavy bass in more extreme sonic terrains? Furthermore, what are the consequences of a virtual bass environment especially given the connection between bass and Blackness?

In tracking these postulations, I present a case study of Beats by Dre, a seminal product from the late 2000s and early 2010s that marks a pivotal point in the consumer audio industry. Like never before, Beats promoted high quality mobile sound to everyday, non-professional users instead of studio producers and audiophile enthusiasts

¹⁵³ I say this with slight hesitation as it has been theorized that fundamental frequencies can be perceived through imagined sound in the mind of listeners. This is the timbral phenomenon of the missing fundamental. Discussed in the context of “treble culture” by Wayne Marshall, imagined bass has also been proposed to get around the limitations of small drivers as facilitated through the virtual bass system or VBS discussed by Mu et al. Marshall, 58; Hao Mu, Woon-Seng Gan, and Ee-Leng Tan, “An Objective Analysis Method for Perceptual Quality of a Virtual Bass System,” *IEEE/ACM Transactions on Audio, Speech and Language Processing* 23, no. 5 (May 1, 2015): 840–50.

¹⁵⁴ Referring here to the work of Henriques (2011), Goodman (2010), and Jasen (2016) respectively.

who traditionally make up the core market of high-priced headphones. In doing this, Beats commercialized bass response as a sign of “high-fidelity,” sonic marketing that was subsequently adopted by many audio manufacturers seeking to cash in on the expanding consumer base. Thus, the headphone company marks an important historical departure from the ubiquitous usage of trebly earbuds provided by Apple and Sony packaged with the purchase of a mobile music player like the Walkman or iPod.

To begin this chapter, I unpack the concept of “high-fidelity” (hi-fi) and highlight some important technical aspects of audio reproduction necessary for understanding my mixed qualitative and quantitative methodology. After this, I discuss the trebly nature of low-quality MADs that were originally made popular with the release of Sony’s Walkman in 1979 and the iPod in 2001. Next, I provide an abridged history of the Beats brand (launched in 2008), analyzing a selection of the product’s commercial advertisements to argue that the company’s marketing strategies specifically targeted “basshead” listeners. I then pivot to exploring sonic characteristics in recent MADs to provide further evidence for bass ubiquity in the rapidly developing industry. Finally, I conclude by evaluating ubiquitous bass within the broader context of bass culture(s) and the economy of heavy bass sound.

Frequency Response 101

Technical specifications of MAD products are critically important for obtaining detailed information on a device’s technological capabilities. This data provides a valuable tool for making direct comparisons between similar designs, and, unlike human perception,

these measurements are not subject to listener bias. However, they still have limitations. For instance, frequency response has a history of being manipulated and misrepresented by audio manufacturers.¹⁵⁵ This has misled consumers and made it imperative for reviewers to run their own tests.¹⁵⁶ In addition, data measurements are susceptible to error and are often recorded differently depending on the microphone equipment and collection methods.¹⁵⁷ This has led to additional confusion and limited the ability to make direct comparisons between devices. Even more, audio data cannot describe many of the intangible aspects of perceived sound which often provide important distinctions between MADs. While the exact details of these specifications and methods are much out of this chapter's scope, they are important to preface before relying on these data for substantial evidence.

As just mentioned, the most important technical specification for MADs is *frequency response*, the measurement of a device's sound reproduction across the 20Hz–20kHz spectrum. It is standard to visualize this data on a graph where the horizontal (x) axis measures frequency and the vertical (y) axis measures loudness in decibels. Theoretically, the frequency response of a perfectly transparent device would result in a horizontal line, meaning that every amplitude of all the frequencies fed into the MAD

¹⁵⁵ See Paul Dicomio, "Understanding Speaker Frequency Response," In Sheeps Clothing, August 30, 2022, <https://insheepsclathinghifi.com/understanding-speaker-frequency-response/>.

¹⁵⁶ See *Audiophile Headphones: For Beginners!*, 2021, <https://www.youtube.com/watch?v=hoLMdrD5pic>.

¹⁵⁷ For instance, when measuring bass in headphones, the seal between the HMS (head measurement systems) and the product's pads may be very different from actual human skin. This results in unrepresentative data because a product's seal has a lot to do with bass resonance. As such, some measurers (like RTINGS.com) use actual humans (in combination with microphone gear) in their product tests. See "Raw Frequency Response," RTINGS.com, accessed April 19, 2023, <https://www.rtings.com/headphones/tests/sound-quality/raw-frequency-response>.

were measured as exactly the same by the microphone recording the physical soundwaves of the device's audio playback.¹⁵⁸ Within the industry, this is called “flat” tuning. Of course, no product is perfect. Every MAD and loudspeaker will alter or “color” the sound due to technical limitations. In product development, frequency response is “tuned” to take into consideration these shortfalls and to produce a sound profile that the manufacturer is seeking. Thus, tuning can target a specific type of user or reflect practical considerations such as employing a flat response for studio and mixing use. In this way, frequency response is akin to a device's sonic fingerprint and reflects how the product developer is designing the device within the constraints of the driver's capabilities.

To give an example, the frequency response data shown in Figure 4.1 displays multiple measurements of the left cup on a pair of Audio Technica ATH-M50x headphones.¹⁵⁹ In this case, the Audio Technica's display a relatively flat tuning with a drop in the low-mids and boosted high-bass that extends to about 40 Hz before dropping off slowly down to 20 Hz. A “full-fidelity” product designed for studio use, the bass response in these headphones is present but not boosted to extremes with a slight drop in the sub-bass region which is subtle enough to make minimal perceptual difference. In addition to the measured results and averaged composite, the graph also includes a “target curve” illustrated with the use of a dotted orange line. This line shows a potential ideal tuning that would be optimized most listener experiences. Informed by psychoacoustics

¹⁵⁸ Typically, pink noise or an equivalent will be used to test these products since the static noise has equal frequency content throughout the whole frequency spectrum. The choice of test sound is another potential variable in collecting this data.

¹⁵⁹ “Raw Frequency Response,” RTINGS.com, accessed April 24, 2023, <https://www.rtings.com/headphones/tests/sound-quality/raw-frequency-response>.

and general human taste, target curves have become important for audio manufacturers making informed decisions regarding tuning choices. However, targets also oversimplify the huge variance in listening preferences. Rather than an objective indicator of good sound, they provide an averaging of different listener tastes.

Seeking to update the target curve for the headphone industry, senior research fellow at Harmon International and president of the audio engineering society, Sean Olive and colleagues (2022, 2019) have assessed the perception of headphone quality through empirical studies.¹⁶⁰ In a 2015 experiment, Olive and Welti test how participants alter treble and bass controls to personal taste. They conducted the experiment on 283 listeners from Canada, United States, Germany, and China who represented a variety of ages, listening experiences, and gender. Each participant was exposed to several different styles of music in which they would alter the treble and bass controls to whatever level they preferred. The results were then analyzed through different demographic lenses. Overall, the study found that, on average, male listeners prefer more bass and treble than female listeners and that younger and/or less experienced listeners value higher levels of bass and treble compared to more experienced and older participants.¹⁶¹ Olive's findings as published in his 2022 article are visualized in Figure 4.2.¹⁶² In discussion of this data, Olive confirms that there is likely no standard target curve to appease every headphone

¹⁶⁰ Sean E. Olive, "The Perception and Measurement of Headphone Sound Quality: What Do Listeners Prefer?," *Acoustics Today* 18, no. 1 (2022): 58–67; Sean E. Olive, Todd Welti, and Omid Khonsariopour, "The Perception and Measurement of Headphone Sound Quality," *The Journal of the Acoustical Society of America* 146, no. 4 (2019): 2815–2815.

¹⁶¹ Olive, "The Perception and Measurement of Headphone Sound Quality," (2022), 61-62. It's worth noting that Olive included only participants with reported normal hearing abilities but that there was no systematic control of this variable discussed in the research methods.

¹⁶² *Ibid.*, 62.

listener given the fact that frequency response systematically varies depending on age, gender, and listening experience. Notable in Olive’s results is the fact that every group boosted bass and diminished treble during their tests, suggesting that boosted bass is a general preference across all listeners. However, this also aligns with the general nature of human auditory perception: bass frequencies are overall harder for people to hear (see chapter 1).

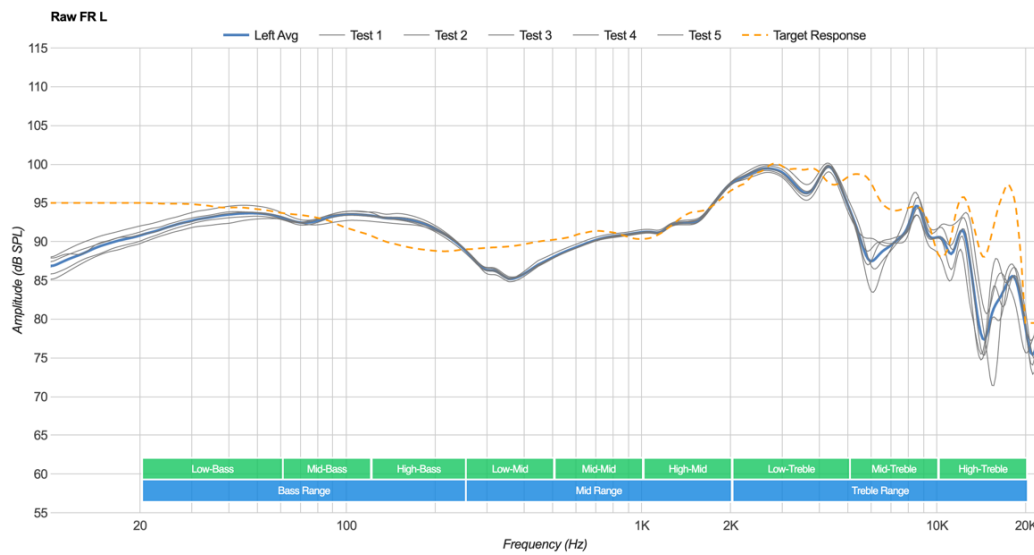


Figure 4.1. Frequency Response for the left channel of Audio Technica’s ATH-M50x

Widely speaking, frequency response is an indispensable tool for pinpointing audio performance details, but it only tells part of the sonic story. In addition to this data, actual listener reports reveal vital pieces of information even though they are all inherently biased towards personal preference which includes a host of demographic variables as well as individual differences in music taste and perceptual response. As such, my methodology in this chapter attempts to balance qualitative description with frequency response data. To limit error, I rely on data measurements from RTINGS.com, a relatively authoritative, independent, non-manufacturer consumer review resource.

Unlike other platforms, RTINGS.com buys their own test products through a third party and focuses on data-driven reviews. As such, their online databank provides one of the largest frequency response data pools, with over 700 products included to date.

Unfortunately, they focus on new products, so historical data is somewhat sparse (including Beats’s original studio headphones). Instead of supplementing with other sources, I have decided to rely exclusively on consumer reviews and qualitative evidence of older products which I believe is still representative of their sound characteristics once multiple perspectives are considered.

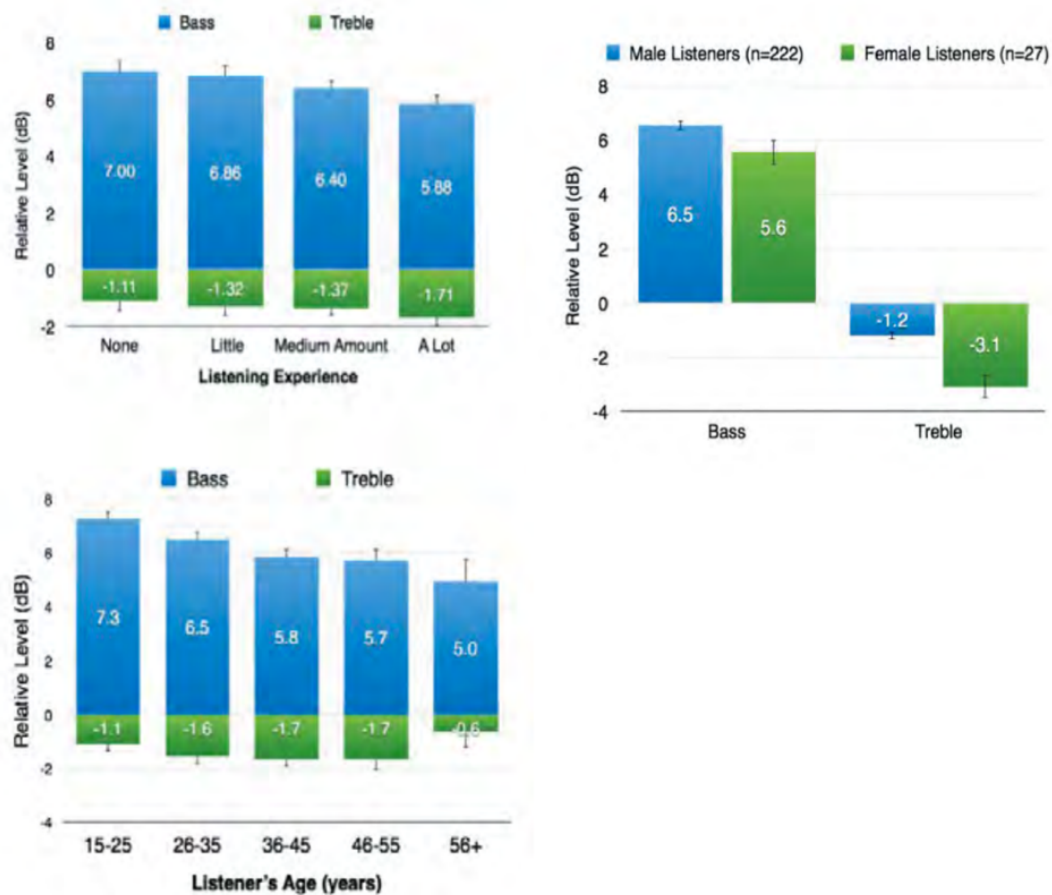


Figure 4.2. Olive et al.’s (2015) results showing 95% confidence intervals for how much bass and treble controls were altered on average to preferred levels.

What is “High-Fidelity”?

The meaning of “high-fidelity” has shifted over the years. First employed by Harold A. Hartley of Hartley Loudspeakers in 1924, the term “high-fidelity” was originally used to describe and market the improved sonic quality of newer radios developed in the 1930s and 1940s. These devices were distinguished from lower-quality radios of the previous era as well as emerging devices that relied on transistor technology as opposed to the standard vacuum tube electronics of the day. By the 1950s, “hi-fi” referred to the task of naturalistically capturing and reproducing live sound, symbolized by the ability to transport the concert hall into the living room. Associated with upper middle-income households that could afford the technology, high-fidelity functioned as a sign for caring about “good” music as well as a reflection of class membership and artistic cultivation in addition to being a rather good marketing tool for selling more records.¹⁶³ Later, with the advent of personal mobile listening device with the release of Sony’s Walkman in 1979, the concept of high-fidelity become less absolute and more situational due to portable sound being inherently different and thus incomparable to stationary listening. At this time, mobile sound generally equated to lower quality audio experiences where additional background noises had to be considered and attention was often split from music due to multitasking. Because of these factors, mobile audio users had very different priorities than the stationary listener so sound quality was rated on a different scale for these devices. Labeled by Fabbri (2016) as “just-right-fi” or “relativistic” hi-fi, fidelity became situational and prefaced by different modes of listening as well as listener preference.¹⁶⁴

¹⁶³ Greg Milner, *Perfecting Sound Forever: An Aural History of Recorded Music* (New York: Farrar, Straus and Giroux, 2010), 137-139.

¹⁶⁴ Fabbri, 258.

Put another way, the simple binary between bad quality transistor radios and high-quality systems that the term “high-fidelity” originally indexed grew inadequate when a larger variety of products designed for personalized listening occasions became widespread.

Bass-less Portability

As just stated, Sony’s Walkman (1979) was a seminal product that first popularized audio portability.¹⁶⁵ This device was the first mobile tape cassette player to reach a broad commercial audience, marking a drastic leap in portable music that facilitated a novel expression of the “autonomous self” in contrast with the publicly penetrating boombox that previously territorialized urban spaces and required “listening-to-music-together.”¹⁶⁶ An important change to the urban soundscape, the Walkman first merged privatization and portability with music listening but also shifted this environment from room spaces to a “sense of solipsism.”¹⁶⁷ Facilitating head listening, the Walkman was initially released with Sony’s MDR-3 headphones, an over-the-ear and open-back design similar to Koss’s contemporaneous Portapros (Figure 4.3).¹⁶⁸

¹⁶⁵ I must preface here that portable radios can be tracked back all the way to the 1920s. Primitive devices until the development of the transistor, portable radios did make mobile listening possible but they were never as revolutionary as the Walkman which provided the first product that allowed users to craft their own soundscapes away from the public realm of radio stations.

¹⁶⁶ Hosokawa, 167.

¹⁶⁷ Michael Chanan, *Repeated Takes: A Short History of Recording and Its Effects on Music* (London ; Verso, 1995), 155.

¹⁶⁸ While writing this thesis I have noticed a few local students rocking Portapro models (likely the 2012 redesigns). From a tech standpoint, it is incredible that such an old piece of technology (originally released in 1984) remains relevant in today’s industry. Figure image sourced from “The Sony MDR-3 Pictures,” Headphone Reviews and Discussion - Head-Fi.org, May 23, 2016, <https://www.head-fi.org/threads/the-sony-mdr-3-pictures.809113/>.

Reviewing a vintage model with newer pads, audio tech blogger Rushil says that the MDR-3s “sound decent” but that “there is virtually no bass.”¹⁶⁹ This poor performance in bass response certainly informed the subsequent compensatory addition of the “mega bass” switch and multiband EQs first available on the WM-39 model (1988). Before this, Sony would replace the MDR-3 with their first earbud model in 1982, the MDR-E252 (see Figure 4.4).¹⁷⁰ Coming in a wound-up case, it is shocking how similar the product is to Apple’s first iPod earbuds released almost twenty years later. With the popularity of silicon rubber tips in the late ‘90s, such as Sony’s MDR-EX70SL (1997), bass finally became more boosted with the use of a tighter seal that naturally emphasizes low resonance within the ear canal. Notably, non-silicon tipped earbuds (Earbuds) are still packaged with every iPhone today, just as the MDR-E252 often came with the purchase of each new Walkman. In general, these devices are cheap and small enough to be included along with a mobile player’s packaging. In other words, they are not designed to provide full spectrum listening experiences but rather offer a convenient option for users. In the ‘80s, headphone and earbud technologies designed for the average, mobile listener largely came into their own. From tape to CD to the mp3 player, few changes were made to the basic product during the following two decades. This meant that until the mid 2000s, most consumers did not have much bass response in their mobile audio experiences. Of course, I am not dismissing the existence of headphone

¹⁶⁹ Rushil, “Vintage Gear Review: Sony MDR - 3 Headphones,” *Vintage Gear Review* (blog), accessed February 16, 2023, <https://theterrarium.blogspot.com/2019/07/vintage-gear-review-sony-mdr-3.html>.

¹⁷⁰ “Sony Group Portal - Product & Technology Milestones—Headphone,” accessed May 15, 2023, <https://www.sony.com/en/SonyInfo/CorporateInfo/History/sonyhistory-h.html>.

audiophiles or the audio capabilities of contemporaneous studio grade equipment like the MDR-V6; rather, purchasing this equipment was an exception to the norm.



Figure 4.3. A pair of original Sony MDR-3s in mint condition



Figure 4.4. Sony MDR-E252 (1982)

In one of the few works that tackles sonic properties of MADs, Wayne Marshall (2014) labels the commercial prevalence of headphones with poor bass response as a kind of “treble culture,” problematizing the growing ubiquity of average consumers listening

through “small plastic speakers.”¹⁷¹ Marshall questions why trebly listening has prevailed alongside the growing popularity of bass culture(s), especially given the technological capabilities of high-fidelity MADs which had been available to professional studio users for decades. Comparing trebly MADs to transistor radios and 78 shellac discs, Marshall claims that “treblification” is rooted in valuing portability over fidelity. As such, it is paradoxical that “bass culture” is being mediated through trebly or “impoverished” listening conditions which undermines the root of Jamaica’s “gift to the world.”¹⁷² On a positive note, Marshall argues that the future of audio portability has great potential and that bass fetishism might be limiting our ability to see positive attributes of a ubiquitous portable audio reality:

Although a marked concern with the loss of high fidelity—and in particular, a paucity of bass—permeates the discourse around today’s treble culture, conjuring specters of ontological and phenomenological poverty, even the bass boosters of the world can hear potential—the opening of new social, cultural, and political possibilities—in sound’s newfound portability. While these possibilities may remain to be seen or heard or realized, attending to treble culture without the blinders of bass fetishism might prove a more productive strategy.

Although perplexed by the spread of treblification, Marshall also hints that this prescription might be premature. In a note, he suggests that technology may just be in a transitory state and that “before long we will witness a swing in the other direction as lossless compression schemes, cheaper storage, and greater broadband access make it possible for music to remain portable without affecting audio quality as much.”¹⁷³ This is a reality in which I argue we are already living. Thus, I think Marshall would agree that

¹⁷¹ Marshall, 43.

¹⁷² *Ibid.*, 65.

¹⁷³ *Ibid.*, 71.

much has changed in the realm of MADs and streaming services since he originally wrote this piece. Rather than having to settle for trebly audio, ample bass response is now available at low prices and thus obtainable by all consumer types.

Beats by Dre: Bass Meets the Masses

In 2006, legendary hip-hop producer Dr. Dre and music business luminary Jimmy Iovine began developing a new headphone line to challenge the mass usage of cheap earbuds. In partnership with Monster cable, Dre and Iovine released the first Beats headphones in July of 2008. A highly anticipated debut, the product was hyped as one of the most advanced products to ever be released, promising “studio quality” that allowed the listener to “hear what the artists hear.” In alignment with Marshall, Dre and Iovine were fed up with lo-fi quality and lack of bass prevalent in the MADs included with popular portable players. This was expressed by Dre in the famous PR quote that surrounded the product release and capitalized on his reputation as a well-respected hip-hop producer. Referring to the injustice done to bass-heavy music on poor-quality MADs, he claimed: “Man, it's one thing that people steal my music. It's another thing to destroy the feeling of what I've worked on.”¹⁷⁴ Seeking to change the way average consumers listened to music, Beats devised their products to provide better sound (and better bass) to a mass consumer. In just a few years, this concept proved wildly successful as Beats rapidly

¹⁷⁴ “Marrying Culture and Technology: The Story of Beats by Dr. Dre,” Highsnobiety, April 2, 2020, <https://www.highsnobiety.com/p/beats-dr-dre-brand-history/>.

expanded the MAD consumer base, reaching a staggering \$500 million in sales by 2011—64% percent of the US market share for headphones over \$100.¹⁷⁵

To accomplish this, Beats’s products exhibited attractive designs that were meant to be more appealing for public wearers. Compared to other devices of the time, the sheen finish and attractive color schemes of Beats was a stark contrast from the lackluster stylings of competing companies. Originally offering just a few color options, it would not be long until Beats released the Solo HDs (2010) “drenched” in color varieties (Figure 4.5).¹⁷⁶ As a distinctive fashion statement, Beats popularized the public use of bulky, over-the-ear devices at an unprecedented level—a practice that in 2008 was far from normalized. Writing at this time, tech blogger Nicholas Deleon questions if users would actually want to “use such large headphones on the subway or while walking about town,” arguing that “Beats [were] probably best for stationary use” due to their battery cover design flaw that made ambient noise when moving around while wearing the product.¹⁷⁷ Challenging conventional industry wisdom that assumed larger devices were unfeasible for mobile use, Beats quickly proved this rationale wrong as their studio headphones emerged as everyday devices proudly worn in public spaces. Soon after, the trademark black and red became a coveted symbol that communicated respect for

¹⁷⁵ Andrew J. Martin, “Headphones With Swagger (and Lots of Bass),” *The New York Times*, November 19, 2011, sec. Business, <https://www.nytimes.com/2011/11/20/business/beats-headphones-expand-dr-dres-business-world.html>; “Beats by Dr. Dre – Powerplay Retail,” accessed April 23, 2023, <https://powerplayretail.com/case-study/beats-by-dr-dre/>.

¹⁷⁶ “Impressions on the New Beats Solo HD 2.0 (Drenched in Color),” Headphone Reviews and Discussion - Head-Fi.org, March 29, 2014, <https://www.head-fi.org/threads/impressions-on-the-new-beats-solo-hd-2-0-drenched-in-color.712216/>.

¹⁷⁷ Nicholas Deleon, “Dr. Dre’s Beats Headphones Here on July 25 for \$349,” *TechCrunch* (blog), July 22, 2008, <https://techcrunch.com/2008/07/22/dr-dres-beats-headphones-here-on-july-25-for-349/>; Jasmine France, “Beats by Dr. Dre Studio (White) Review: Beats by Dr. Dre Studio (White),” August 28, 2008, <https://www.cnet.com/reviews/beats-by-dr-dre-studio-white-review/>.

recording artists and taking their work seriously, at least for consumers who bought into the product marketing. Alas, Marshall’s “treblification” had met its match.



Figure 4.5. Beats Solo HD “drenched” in color

While the stylish brand aesthetics and sleek design of Beats was a raving success, the same cannot be said about their actual sonic properties. Some initial reviews were positive: for instance, CNET was amazed by the headphone’s “crisp response.” However, audiophile and professional consensus quickly turned negative.¹⁷⁸ Developing a reputation for distasteful bass-forward tuning and bad quality drivers, the professional community quickly saw through clever marketing tactics and crafty tuning optimized for non-audiophile users. Representing this opinion, YouTube reviewer and audiophile Bad Guy Good Audio provides additional insights into this perspective:

¹⁷⁸ Jasmin France, “Beats by Dr. Dre Studio (White) Review.”

The sound quality of these is very poor . . . for people like myself who like a good low end and who heard this off of an iPod and felt that slight tactile sensation that this gave on bass hits, it was like catnip. . . . [However] this could not take a couple dBs pushed up in the bass. It was literally tuned to the threshold of what the driver inside could do . . . it was perfectly tuned by the people that did it to do what it does but it was at the maximum because they were envisioning this combined with an iPod . . . people like myself got this and hooked it up to anything with any kind of power where you could boost [it] up using an EQ [and] these started to distort immediately.¹⁷⁹

As Bad Guy Good Audio describes, experienced users saw Beats as a scam. While the device produced high levels of bass response with minimal amplification (such as from an iPod), the product had little else to offer professional users. Creating distortion when amplified with more than an iPod, the device did not live up to its high-fidelity claims and the sound could not be improved upon with use of additional equipment or EQing. For those in the know, Beats cultivated a reputation for being overpriced and taking advantage of inexperienced listeners who often prefer increased bass and treble frequency responses, as evidenced by Olive's studies.

Rather than correct the tuning, however, Beats doubled down, marketing the product as being designed specifically for bass music like hip-hop or dubstep, further solidifying heavy bass as an important marker of the brand's sonic self-identification. For users like freelance writer Jesse Dorris, bass became *the* defining feature of Beats headphones:

Beats by Dre aren't really cutting-edge technology. They aren't trendy fashion accessories at heart, either. Beats by Dre are actually bass-delivery systems. . . . That feeling, of a bass that cannot be contained, a bass that is too real for your rules, is what Beats delivers. Their sound is hyperbole, and there's no point arguing with that.¹⁸⁰

¹⁷⁹ *Beats by Dre 10 Years Later*, 2022, <https://www.youtube.com/watch?v=eTDs1DsQKB4>.

¹⁸⁰ Jesse Dorris, "How Beats by Dre Knocked out Better Headphones," *The Age*, September 14, 2013, <https://www.theage.com.au/technology/how-beats-by-dre-knocked-out-better-headphones-20130913-2tola.html>.

Although Dorris seems to question the seriousness behind Beats's intent, the bass forward tuning was an effective way to sell "high-fidelity" to lay consumers, align with hip-hop bass-centric sensibilities, and target Afrodiasporic popular music tastes. In this context, Dre's self-representation as a well-respected hip-hop producer and Black artist further perpetuates the namesake product line as closely affiliated with hip-hop culture and Blackness.

Objectively, Beats did offer a large improvement over trebly Apple earbuds and their bass presence successfully targeted the growing popularity of bass culture(s) listeners. Though a stacked comparison, average users who bought Beats would have had little else to compare the product against. A low bar to improve upon, Beats headphones were certainly more sonically capable than cheap earbuds—almost any over-the-ear device would be. In this context, the increased presence of bass response sealed the deal for users who could easily point to this sonic quality as the primary attribute of improved listening experiences—an aesthetic that is obviously aligned with bass music and the rising prevalence of Black styles in the globalized popular music industry. Like a noisy aftermarket car subwoofer, it didn't matter how accurate or clean Beats sounded: what mattered was that the low end was present, you could feel it, and you looked "hip" all in the same process. Perpetuating this product placement, the Beats brand actively targeted specific user types through style and sound. As evidenced in their advertising campaigns, heavy bass worked side by side with other categorizing markers to cater towards specific consumers along the axes of bass culture(s). Thus, analyzing examples of Beats marketing provides evidence for the brand's targeted basshead demographics and doubles

to reflect how the categorization of bass culture(s) has been articulated and commercialized in popular culture throughout the 2010s.

An early notable TV commercial by Beats appeared in 2010 in collaboration with Hewlett Packard.¹⁸¹ In the scene, the Beats company is depicted as a high-tech laboratory where cyborg Dr. Dre is at the helm of an elaborate machine with robotic arms and a spinning chassis (see figure 4.6).¹⁸² The picture cuts to a high-heeled female assistant bringing in Beats technology on a hovering tray reminiscent of an airline beverage cart. Right when the machine arm surgically inserts the Beats audio chip into the HP motherboard, the techno soundtrack is suddenly enriched with a mechanized sub-bass frequency that emanates from the Beats logo. The seismic extent of this impact is further visualized by a rippling wave emerging from the insertion site symbolizing the immense sonic power that has now been added to the laptop. Dr. Dre then slowly amps up the volume on his kiosk as a female android voice states, “hear what you’ve been missing with the first laptop built for music.”

As evidenced from the sonic and visual effects, this advertisement solidifies Beats reputation as a “bass-delivery system.” Beats furthers this image with a high-tech futuristic theme portraying the brand as being on the cutting edge of sonic development and thus supplying high quality audio to its consumers. Moreover, the laboratory setting, complete with a sexualized female assistant, parallels Dr. Dre’s work as a producer in the hip-hop industry and plays into male sci-fi fantasies as well as hip-hop star ambitions

¹⁸¹ Having owned one of these computers, Beats was slapping their brand on something totally unrelated to their own products. Other than the logo, I don’t remember picking up on any significant improvements in sonic capabilities compared with other laptop computers. This is evidenced in the commercial with the added text, presumably legal reasons, “Beats audio chip is a simulation.”

¹⁸² Images in in this figure and subsequent video stills are chronologized left-right, top-bottom. *Dr. Dre “HP Envy Commercial,”* 2010, <https://www.youtube.com/watch?v=awIRXQth1r4>.

with Afrofuturist aesthetics. In this context, there is a very clear hierarchy of man over machine and man over woman: Dr. Dre is in charge, representing technological sophistication, power, and dominance of the Beats brand propelled by their heavy bass profile. Both the android voice and assistant are clearly coded as female and under the control of Dre with the use of his Beats headphones. In addition to bass sound, Beats’s marketing strategy is patently gendered, appealing to a style of masculinity that putatively characterizes their target demographic. (I will discuss these gender implications in more depth later in the chapter.)



Figure 4.6. Scenes from Beats and Hewlett Packard commercial (2010)

In addition to TV advertisements, product placements of Beats devices have also contributed to their marketed image of bass response. This is evident in the music video to the 2015 single, “Hands to Myself,” by Selena Gomez. Here, the singer is seen breaking into a posh modern house revealed later to be the home of actor Christopher

Manson. Through cut scenes and lyrical content, the audience is made aware that Selena's character is obsessing over the actor—not being able to keep her “hands” to herself and away from his “metaphorical gin and juice.” After entering through the unlocked back door, Selena quickly unrobes to reveal a seductive lingerie outfit which sidetracks the viewer from her trespassing behavior and plays into the male gaze (see Figure 4.7).¹⁸³ At this point, we assume she was attempting to surprise Christopher, although her exact intention remains up to interpretation through the production. Walking upstairs and into Christopher's bedroom, Selena is pictured activating a Beats Pill on the bedside table (the product line's portable Bluetooth speaker released in 2012). Seconds later, the song transitions into the pre-chorus (0:37) where a pronounced sub-bass synth dominates the mix and teleologically propels the track into a rhythmic break and subsequent chorus (0:54). At the end of the video, Selena is arrested when Christopher returns home, leaving the audience confused whether the two had actual history or if Selena was fantasizing the whole time.

Just like the previous example, heavy bass in the video's soundtrack is used strategically by Beats to codify their product as supplying ample bass frequencies. This is deployed intentionally during the key transitional moment of the bass drop, taking advantage of the track's inherent foregrounding of bass sound. As previously stated, this marks the Beats brand as supplying high quality audio. In addition, Selena's seductive

¹⁸³ *Selena Gomez - Hands To Myself*, 2016, https://www.youtube.com/watch?v=FMlcn-_jpWY.

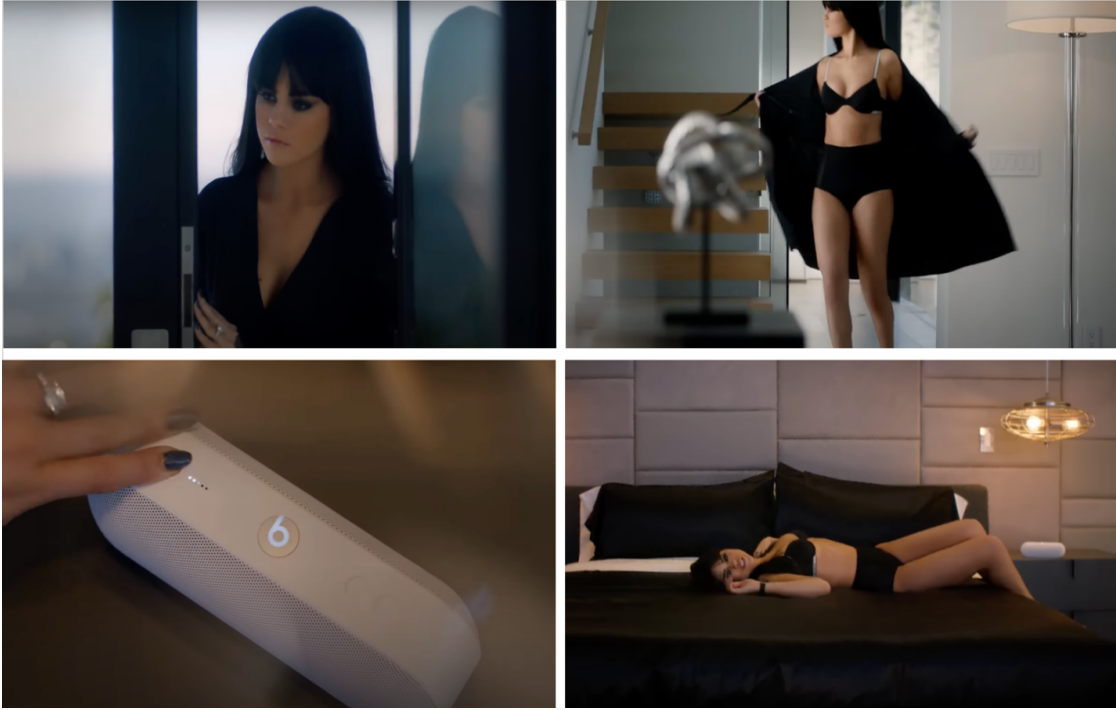


Figure 4.7. Scenes from Selena Gomez’s “Hands to Myself” music video

behavior and “bad girl” energy plays directly into male sexual fantasies, suggesting that owning a Beats Pill is a step towards luxurious lifestyles where women like Selena might fall obsessively in love with you. This perpetuates the well-established trope of a lovesick woman and again hails Beats’s target consumer demographic of men.

As a final, more recent, example, an advertisement campaign produced by Beats for the 2018 World Cup showcases similar marketing approaches. Titled “The Defiant Mixtape Vol. I,” this four-minute production is organized into a series of different “tracks” that feature cameo appearances by famous soccer stars from different national teams. These “tracks” are bookended by an introduction and outro set in Russia (where the 2018 World Cup was being held) that follows the story of a young footballer who angers his local rock-throwing and snickering bullies with the kick of a soccer ball, perfectly colliding with one of their drinks and spilling a pink liquid all over his white

outfit (see Figure 4.8).¹⁸⁴ This footballer, Andre, provides a relatable focal point for the viewer throughout the production and is returned to at the end of the ad.



Figure 4.8. Andre, the future of Russian football, defies against his local bullies with the kick of a soccer ball in 2018 Beats advertisement.

Before interacting with these older teens, Andre is pictured in his mother’s apartment where he is juggling his ball before being instructed to go play outside. At the beginning of this scene, the beat and heavy bass soundtrack from the opening credits suddenly drops out (0:16) in alignment with a cinematic cut that focuses the viewer’s attention on an outdated boom box covered with butterfly stickers (see Figure 4.9).¹⁸⁵ More specifically, the soundtrack employs a high-pass filter which cuts all the low resonance of the track, creating a comparably tinny and unsupported sound quality. In

¹⁸⁴ *Beats by Dre “Made Defiant” World Cup 2018 Commercial, Directed by Guy Ritchie* | *ProductionHUB*, accessed February 21, 2023, <https://www.productionhub.com/video/67098/beats-by-dre-made-defiant-world-cup-2018-commercial-directed-by-guy-ritchie>.

¹⁸⁵ *Ibid.*

combination with the imagery of the boombox, this moment acts as a foil against Beats's bass-heavy products, subsequently featured throughout the ad. Not being a Beats product, the boombox represents low quality audio, corresponding to a lack of bass in the soundtrack. In addition, the butterfly stickers are coded feminine, another instance of Beats marketing heavy bass sound with masculinity (again, more on this later). Finally, this image sets the stage for the Russian context and can be read as a further comment on the country's lagging economic development.



Figure 4.9. An old boombox in Beats's commercial (2018) acting as a low-fi foil to Beats products

Later in the advertisement (1:40), Mesut Ozil (German national team star) is seen wearing his Beats studio headphones, pressing the side of the device to activate them (Figure 4.10).¹⁸⁶ This action is accompanied by the sudden entrance of a heavy kick drum and synth bass beat complete with a two note “orientally” marked plucked riff which

¹⁸⁶ Ibid.

sounds like it is played on a Turkish *saz* or *baglama*, doubling as a sign for the star’s Muslim-Turkish heritage (proclaimed in the ad). This connection between the Beats device and heavy bass sound is confirmed once again as Mesut turns off the product after getting into a car (1:58). At this point, the soundtrack immediately cuts to faint cheering of his fans and family pictured outside the car’s window. Similar to the two previous examples, Beats deploys the appearance of their product in strategic orchestration with the accompanying soundtrack to project their device as an image of boosted bass aesthetics, catering to hip-hop specialists.



Figure 4.10. German football star, Mesut Ozil, turns his Beats on and off a 2018 ad.

Finally, the outro of the ad returns to Russia where Ivan is now running away from the bullies he enraged earlier. At this moment, the soundtrack lightens to a two-note synth pattern and repetitive female humming complete with a chorus effect that puts the listener into an introspective and nostalgic mindset. As soon as the narrator communicates that Andre is realizing his destiny to become a football prodigy, a heavy bass drop enters the mix as the camera cuts to a montage of the various football stars wearing their own Beats headphones. The video then ends with Ivan scoring a free kick, symbolizing his successful “defiance” and football prowess. After this scene, the video

cuts to the Beats logo which corresponds with a final bass drop (taken from Anderson Paak's 2018 single, "Bubblin").

Overall, the tongue-in-cheek tone throughout the commercial provides an inspiring but relatable style that targets young, sports-driven men. Imitating the production of a hip-hop mixtape, the commercial's soundtrack is engineered with the clear intention of connecting heavy bass aesthetics with Beats products as they appear on camera. In addition, the overall style and scope of the advertisement clearly evidences Beat's targeted male audience due to the strong prevalence of powerful idolized male roles and the overall athletic focus in similarity to the Selena Gomez example. The central theme of defiance and overcoming obstacles frames Beats products as integral tools for aspiring men and boys. The notable appearance by Serena Williams provides a comedic relief and counterweight against the masculine focus with her one liner, "that's it, just two in a row?" in response to Mesut's attempts at a World Cup championship repeat (2:00). A notable attempt by Beats to broaden their market, this addition is easily lost in the scope of the ad. Beats is clever to not turn a blind eye against women customers, but by and large this cameo amounts to tokenism.

While it would be impossible to analyze all of Beats impressive marketing campaigns in this chapter, these three advertisements sum up the company's use of pop stars and famous athletes in combination with cleverly positioned soundtracks that mark their products as providing heavy bass. In addition, these ads illuminate the gendered nature of their marketing strategies that clearly target masculine buyers. In the last couple of years, Beats has made attempts to broaden their audience, such as the "Flex that Voice" campaign. In these commercials, Beats adds a social justice bent to their

marketing strategy with celebrity appearances by outspoken tennis star Naomi Osaka and rapper Cordae, who has made a name for himself critiquing problematic hip-hop idols and speaking out about a generational gap that separates him and his contemporaries from an older and less socially progressive generation. Regardless of this recent shift, Beats's strong history of catering their product to basshead users and hip-hop culture still dominates the commercial narrative and drives their brand identification—commercial tactics that have made a enormous impact on the developing MAD industry writ large.¹⁸⁷

The Post-Beats Mobile Audio Market

Recently, mobile audio has become a vast and rapidly developing industry. Large, well-known brands like Sony, Bose, and Sennheiser continue to release new headphone designs while recent startups, particularly Chinese hi-fi brands, have taken the industry by storm with lower budget options. Thanks to these developments, affordable consumer options are growing at an exponential rate; accordingly, high-quality sound is no longer reserved for professional users. As increased fidelity has become more accessible in MADs, so has bass response. A brief overview of some notable products released in 2022 makes these trends clearer.

In June 2022, JBL debuted their Reflect Aero TWS, waterproof and dustproof earbuds complete with six microphones for impressive active noise cancellation,

¹⁸⁷ In addition, Beats has run many ad campaigns regarding their product's noise cancelling capabilities. Out of this chapter's scope, noise cancelling features and their cultural intersections are left here for future research.

compacted inside their small design.¹⁸⁸ Currently on sale for under \$100, these earbuds offer impressive durability and plenty of extra features. According to Tim Gideon at PCMag, the JBLs provide a “bass-forward (but customizable) audio experience.”¹⁸⁹ Like most of the latest releases, users can tailor their own sound with the JBL app’s five-band EQ amongst other features. These earbuds are wireless and come equipped with their own charging case. If not your style, Anker, Jaybird, and Amazon offer similar priced waterproof earbuds of their own. Even less expensive, Tozo, iLuv, JLab, Kurdene, and Earfun also offer waterproof devices under \$40.

In August of 2022, Sennheiser released their latest top-of-the-line product, the Momentum 4 (originally priced at \$350). To keep up with the success of Apple, Sony, and Bose, the wireless, over-the-ear Momentum 4 is loaded with features and showcases a handsome and sleek design, making the original Beats look like cheap knockoffs. According to Christian Thomas at the audiophile website Sound Guys, the Momentum 4 does not provide wild “overemphasis of the bass or highs, though there is a little added bass.”¹⁹⁰ According to the reviewers at RTINGS.com, these cans are described as being a bit more bass forward: “[the Sennheisers] have a bass-heavy sound profile that delivers extra thump and rumble to mixes.”¹⁹¹ For a company with a rich history in professional

¹⁸⁸ “JBL Reflect Aero TWS | True Wireless Noise Cancelling Active Earbuds,” accessed April 24, 2023, <https://www.jbl.com/wireless-earbuds/REFLECT-AERO.html>.

¹⁸⁹ Tim Gideon, “JBL Reflect Aero Review,” PCMAG, accessed April 25, 2023, <https://www.pcmag.com/reviews/jbl-reflect-aero>.

¹⁹⁰ Christian Thomas, “Sennheiser MOMENTUM 4 Wireless Review,” SoundGuys, January 24, 2023, <https://www.soundguys.com/sennheiser-momentum-4-wireless-review-2-86111/>.

¹⁹¹ Jack Thauvette, Vanessa McCuaig, and Yannick Khong, “Sennheiser MOMENTUM 4 Wireless Review,” RTINGS.com, accessed April 25, 2023, <https://www.rtings.com/headphones/reviews/sennheiser/momentum-4-wireless>.

audio, this tuning choice veers a bit from their advertised “audiophile acoustic system” that “delivers brilliant dynamics, clarity, and musicality.”¹⁹² Instead of offering a more flat tuning, which is sought after by professional users, Sennheiser’s choice of boosted bass clearly caters to an average consumer with contemporary bass-centric popular listening habits. Like JBL, the device is advertised as offering customizable sound thanks to the company’s own feature-laden app.

In the realm of in-ear monitors (IEM), moreover, the last few years have witnessed an explosion of inexpensive, well-tuned products. Chinese companies like 7Hz and Tinhifi are rewriting the rules when it comes to accessibility of well-tuned products and many of these companies are quickly garnering a cult following. In review of a \$29 set by Tinhifi, Bad Boy Good Audio comments that the “hobby” (audiophile world) has gotten so saturated with good budget models that he can’t get excited about accessible products since there is so much recent competition at the same price point:

The fact that I’m not doing a hype video for a well-tuned 29 dollar set is a testament to how crazy this hobby has gotten and how fast it’s gotten there. There are so many options below fifty dollars that are legit really good stuff. You all know it’s out there. 29 dollars, legit tuning, a year ago it woulda got a hype video because [at] that price, you usually don’t get that. Now, there’s a lot of other options out there.¹⁹³

Although IEMs are not aimed at a general consumer but instead target the audiophile, the remarkable low-price points confirm decreasing technological and production costs that are increasingly making high-quality sound more accessible to all consumer types.

¹⁹² “MOMENTUM 4 Wireless | Sennheiser,” accessed April 25, 2023, <https://www.sennheiser-hearing.com/en-US/p/momentum-4-wireless/>.

¹⁹³ *7Hz KZ and Tinhifi Walk into a Bar...*, 2022, <https://www.youtube.com/watch?v=pzYpm25dpXo>.

In September 2022, Apple released their revamped AirPods Pro with more noise cancelling capabilities and new touch controls.¹⁹⁴ Also owned by Apple, the Beats Studio Buds, released a year and a half earlier, are a comparatively budget level option to the Apple pros at \$150. Marketed towards different users, the AirPods Pro and Beats Studio Buds provide very different listening experiences despite being developed by the same company. In terms of sound, the Beats line maintains its bass heavy reputation while the AirPods Pro offers a flatter response designed to be universally appreciated by all types of listeners. Comparing the two products, YouTube reviewer Mark Spurrell notes that the Beats Studio Buds provide more low-end “oomph”, but they also produce noticeable sibilance (plosive hiss) in the upper register, especially at high volumes.¹⁹⁵ Spurrell prefers the AirPods Pro’s cleaner sound over the Beats, but he notes that both products are high quality. In agreement with this opinion, Chase Bernath at Sound Guys assesses the Beats as “true to the brand” with amplified sub-bass and pronounced treble, making “it difficult to hear vocals.”¹⁹⁶ With over one million view on Spurrell’s video, many YouTubers have added their own insights about the products in the comments (Figure 4.11).¹⁹⁷ While some users like Fer SC and Guts prefer the Beats due to their bass response, others like Ultra D-stinct dislike the lack of audio isolation. In addition to

¹⁹⁴ “Buy AirPods Pro (2nd Generation),” Apple, accessed April 24, 2023, <https://www.apple.com/shop/product/MQD83AM/A/airpods-pro>.

¹⁹⁵ *Beats Studio Buds vs. AirPods Pro: Which Should You Buy?*, 2021, <https://www.youtube.com/watch?v=hD98qbS8JC8>.

¹⁹⁶ Bernath, “Apple AirPods Pro (1st Generation) vs Beats Studio Buds - SoundGuys,” accessed April 25, 2023, <https://www.soundguys.com/apple-airpods-pro-vs-beats-studio-buds-59555/>.

¹⁹⁷ *Beats Studio Buds vs. AirPods Pro*.

sound, both Guts and Elijah find it helpful to discuss other product features like battery and color, which might make more of a difference for certain users.

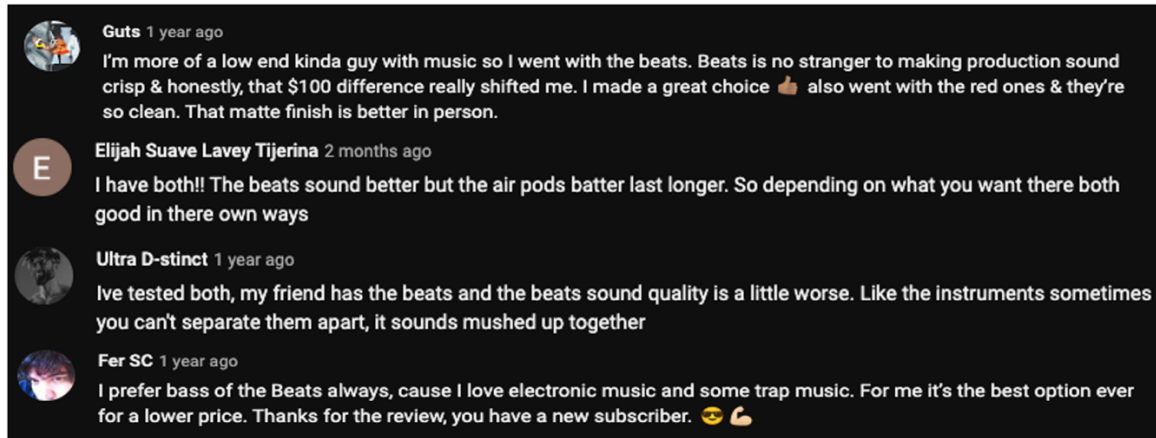


Figure 4.11. YouTube comments on a consumer video comparing Beats studio and Apple pro earbuds.

In general agreement with these reviews, frequency response data verifies the differences in tuning between the two Beats and Apple earbud products. The following two graphs chart the right channel of each device (Figure 4.12 and 4.13).¹⁹⁸ Beginning with the Beats, a clearly visible boosted bass peaks in the extreme register of 20 Hz and is combined with an aggressive mid-scoop that drops in intensity over ten decibels from the sub-bass region. The poster child for producing heavy bass timbre, the Beats tuning is decisively bass forward due to the mid-scoop and increased bass that has an inverse between frequency and intensity. In the audiophile world, this type of tuning is typically referred to as a “v-shape” which describes the aggressive mid reduction that effectively emphasizes bass. In reference to chapter one, this tuning lowers the spectral centroid of the product’s playback and thus increases heavy bass potential. Looking at the AirPods, a

¹⁹⁸ RTINGS.com, “Raw Frequency Response.”

much more subtle scoop in the midrange targets the 800–900 Hz region. In this product, the bass is boosted much less than the Beats and peaks around 40 Hz instead of at the 20 Hz floor. Overall, the Beats product emphasizes lower sub-bass sound while the AirPods Pro are more even with a lot more mid presence and slightly less sub-bass boost.

Although the AirPods Pro produce a diminished heavy bass experience compared to the Beats, both devices are no slouch in the low-end department compared with wired EarPods, a representation of the ubiquitous cheap earbuds that play a critical role in “treble culture.” Looking at the frequency response for this product, it is surprising how much the low bass (20–60 Hz) and mid-bass (60–100 Hz) are diminished (Figure 4.14).¹⁹⁹ In fact, there is practically no sub-bass in this device when considering the additional cut to low frequencies due to psychoacoustics. Instead of an inverse relation between frequency and intensity, as with the bass tuning of the beats, the Earpods have a positive correlation which starts at around 100 Hz. Additionally, the lack of a mid-scoop around the high bass and low midrange (200-300 Hz) takes away even more bass potential from this product. Even though the earbuds have been redesigned by Apple several times, the bass response has still not improved to a comparable level with the company’s other MAD products. These wired earbuds clearly lack sufficient bass sound and for those who have worn them, this comes to little surprise.

As demonstrated by my overview of popular MADs and their sonic characteristics, the consumer audio industry has become an incredibly diverse and competitive environment compared to when Dre and Iovine first unveiled Beats in 2008. More than ever, price, extra features, and style are all major considerations in making

¹⁹⁹ RTINGS.com, “Raw Frequency Response.”

purchasing decisions while sound quality has become less emphasized—a dramatic shift from the ubiquitous “treble culture” described by Marshall and a stark contrast to Beats’s initial headphone campaign where audio quality was centralized as an important selling feature. The new reality of the MAD industry does not mean consumers devalue fidelity. Rather, high-quality sound has become an expected standard. As a result, other attributes have been elevated when making purchasing decisions. This confirms a shift from treble culture to one of ubiquitous bass as ample bass response is now commonplace in most products.

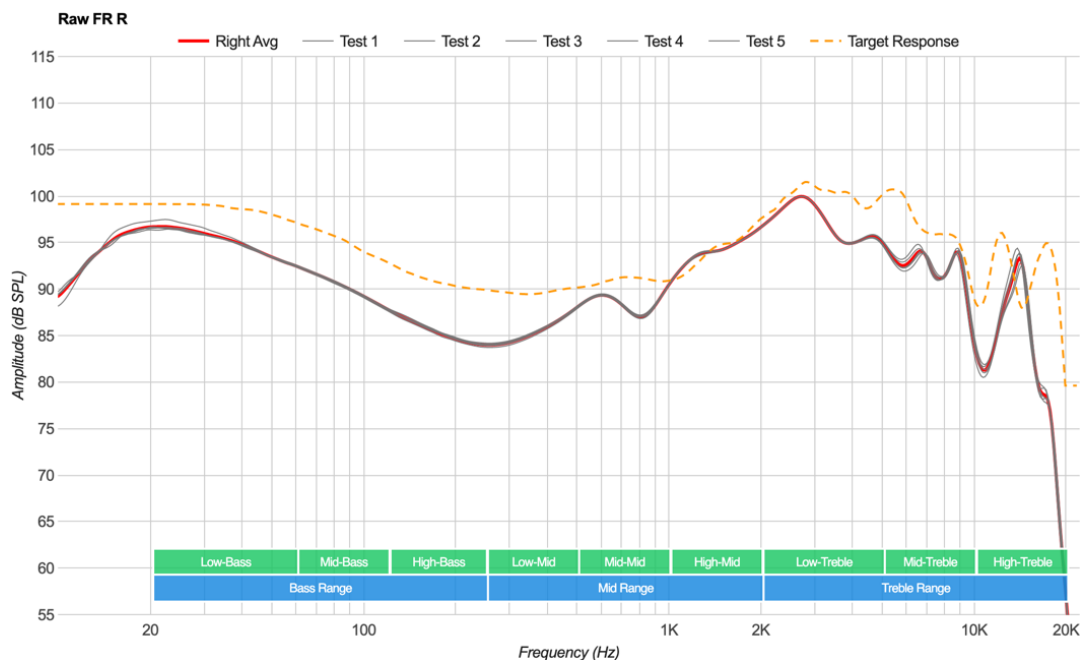


Figure 4.12. Beats studio earbuds, right channel frequency response

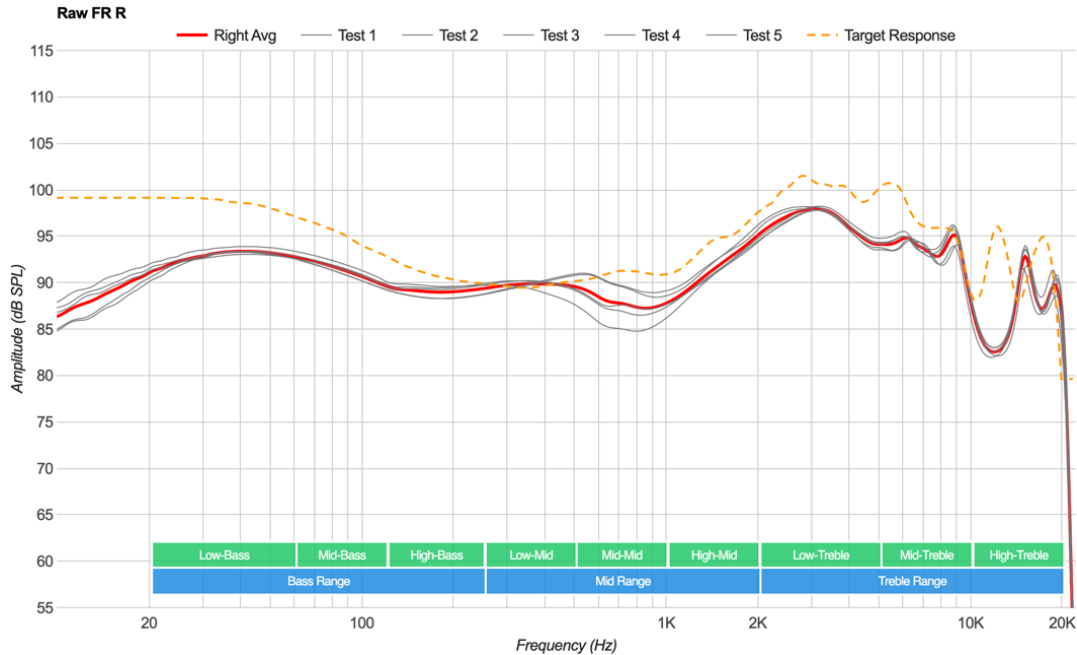


Figure 4.13. Airpod pros 2, right channel frequency response

If anything, new trends in audio personalization via smart phone apps do present a shift away from bass response as a metonym for high-fidelity and towards a model where personalization allows for tailored audio experiences. This grants product developers with devices that are adaptable to a variety of tastes, broadening a product’s targeted audience and focusing on the broader appeal of lifestyle more than any specific taste or technical capacity. However, as seen in most devices, default tunings continue to provide ample bass quantity which continually solidifies the heavy bass aesthetic as an important contributor to enhanced audio quality.

Nearly fifteen years after the release of Beats, bass response remains an important way for manufacturers to advertise their product’s sound. Specifically, companies like Apple, JBL and Sony deliberately include bass response in their product descriptions. For example, Apple touts their devices as having “superior audio” with “clean high notes and deep, rich bass” while JBL markets their devices as “the soundtrack of your life with bold

sound and rich bass.”²⁰⁰ Going a step further, Sony has developed an entire line of “extra bass” devices (released in 2009) that cater bass heavy experiences specifically to certain listener types. Other companies like Sennheiser might not advertise their brand’s sound as having ample bass presence but the tuning of their products does produce heavy bass experiences. In general, these marketing strategies are reflective of the changing consumer tastes and an adoption of marketing strategies first actualized by the Beats and thus the lasting effect of a shift away from treble culture and towards the new reality of ubiquitous bass.

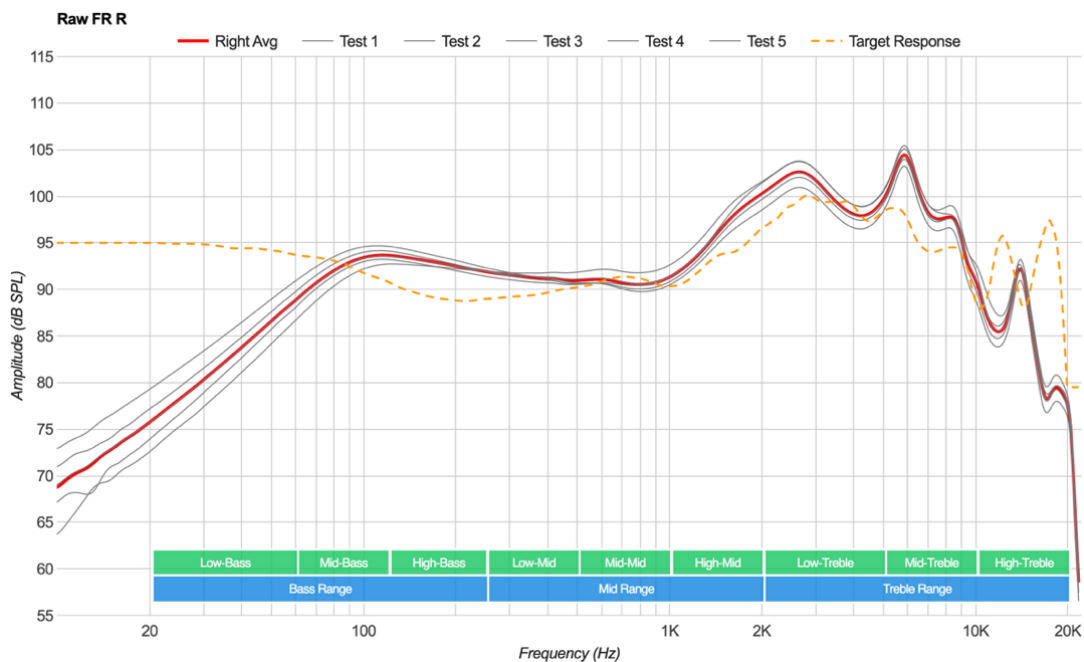


Figure 4.14. Apple Earpods, right channel frequency response

²⁰⁰ “Buy AirPods Pro (2nd Generation),” Apple, accessed April 24, 2023, <https://www.apple.com/shop/product/MQD83AM/A/airpods-pro>; “JBL Reflect Aero TWS | True Wireless Noise Cancelling Active Earbuds,” accessed April 24, 2023, <https://www.jbl.com/wireless-earbuds/REFLECT-AERO.html>.

The Gendering of Bass Culture(s)

So far, gender has been set aside throughout my analysis of Beats headphones and overview of recent Mobile Audio Devices (MADs) as well as within other sections of this thesis. Because gender has a long historical entanglement within the realm of audio technology and bass culture(s), it deserves its own separate space for discussion. By and large, audio technology has long been the near-exclusive terrain of male identities. This of course is generally connected to the broader association between masculinity and technology and STEM fields. For audiophiles, the historical linkage with masculinity can be traced to the emergence of amateur radio enthusiasts at the turn of the twentieth century and throughout the post-war boom when the term high-fidelity became commercialized as a domestic space for men.²⁰¹ As a privatized and economically exclusive endeavor, high quality audio has long been the fetish of male identifying individuals who can afford the time and price of such luxuries. Mirroring this, bass culture(s) has a strong historical association with masculinity which in addition to being rooted in technology also plays into the historical masculinization of low instruments and the feminization of the treble realm which is rooted in cultural expectations of vocal registers. A double whammy of masculinity in the realm of technology as well as within the politics of frequency, then, bass culture(s) is strongly linked male (self)-identification.

As discussed in chapter 2, the Jamaican sound system is a heavily masculinized environment, especially for sound engineers, who, as noted by Henriques, are almost always men. In dancehall, it has only been in the last five years that female DJs such as

²⁰¹ Michael B. Schiffer, *The Portable Radio in American Life* (Tucson: University of Arizona Press, 1991); Greg Milner, *Perfecting Sound Forever: An Aural History of Recorded Music* (Farrar, Straus and Giroux, 2010), 138.

Shenseea have emerged as influential artists in Jamaica. For instance, early '80s DJs such as Sister Nancy never were able to reach full potential despite cutting influential records like "Bam Bam" which has since been one of the most recognizable dancehall records as it was sampled by both Jay-Z and Kanye West in "Bam" (2017) and "Famous" (2016) respectively. More generally, male self-identification is also typical for music producers. As explored in chapter 1, production is an integral site in creating heavy bass alongside musical performance. In many instances, male producers have been known to dominate artistic spaces with their alleged insider knowledge and studio trickery. This can be seen in the unfortunate precedent of female identifying artists being manipulated by male producers often at the expense of the artist themselves.²⁰² In these spaces, male producers and record label executives act as gatekeepers for bass production. Overwhelmingly, it is men and not women who are at the dials and in control of the mix.

In the instance of mobile audio, the Beats brand has literally recreated the trope of the male producer at the helm of production in their HP commercial. The company has also targeted male buyers by playing into male sexual fantasies as evidenced by their product placement in the Selena Gomez production. In more recent campaigns, such as the 2018 World Cup commercial, Beats has further masculinized their product through male role modeling and relatable feel-good stories which track the "defiance" of boyhood and relate to athletic goals. In consolidation, Beats has successfully deployed futuristic imagery, sexualized fantasies, and masculine idols to actively target male buyers via video commercials and product placement. In this way, Beats's masculine coded

²⁰² Ash Edmonds, "The Music Industry's Problematic Relationship with Sexual Assault and Power Dynamics," *Voice Magazine*, accessed May 26, 2023, <https://www.voicemag.uk/blog/10485/the-music-industrys-problematic-relationship-with-sexual-assault-and-power-dynamics>.

commercials have helped to codify a link between a type of male self-understanding and bass culture(s). These strategies have since been adopted by an array of audio industry leaders like Apple, JBL, Sony, Sennheiser, and Bose. As a result, mobile listening has solidified itself a new nexus of which we might label *bass for bros*—the equation of heavy bass with a certain style of contemporary youthful masculinity. As this thesis concludes, it is important to keep in mind that bass sound is still a gendered phenomenon which is not neutralized by its broad proliferation. Although this section has provided important insights into the gendering of bass culture(s), much more research is needed to fully theorize this intersection. My attempts here are merely preliminary. Still, through my analysis it can be concluded that bass culture(s) is not a gender-neutral space. It is interwoven into young male fantasies—it always has.

The Consequences of Ubiquitous Bass

As I have shown in this chapter, the sonic experience of mobile audio has shifted from a treble culture to one of ubiquitous bass throughout the 2010s and during the early 2020s. As a result, theories that highlight the universality of lo-fi, treble-dominant mobile listening, such as the work of Marshall (2014), have quickly shown their age. Among many savvy marketing tactics, Beats marks a critical shift in the mobile audio device (MAD) industry, using bass sound to signify high quality audio and taking advantage of the increased popularity of bass genres. By marketing towards popular tastes and bass heavy listeners, Beats has led the way in an explosion of low frequency capable

technologies, many of which can be purchased at financially accessible prices extending below \$50.

However, conflating bass culture(s) with the rise of ubiquitous bass can be problematic. Although bass culture(s) is in part defined by heavy bass listening, not all low-end environments are equivalent. As such, it is becoming increasingly important to define bass culture(s) with more precision. Now that ubiquitous bass has been facilitated through technological and market development, excessively bass-laden environments are becoming increasingly difficult to distinguish from other sites of listening that are not marked by excessive heavy bass aesthetics but also provide ample bass sound. Put simply, the idea of bass culture(s) is put in crisis once the foil of treble culture is removed, resulting in a rather vague and underdefined conception of the term. This is largely because ubiquitous bass is a drastic shift from bass sound as a historically scarce commodity which more a long time has required listeners to physically travel to the cathedral to hear large organs, the concert stage to hear live orchestras, or the club to hear the booming subwoofers. Part of the reason behind bass as socially and spiritually powerful experience was tied in with its rarity. Now that ample bass response is ubiquitous and personalized, it is no longer exclusive. Thus, shifting the power dynamics within bass culture(s).

One way out of this dilemma is presented by Paul Jasen (2016). Labeling the practice of bass excessiveness in popular music as facilitated within “bass cults,” Jasen defines extreme bass as an “esoteric” phenomenon cultivated by “technician-conjurers” who engage in myth science.²⁰³ Viewing “bass culture” as too vague a term to be put to

²⁰³ Jasen, 153.

use, Jasen comments that the concept of pronounced heavy bass has become overused, noting that club settings are no longer “remarkable for their bass content” and that it is “common for event flyers to promise large quantities of ‘BASS!’ regardless of the sound system’s actual capabilities.”²⁰⁴ Similar to the historical problem of analyzing early Jamaican popular music as marked by “heavy bass,” I view Jasen’s remarks as detached from a historical consciousness that acknowledges audio technology as continually pushing the limits of low-end possibilities. In this way, Jasen’s understanding of bass culture(s) as a meaningless label has everything to do with the rise of ubiquitous bass in and outside MAD contexts rather than the actual lack of bass in these spaces. Put in another way, our understanding of “excessiveness” in relation to bass must be more sensitive to technological progress rather than framed as absolute. In other words, bass heaviness needs to be more accurately historicized. With perpetually developing standards of bass “excessiveness,” this becomes challenging.

In the context of technology, I chose to define bass culture(s) as the active task of pushing sonic experiences to the limits, seeking novel ways to experience low-end centrality. The introduction of Beats perfectly embodies this description as their heavy bass signature was a marked contrast from the treble culture that preceded it. In the realm of current MADs, this idea is represented by basshead identification: users who actively seek out the next “King” of heavy bass experiences.²⁰⁵ Exemplified by the persona of Bad Guy Good Audio, a self-identifying basshead, products like the JVC SZ series

²⁰⁴ Ibid., 254.

²⁰⁵ The employment of “King” here refers to the colloquial use of the term in the basshead audiophile community to describe THE headphone product that offers the most bass heavy listening experience to date.

marked a new frontier of bass heavy listening around 2014 when he commented about the products on his YouTube channel:

These are absolutely fucking psychotic cannons, they are peerless, there is nothing out there. It's a joke to say so... Do I recommend these? Man, are you fucking joking? Of course I do. These are awesome. These are absolutely fucking awesome cans... You might think that JVC spent one day too long thinking about this series and should have left it here (SZ1000s) and maybe the audiophiles would have been quite pleased with that. Instead, they did this one (SZ2000s), threw it in brass (the product's color), [and] made it so that the sub was sooo powerful that you couldn't escape it.²⁰⁶

A little over three years later, Good Boy Bad Audio claims that the JVC's have been “dethroned” and that the new “King” of bass was the Tactile Kannon:

It's actually a whole new level of tech in the headphone industry. There is nothing like this on the market right now. This is absolutely the most powerful bass headphone on the consumer market. No qualifications; no disclaimers—nothing. There's no asterisk necessary. This is it. You can run this off a phone...and your now going to screw your hearing because the SPL level and the Db is not so much that its causing ear damage but the vibration is making you feel like you're at the club standing next to the bass driver. This is a basshead's wet dream.²⁰⁷

Commenting on the Kannon's novel design that combines a traditional dynamic driver with a vibration inducing tactile device, Good Boy Bad Audio is convinced that Kannon is changing the game of basshead mobile listening. Instead of relying on the blasting audio driver to induce tactile sensation on the ears, the Kannon headphones produced extra vibrations similar to that of a cell phone but in sync with the music. Operated with the touch of a button on the device's cord, the company has patented their design. To this day the Kannons remain the only product with tactile capabilities built in. With devices like this, bass culture(s) is colonizing new frontiers by extending beyond hearing proper.

²⁰⁶ *JVC SZ Series Headphones*, 2014, https://www.youtube.com/watch?v=VG1_m_zvjNE.

²⁰⁷ *Taction KANNON Headphones Review*, 2017, https://www.youtube.com/watch?v=EHw9_pWnYSE.

Yet, as evidenced by Bad Boy Good Audio’s language—“fucking psychotic,” “screw you hearing,” and “wet dreams”—this is still a deeply gendered discourse.

Using similar technology, the Toronto based company SUBPAC sells chair and backpack mounted vibration membranes that add a physical dimension to low-end sounds.²⁰⁸ Designed for EDM producers and bassheads, SUBPAC represents the current extremes of bass culture(s) listening. A true representation of how “tactile-acoustic space” can be made mobile, SUBPAC embodies the latest development of bass culture(s) technology and along with the Kannon headphones is bringing heavy bass listening into the realm of private enjoyment and away from the traditional club and dancehall spaces.²⁰⁹

Although MADs will likely never eclipse live spaces in terms of tactile response, certain products like the Kannon headphones and SUBPAC could be changing this soon. Thanks to ubiquitous bass, more listeners than ever can engage in bass frequencies at the touch of a screen whenever and wherever they wish. A development closely aligned with the history of Beats, ubiquitous bass does not mean the ubiquity of bass culture(s) although the rise of bass frequencies all audio products demands that the term be used less liberally as a stand in for bass music, bass sound, and bass preference. Rather than gatekeeping for sake of exclusivity or prestige, I present the history of ubiquitous bass as evidence for the necessity of carefully articulating what bass culture(s) means within historical and contemptuous contexts.

²⁰⁸ “SUBPAC - The New Way to Experience Sound: Feel It.™,” SUBPAC, accessed April 28, 2023, <https://subpac.com/>.

²⁰⁹ “Tactile-acoustic space” is a term used by Hillegonda C. Rietveld in the context of house music. See Hillegonda C. Rietveld, *This Is Our House: House Music, Cultural Spaces, and Technologies*, Popular Cultural Studies 13 (Brookfield, Vt.: Ashgate, 1998).

With this being said, ubiquitous bass does have implications on the future of bass theorization. As an established convention, bass has for decades signaled communal experiences through the contexts of live spaces. In other words, bass embodied the social aspect of the party—you simply had to be there to experience it. Thus, bass has historically functioned as an important index for communal experience and social activity. This is expressed by Henriques through the concept of “sonic bodies,” resonating beings connected by shared experiences of vibration.²¹⁰ Now that bass is ubiquitous, there is no longer an inherent social context attached to low frequency sensation. As a virtual experience is inherently detached from in-person reality, ubiquitous bass also effectively sanitizes bass sound, doing away with the club or party experiences coupled with heavy bass aesthetics. No longer are sweaty dancefloors a necessity for experiencing sonic dominance; the dangers and inconveniences of being physically present with other bodies is no longer a requirement for experiencing bass heaviness. By extension, listeners of ubiquitous bass no longer need to engage with physical accounts of Blackness present in these live communal spaces. Put simply, ubiquitous bass does not equate to ubiquitous Blackness—a problematic notion given the minority status of Black bodies and the increasing popularity of music historically associated with Black connectedness. In a world shifting to a new normal of increased social isolation, ubiquitous bass is a potential source for disconnection and dissociation as much as it aids in the enjoyment of on demand low-end immersion. A double-edged sword, ubiquitous bass simultaneously frees heaviness from its stationary shackling and robs it of its communal bonding.

²¹⁰ Julian Henriques, *Sonic Bodies*, xviii.

5. EPILOGUE: FINAL THOUGHTS AND FURTHER AREAS OF RESEARCH

In this thesis I have presented a novel approach to theorizing bass heaviness through existing and established methods of timbral analysis. In addition, I have constructed a case study of early Jamaican sound system practices to portray the strong semiotic connection between bass and Blackness. Finally, I have broadened the scope of bass culture(s) beyond the professional sound environments of club entertainment into the realm of mobile audio devices (MADs). Through this work, it has become apparent that bass sound needs to be more accurately historicized to take into consideration the rapid development of audio technology that continually shifts our perception of heaviness. To do this, it might be necessary to uncover old technologies to reverse engineer our modern bias of bass saturation. Furthermore, the human perception of heaviness as it relates to a host of other interacting musical features, listener demographics, and corporeal connections is a much more complex and nuanced phenomenon that deserves more robust experimental analysis. While important work on this topic has been done, there is still much more to be learned about how humans perceive bass sounds in musical contexts and whether certain sounds over others may excite dance, introspection, or fear. Understanding these effects could have a host of benefits from musical therapy to more accurate musical analysis.

In addition to race, gender has proved an equally important intersection with bass culture(s) and bass sound. As research on bass culture(s) and low-end theory continues to

develop, it becomes increasingly important to recognize the historical masculinization of the bass register which continually impacts listening experiences and interpretations of heavy bass. Moving forward, it is imperative to understand that ensuing ubiquity of bass frequencies and bass listening is not an equal playing field. For non-male identifying individuals, heavy bass and the fans it attracts can be intimidating and unfriendly. Therefore, exploring mixed affinities for low-end saturation is an opportunity for uncovering sociological details of bass centrality—an area ripe in opportunities for further study.

In final reflection, the concept of ubiquitous bass seems to suggest a re-evaluation or reworking of low-end theory as analyzed by Goodman (2010), Henriques (2011), and Jasen (2016) among others. Instead of a fearful, mystified, or numinous device, I contend that the growing normality of heavy bass aesthetics is changing the established conventions of low-end experiences. Rather than overturning the entirety of earlier theories, I view ubiquitous bass as functioning as a critical addition to developing theories. As discussed, certain fundamental aspects associated with heavy bass sound such as sense of community or “sociocultural wavebands,” to borrow the terminology of Henriques, might not be facilitated through heavy bass in MADs.²¹¹ Although technology may be able to overcome the solipsism or “head feel” of MAD listening with use of tactile drivers, the social nature of bass environments and the sonic connections between corporeally resonant bodies in live environments will always be a distinction from portable listening. No matter how ubiquitous, I am certain that bass extremity of some level will continue to provide bliss, fear, trance, and many more distinctive affects

²¹¹ Julian Henriques, *Sonic Bodies*, 25.

specific to different live and virtual environments. The work is in the details of understanding *where* and for *whom* these responses are occurring.

Although this thesis has covered quite a bit of ground, it has barely scratched the surface of potential research on bass sound and the diversity of low-end nexuses. As expressed in my introduction, the study of bass culture(s) is a rapidly expanding terrain full of undiscovered possibilities. As such, the monolithic construction of a singular bass culture(s), as offered by some writers, must make way for a pluralistic construction of the term that considers a myriad of cultural contexts where heavy bass sound is experienced. This is a ripe area of future research that is far from exhausted in the current literature in which ethnographic based studies would continue to broaden the horizon of bass culture(s). Similarly, research seeking to attempt musical typologies of bass sound, perhaps with timbral analysis, could prove helpful when analyzing the growing number of popular artists like SZA, Beyonce, and Dojacat who frequently shift between production styles within the context of a single album, marked by different employments of drum and bass sound. In general, a growing body of literature on genre and style specific examples of bass sound would continue to push the study of bass culture(s) to new heights. As such, the true power of bass does not rest in the glorification of the amplifier or subwoofer (however important or fundamental this work may be). Rather, it is in the web of details that underlie a variety of sonic perceptions attempting to make sense out of the perplexing and distinct phenomena of booming low frequencies. Whether constructed through race, gender, musical aesthetics, or local scenes, the future of bass research is indeed in the particulars.

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