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Resonating Subjects: Music and Emotion in Victorian Evolutionary Thought

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ABSTRACT

For much of the twentieth-century, English-language music scholars were reticent to speculate about the origins of music. In recent years, however, the study of music's evolutionary origins has been revitalized. *Resonating Subjects* brings a critical-historical perspective to this renewed convergence of music studies and evolutionary science. Through close examinations of foundational music-evolutionary texts, I offer an interdisciplinary interpretive method that can be brought to bear not only on historical ideas but on contemporary musical thought.

In Victorian Britain, thinkers like Charles Darwin and Herbert Spencer invoked music in their evolutionary writings. My work closely examines their music-evolutionary claims and discovers a novel philosophical affordance for music that crystallized alongside nineteenth-century evolutionary science: music as a special kind of evolutionary boundary-drawing device, valued for its power to trace or obscure the conceptual borders between human and animal. I further demonstrate that music's special adjudicative function was bound up with emerging ideas about emotion. Darwin, for one, posited a sexual selection origin for music where musical sensations are analogized with animalistic amorousness. Victorian paranormal psychologist Edmund Gurney organized his Darwinian account of music perception around the pleasure of listening to one's favorite melodies. *Resonating Subjects* depicts resonances between the origins of music, Victorian evolutionary thought, and theories of emotion as they became entwined with ideas about what it means to be human. I show that by invoking music as a key example of evolutionary forces in action, evolutionary thinkers like Darwin, Spencer, and Gurney attempted to naturalize *what it feels like* to be properly human.

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I dedicate this dissertation to my parents Ellen Shulman Piilonen and Leo Piilonen and to my brother Eli Piilonen.

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INTRODUCTION

Evolutionary Musicology Revitalized

This dissertation investigates the place of music in historical evolutionary theories, with emphasis on music-evolutionary ideas formulated in nineteenth-century Britain. The question of musical origins had already been a source of fascination among continental thinkers.[1] But with the advent of evolutionary theories, thinkers like Herbert Spencer, Charles Darwin, and Edmund Gurney provided new evidence and explanation for music's presumed place in deep human history. How music was invoked by Victorian evolutionary theorists—many of whom were not practicing musicians themselves—suggests a novel philosophical affordance for music that crystallized alongside nineteenth-century evolutionary science: music as a special kind of boundary-drawing device, valued by evolutionary theorists for its ability to trace or obscure the conceptual borders between human and animal. Music served this adjudicative function especially well within the nascent field of evolutionary science because musical expression was already seen as a uniquely ambiguous way of signifying.[2] In this dissertation, I show that Victorian evolutionists like Spencer, Darwin, and Gurney invoked music to delineate or complicate a human-animal boundary, such that the structures of music became theoretically entwined with the limits and potentials of the human species.

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[1] For a historical account of earlier speculations about musical origins, see Warren Dwight Allen's *Philosophies of Music History* (1962). See also Bryan Levman's "Western Theories of Music Origin, Historical and Modern" (2000).

[2] For example, Joseph Goddard's "The Moral Theory of Music" (1857)—an important precursor to the evolutionary music theories of Herbert Spencer and Charles Darwin—treats musical tones as both non-representational *and* direct reflections of thoughts and feelings (43).

In examining this new philosophical dimension for music that emerged alongside Victorian evolutionary science, this dissertation adds a critical perspective to the resurgent field of evolutionary musicology. For much of the twentieth-century, English-language music scholars were reticent to speculate about the evolution of music. As Peter Kivy noted at mid-century, ideas about music's evolutionary origins were seen as too "speculative" to be afforded serious attention (1962, 328-29). Evolutionary musicology's reputation of unseriousness was compounded by the fact that many music-evolutionary theories reflected transparently ethnocentric accounts of music, with Western musical culture perched at the top of a racist chain of excellence.[3]

In the last few decades, however, studies of music's evolutionary origins have been revitalized. A New Evolutionary Musicology, as we might call it, began to cohere in the 1990s and early 2000s. Some significant contributions therein include Ian Cross' "Is Music the Most Important Thing We Ever Did? Music, Development and Evolution" (1999), Anne Fernald's "Human Maternal Vocalizations to Infants As Biologically Relevant Signals: An Evolutionary Perspective" (1992), David Huron's "Is Music an Evolutionary Adaptation?" (2001), and the edited collection *The Origins of Music* (2000).[4] This revival is not altogether unprecedented; aspirations to an evolutionary level of explanatory power have gone in and out of fashion over the last 150+ years.[5] Now, evolutionary musicology is back. We have entered a new "speculative" moment, to borrow Kivy's word.

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[3] For examples and discussion see Allen 1962 [1939], Zon 2007 and 2017.
[4] I also point to Justus & Hutsler 2005, Levitin 2008, McDermott & Hauser 2005, Panksepp & Bernatzky 2002, Panksepp & Trevarthen 2009, Patel 2008. An extensive review of literature is given in van der Schyff & Schiavio 2017.
[5] See Ames 2003, Mundy 2010 and 2014, Rehding 2000.

The results of these recent evolutionary speculations have been rich and varied. Rigorous and politically thoughtful studies by Aniruddh Patel (2010), Gary Tomlinson (2015, 2018), and Dylan van der Schyff (2013) have meaningfully advanced our understandings of music's evolutionary history, while also helpfully reinforcing the idea that human diversity and difference are not reducible to genetic or environmental phenomena.[6] But many other recent contributions to evolutionary musicology retain reductive views of the discipline's own history, or else use evolutionary theory misleadingly to describe idiosyncratic musical practices as preordained by biology (Charlton 2014, Miller 2000). For instance, studies that begin with the Darwinian idea that sexual selection holds an outsize degree of causal importance for biological variation have tended to advance controversial adaptationisms,[7] thereby contributing to sketchy interpretations of evolutionary science in a similar vein as "Literary Darwinism" or "evolutionary aesthetics."[8] Some scholars continue to treat non-Westerners and their musical practices as examples of less-evolved musical adaptations.[9] Others continue to describe cultural evolution misleadingly as a teleological line of ascent from primitive musical expression to more advanced forms, much in the same way that Victorian evolutionary scientists like Spencer did.

In re-reading historical evolutionary treatises, I offer a set of critical approaches that can be brought to bear on historical thought, as well as the contemporary convergence of music studies and evolutionary thought. My historical focus is on the nineteenth-century beginnings of evolutionary science in Victorian Britain, where thinkers like Darwin, Gurney, and Spencer

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[6] See my review of Tomlinson's work (Piilonen 2019).
[7] The philosophical terms of evolutionary biology's ongoing debate over adaptationism is captured succinctly in Peter Godfrey-Smith's "Three Kinds of Adaptationism" (2001).
[8] For a valuable critique, see Jonathan Kramnick's "Against Literary Darwinism" (2011), as well as his response to critics (2012).
[9] As much as possible I avoid citing work in the negative because I do not want to give them attention. Exceptions will be made in chapter 6, for the sake of a specific critical argument.

brought music to bear on their discussions of things like the nature of sonic perception, the development of complex speech, and the differences between primitive and advanced forms of social interplay. These early evolutionary scientists consistently deferred to musical structures like tone, pitch, rhythm, harmony, and timbre. Doing so helped them explain in precise terms the border (or non-border) between human and non-human. I pay special attention to the role that emotion often plays therein. Darwin, for one, posits a sexual selection-origin for music, where musical feeling is analogized with amorousness (1871). This facilitates the establishment of a pre-human origin for music in the mating calls of animals and early humans. Gurney organizes his evolutionary account of music around the pleasure of listening to well-made melodies (1880). This leads to a Darwinian account of music psychology, where the pleasure of music can be explained as embodied memories of primal scenes of erotic courtship. Spencer (1902) describes the irritation of having a song stuck in his head as evidence against a classical model of the self—for what rational, self-knowing person would actually *enjoy* having catchy tunes on mental repeat? I draw attention to these musical theories of emotion because they shed light on the ways that emotion was being reconfigured as an element of the human species' evolutionary descent. In my work, I incorporate ideas from recent turns to embodiment and materiality in music studies to probe the ways that evolutionary theorists wrote about musical emotion. In so doing, my work demonstrates how models of perception that emphasize music's corporeal grounding have led to naturalizations of aesthetic judgments as easily as the "incorporeal" models they critique.

Victorian evolutionists saw music as an important aspect of human species-being, in that music served to clarify and complicate ideas about (inter)subjectivity, psychology, language, and

sensation.[10] For Darwin, music is a kind of proto-language that is common to humans and animals alike; he hears the songs of birds and the chirps of mice as musical (1872; 1874). Herbert Spencer, on the other hand, views music as a specifically human stage of evolutionary advance beyond language acquisition (1857). For thinkers like Edmund Gurney, music is a formalized mode of attention that distills and makes perceptible important features of human psychology (1880). And in a tradition that runs from George Eliot to Walter Pater, music is a useful metaphor for interstitial or ineffable things (Eliot 1871, Pater 1888). These competing views establish radically different perspectives on the origin and function of music in human cultural expression. In addition to testing relationships between humans and non-humans, music-evolutionary thinkers participated in an emerging scientific racism that reflected the expansionist mission of imperial Britain. For instance, when Victorian music scholars like Sir Hubert Parry developed evolutionary accounts of music history, they claimed that non-Western musical traditions were the less-evolved precursors to European classical traditions (see, for instance, Parry's *The Evolution of the Art of Music* [1893][11]). Incorporating strategies from feminist, queer, and post-colonial theories, I show ways that historic ideas about music's evolutionary origins have been dehumanizing.

In "Resonating Subjects," I reconstruct historical theories about music and evolution and I describe listening phenomena associated with evolutionary musicology. I do not try to unlock the "truth" of music's origins. Rather I show that ideas about evolution affect how music is heard.

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[10] For accounts of Victorian musical culture and associated themes, see research by Charles Brotman (2005), Ruth Solie (2004), Nicholas Temperley (1988), Bennett Zon (2007, 2012, 2013, 2014a, 2014b, 2017). See also Alexander Rehding's "The Quest for the Origins of Music in Germany Circa 1900" (2000).

[11] In this book's preface, Parry thanks "Mr. Herbert Spencer" in particular "for communications about the dancing and music of savage races" (1905, v).

And I show that how music is heard affects how the human species is imagined in relation to other species.

Evolutionary Claims Are Ontological Claims

One of this dissertation's organizing convictions is that evolutionary claims are ontological claims. By this I mean that they draw on and help to advance ideas about "what music is." In order to explore the ways that evolutionary claims about music can function as ontological claims, one must first accept that "music" is an ontologically unstable category. In Phillip Bohlman's words, "Music may be what we think it is; it may not be" (1999, 17-19). In this dissertation, I argue that when evolutionary thinkers put forward ideas about musical origins—whether this means recovering deep histories of musical traits, reconstructing so-called *Ur*-form of music, explaining music-evolutionary processes, or predicting a musical future based on evolutionary principles—they are implicitly making a case for the very essence of music. My effort to unpack evolutionary musicology's ontologizing potentials is part of a larger imperative for music theorists to grapple openly with the political and ethical consequences of shifting the ground of "music itself." I argue that one way of doing so is by revisiting and critiquing the claims of historical music theories. My focus here is on developing a critical history of evolutionary musicology with an eye toward disrupting and intervening in music-evolutionary questions as they occur in the present.

Throughout this dissertation I work to sensitize readers to evolutionary musicologists' tendency toward "depoliticized speech," to borrow a phrase from Roland Barthes (1972 [1957], 142-56). Depoliticized speech (which Barthes also calls "myth") will tend to describe its object of interest as a natural given, rather than the result of a history that could have been different. To

see de-politicized speech in action, consider a recent confrontation among three music scholars over the idea of political neutrality within musicology. In a 2013 paper, Patrick Savage and Steven Brown proposed a "new comparative musicology" comprised of five major themes: biological evolution, cultural evolution, classification, human history, and universals. A year later, David Clarke critiqued Savage and Brown's proposal on grounds of reductionism. For Clarke, Savage and Brown's model is epistemologically at odds with ethnomusicological modes of inquiry, where scholars "are interested in the *particularities* of a culture and the *actual experience of encounter in the field*" (2014, 11-12, emphasis added). In Clarke's words, a comparative musicology rooted in Savage and Brown's model of cultural evolution would be "based on the abstraction of music and people into data" and it would aspire to a problematic "political neutrality" (2014, 6-12). Savage responded independently to Clarke's critique by doubling down on what he saw as his own "relatively neutral political stance" (2019, 8) contending "it is legitimate to try to limit political aspects in one's published works" (Ibid., 8). Like all depoliticized speech, Savage's model and response presumes no political opposition to its claims and falsely presents its own conclusions as politically neutral. The prefix "de-" in Barthes figuration of depoliticized speech implies an impossible action of removal. This dissertation's reading method inheres the basic conviction that there are no truly apolitical forms of speech. Thus when I say "all evolutionary claims about music are also ontological claims about music," I am inviting scholars to grapple with the political dimensions of their ontologies of music openly.

Evolutionary accounts of music are not just ontologies of music. They are also *ontologies of the human*, in the sense that they invoke ideas about "what a human being is." In the context of Victorian Britain, this can be related to the belief that the development of music tracks with

the emergence of the human from lower forms of life, and thus to the belief that the history of humankind can be recovered alongside an account of the ascent of music. As philosopher Sylvia Wynter (2003) has pointed out, ontological accounts of the human species historically have been poor at describing human difference with any nuance or precision. In her account of the emergence of secular-ontological accounts of the human, Wynter recounts how colonial conquest led to an equation of the human with white Western bourgeois masculinity. Wynter warns against speaking of the human in singular monolithic terms. For her, an Enlightenment notion of humanity that is treated "as if it were the human itself" indexes a problematic recentering of white Eurocentric humanism (2003, 259). In this dissertation, I approach the political and social consequences of ontologizing about musical being through posthumanist and anti-humanist critiques of evolutionary science like Wynter's.[12]

I also draw inspiration from critiques of Ideal Theory leveraged by Charles Mills, who himself borrows from the feminist writings of Onora O'Neill (1987, 1993). In Mills' "'Ideal Theory' as Ideology" (2005), he describes how instances of ideal theory (representations of what things *should* be like) often serve to rationalize a status quo by reflecting "illicit group privilege" (167). I show that early evolutionary theorists' accounts of music and human nature often functioned as instances of ideal theory, such as in Spencer's teleological account of musical progress or Gurney's treatment of melody as the most important element of music. Critiquing evolutionary theories for their tendencies toward ideal theory is nothing new; my work is further indebted to the work of abolitionist and advocate for women's rights Antoinette Blackwell,

[12] See also Tiffany Lethabo King's "Humans Involved: Lurking in the Lines of Posthumanist Flight" (2017), Zakkiyah Iman Jackson's "Review: Animal: New Directions in the Theorization of Race and Posthumanism" (2013), and Tyrone Palmer's "'What Feels More Than Feeling?': Theorizing the Unthinkability of Black Affect" (2017).

particularly her book *The Sexes Throughout Nature* (1875). One of Blackwell's signature claims is that Darwin and Spencer misrepresent the evolution of sex differences by excluding the insights of women scientists. I take Blackwell's cue to reflect critically on the ways that narrow assumptions about gender and sex feed into ideas about the place and function of music in human cultural practice, and vice versa.

So, this dissertation is really about two subjects. The first subject is Victorian evolutionary accounts of music. The second is the cultural legacy of evolutionary musicology, which has become newly relevant to us as we witness the reemergence of the field. This dissertation treats Victorian speculation about music's evolutionary origins as an important laboratory for testing various philosophical problems raised by *all* evolutionary accounts of music. By taking this kind of critical approach, and by paying special attention to the role of emotion in evolutionary writings, I interpret early music-evolutionary theories as a series of strategies that serve to prescribe and reinforce a *felt musical norm*.[13] Put differently, I show that by referencing music as a key example of the nature of evolution, thinkers like Darwin, Spencer, and Gurney implicitly tried to naturalize *what it feels like* to be properly human.

Contributions and Review of Literature

My research contributes to three fields: (1) **evolutionary musicology**, (2) **music theory**, and (3) **critical theory**. (1) To **evolutionary musicology** (the study of music's origins) I read and interpret recent scholarship and I offer a critical history of the field that helps contextualize

[13] To some my work will scan as broadly Foucauldian in orientation (Foucault 1994).

its competing ideas.[14] Recent studies of music's origins tend to be identified as either "adaptationist" or "nonadaptationist." These terms—notably brought to evolutionary musicology by Aniruddh Patel (2010)—distinguish between the idea that music is an evolutionary adaptation (adaptationism) and the idea that music is a cultural invention with no adaptive function (nonadaptationism). I unpack the history and implications of the adaptationist / nonadapdationist division, as well as associated tendencies to demarcate a strict biological or cultural origin for music. I do not seek to advocate for one view over another. Nor do I combine adaptationist and nonadaptationist views into a unified "biocultural" perspective, as scholars like Tomlinson have done. Rather, I see evolutionary musicology as an inherently speculative field where conceptual tensions can be left unresolved.

By thinking historically and critically about the problem of music's origins, I show that music evolutionism—and the divergent ways its logics have been (mis)interpreted—should be considered together, as idiosyncratic "evolutionary" ways of listening. For an example of an evolutionary way of listening, consider evolutionary theorist Geoffrey Miller's often-cited argument that Jimi Hendrix's promiscuous lifestyle is evidence of Darwin's suggestion that music's function is for mate selection (2000). With this claim, Miller propagates an aggressively mechanical relationship between music and sexuality. He sees this musical-erotic fission as a universal truth, verified by "scientific" methods and endorsed by retro-fashionable figures like Darwin. I argue that Miller's quasi-Darwinian view of music is problematic, not just for its gendered and heteronormative assumptions, but for taking too literally Darwin's speculative

[14] In addition to the literature cited elsewhere in this dissertation, I point to Ian Cross' work (2001, 2003, 2005, 2009) as well as the following: Bannan 2012, Brown 2004, Cross & Morley 2009, Davies 2012, Hauser & McDermott 2003, Killin 2016, Morley 2002 and 2013, Panksepp 2009, Peretz 2006, Phillips-Silver *et al.* 2010, Ravignani *et al.* 2014, Schulkin & Raglan 2014, Snowden *et al.* 2015.

comment about music—Darwin himself complicated his musical ideas in *The Expression of the Emotions in Man and Animals* (1872). By showing that Miller's misreading of Darwin and his hearing of Hendrix's music feed into one another, I show that proverbially scientific views of music can emerge from and reinforce seemingly natural ways of hearing music.

(2) Music evolutionism is closely connected to **music theory** and many relevant scholars work across both disciplines.[15] It is surprising, then, that so little attention has been paid to the musical claims implicit within the history of evolutionary thought about music, particularly its nineteenth-century beginnings.[16] My project offers to music studies a method for attending to the role that music has played in ideas about music's evolutionary origins. My primary texts are the early evolutionary treatises that double as theoretical accounts of music's origins, from Darwin's *The Descent of Man* (1871) to lesser-known works by Herbert Spencer and Edmund Gurney; I both close-read these texts and examine their music theoretical claims.

Furthermore, in describing and reflecting on the music theories of these early evolutionary thinkers, I investigate the complex significances they hold for us in the present. For instance, in exploring the import of Spencer's phenomenology of the earworm, I reflect on songs I myself have had stuck in my head (of late: "better off" by Ariana Grande). The pleasure I experience as the conduit for an earworm puts me at odds with at least one recent account of the earworm as a "malfunctioning" of the mimetic processes upon which "we depend for comprehension of speech and music" (Cox 2011, fn. 17). In my dissertation, I delight in such moments of analytical

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[15] One area of music theoretical research that has been key for evolutionary theories of music is the study of beat induction. See, for example, Clark 1999, Fitch 2005 and 2009, Molinari *et al.* 2003, Patel *et al.* 2009, Todd *et al.* 2007.

[16] Works by Charles Brotman, Peter Kivy, and Bennett Zon works are notable exceptions, though my project differs substantially from theirs in terms of its central thematics, relative scope, and interpretive style.

friction, which help reveal the subtler differences between a given pair of music theories, and which engine my dissertation's broader conviction: that music-evolutionism is as much a social and philosophic enterprise as it is a scientific or technical one. Thus my work contributes to both *history of music theory* and *philosophy of music.*

This dissertation also contributes to understandings of music as a material and environmentally-situated phenomenon. For instance, in Holly Watkins and Melina Esse's "Down with disembodiment; or musicology and the material turn" (2015) they advocate for an understanding of musical practice as embodied action; in Maeve Sterbenz's (2017) feminist music-analytic paradigm, the relationship between musical sound and bodily motions figures centrally in constructions and interpretations of musical meaning; and in Peter Martens' (2016) "update" on music theory's turn toward the body, he notes that music theorists have long since moved away from the primacy of written notation and toward music as heard.[17] As many scholars have shown, the turn to music-listener interaction effectively places conceptual emphasis on the individuals and technologies that do the labor of making music. This is sometimes seen as an explicitly political gesture that works to destabilize the hegemony of idealized musical works or of autonomous composer-geniuses.[18] My work participates doubly in

[17] In Martens' review, he advocates for the use of embodied methods in music analysis and credits Andrew Mead's advancement of "Bodily Hearing" in a 1999 issue of the *Journal of Music Theory* for early interest in such ideas*,* followed by essay collections edited by John Rink (2002) and two issues of *Music and Gesture* (Gritten & King 2006; 2011). This genealogy of "music and the body" offered by Martens is unfortunate, as it does not give credit to the feminist and queer music theorists who engaged the body before it was popular to do so. Martens fails to cite Suzanne Cusick's "Feminist theory, music theory, and the mind/body problem" (1994) and Fisher and Lochhead's "Analyzing from the body" (2002), among others. Sterbenz (2017) implicitly corrects this.

[18] See Born 2010, Butler 2006, Cimini 2011, Cox 2016, Godøy & Leman 2010, Naveda & Leman 2010, Phillips-Silver & Trainor 2005 and 2007, Schiavio 2014, Toiviainen, Luck & Thompson 2009a, and 2009b, as well as edited collections by Bloechel, Lowe & Kallberg (2015)

this turn toward music-listener interaction, 1) by reconstructing Victorian evolutionary theory's perspectives on the embodied and ecological nature of musicality and 2) by building on the interpretive strategies of music scholars like Mark Butler (2014), Eric Clark (1997, 2005, 2012), and Suzanne Cusick (1994, 2008, 2012, 2013) in my own set of music analyses. To give just one example, I show how Spencerism potentiates a radical, relational view of musical emotion, whereby the emotional force of music emerges from the material "correspondence" between listener and musical object and thus is neither entirely here nor there. This undermines the dominant view of musical emotion as *expressed* by either the music or the listener, and opens up new conceptual and interpretive possibilities for music theorists.

(3) While my work shares many features with recent music theoretical work, it is unique in its engagement with and modification of recent scholarship in **critical theory**, specifically the subfields of posthumanisms and affect theories.[19] My research brings music back to the foreground of these research areas, where it otherwise tends to be invoked as an effervescent tool for describing ineffable, ambiguous, or natural things.[20] I balance music's seeming ineffability with the rigorously formalist and socially-engaged approach offered by recent music theory, showing that music's distinct qualities and challenges can enrich conversations about (for example) language, emotion, and identity. This helps me achieve a more implicit goal of my dissertation: extending the cross-disciplinary reach of Music Theory.

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and Jensen-Moulton, Straus & Lerner (2015). For review of embodiment research in music theory, see Kozak 2012.

[19] Texts that have influenced my work include Ahmed 2014, Barthes 1977, Bennett 2010, Braidotti 2013, Brennan 2004, Brinkema 2014, Cumming 2000, Derrida 2008, Halberstam & Livingston 1995, Haraway 1991, Hayles 1999, Langer 1941 and 1953, Massumi 2002, Morton 2010, Pettman 2017, Scott & Wynter 2000, Weil 2010, and Wolfe 2010.

[20] See, for instance, the chapter "Tone" in Sianne Ngai's formidable monograph *Ugly Feelings* (2005, 38-88).

I also cross between the arts and sciences by historicizing scientific views of music's origins.[21] For example, consider Darwin's view of music. Darwin hears certain animal sounds as musical, usually those that exhibit aspects of Western tonal structures. This analogy of the natural world with the concert hall has implications both for his own explicitly aestheticized love of natural order and for the ways Western music is often conceived as modeled on nature.[22] By staging a dialogue between contemporary and historic conceptions of music and evolution, I bring scientific modes of thinking to music, broadly considered, while simultaneously subjecting scientific modes to humanistic scrutiny. I thereby contribute to increasingly urgent considerations of what counts as knowledge, evidence, authority, and truth in musical thought.

Chapter Summaries

The project consists of eight chapters, plus an introduction and conclusion. In **Chapter 1 ("Herbert Spencer Writes to Alfred Tennyson")**, I introduce Herbert Spencer's evolutionary theory of music through an admiring letter (or rather, a thinly veiled request for endorsement) that Spencer wrote to the famous poet laureate soon after publishing his treatise *The Principles of Psychology* (1855). I close-read this letter in order to situate Spencer's theory of perception within the emerging field of Victorian psychology and at the forefront of evolutionary science.

In **Chapter 2 ("Herbert Spencer Versus Charles Darwin")**, I compare Spencer's and Darwin's competing evolutionary accounts of music's origins. Where Darwin understands music as an unconscious proto-language that emerges alongside instinctual urges for domination,

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[21] As a contribution to the history of science, my work is indebted to Thomas Kuhn's landmark book *The Structure of Scientific Revolutions* (1962).

[22] See Suzannah Clarke and Alexander Rehding's edited collection *Music Theory and Natural Order* (2001).

conquest, and sexual reproduction (1871, 1872), Spencer describes music as an advanced province of the human species, which alone possesses the emotional "force" and "variation" (1857, 398-400) necessary for musical expression. In sharpening the distinctions in this evolutionist debate, I offer a close reading of what Spencer sees as an emblematic musical experience: the earworm. For Spencer, having a song stuck in his head is evidence against the idea of a unified personality or "Self," and a blow to the metaphysics of autonomous subjectivity. This accords with his broader theory of emotion—first put forth in his *Principles of Psychology* (1855)—which is "nonsubjective." By nonsubjective, I mean his theory of emotion troubles earlier accounts of the human subject as self-contained, autonomous, and endowed with mental abilities completely unlike those of animals.

Highlighting this nonsubjective dimension to Spencer's theory of emotion is the first signal I make toward an account of how musical emotion was depicted by Victorian evolutionary science. I argue that evolutionary musicologists from Spencer onward grappled with models of musical emotion that present challenges to the human subject's self-containedness. Instead, they emphasized instead the human's dynamic interconnectedness with other entities. Although nonsubjective accounts of emotion have become endowed with a liberatory character through recent affect theory, I show that in the case of early music evolutionism they functioned repressively by naturalizing the ideals of specific musical traditions as biological axioms.

In **Chapter 3 ("ANALYSIS I – A Spencerian Theory of Earworms")**, I develop Spencer's ideas about music, emotion, and subjectivity into a demonstrative analysis of the phenomenon of the earworm. I bring Spencer's ideas about emotion and subjectivity into contact with contemporary studies of earworms, subjectivity, and embodied music cognition in order to excavate some minor aesthetics associated with "stuck song syndrome." Through Spencer's

sense that the earworm represents a kind of intrusion upon the self, I explore ways that earworms vivify a sense of dynamism between subject and external world through sound. I demonstrate that thinking nonsubjectively about emotion can help vivify and complicate colloquially unusual features of human cognition, such as the experience of having a song stuck in your head, and I show how this is generative for music analysis. Importantly, this analysis is foregrounded by the anti-oppressive injunctions described in this dissertation's Introduction and is not meant to be an evolutionary argument about the earworm. Rather, I treat Spencer primarily as a philosopher, in order to explore what kinds of musical meanings are made possible by nonsubjective speculations about musical origins.

In **Chapter 4 ("Music and Language in Spencer's Evolutionary Thought")**, I examine more closely the mimetic theory that undergirds Spencer's injunction, "All music is originally vocal" (1857, 397). By this he means that all music originates in vocal expression, that is, in impassioned speech, which he claims evolved first. In "The Origin and Function of Music" (1857), Spencer tracks a questionable line of ascent from simple vocal exclamations, to complex speech, and finally to music. An increasingly dynamic emotional capacity (one that is specific to the human) gets expressed and evidenced by an equally dynamic musical capacity; Spencer's vision of musical progress tracks with his conception of a special capacity for emotional progress that is unique to the human species.

The Spencerian idea that sonic expressivity evolved teleologically from simplicity to complexity reflects his more general theory of evolutionary progress, and anticipates certain

modernist aesthetic ideologies.[23] Because some of the subtler aspects of Spencer's theory of music demand investigation into his theory of language as well, I spend a large portion of this chapter examining his statements about language. In close-readings of Spencer's essays—such as "Progress: Its Law and Cause" (1881) and *Philosophy of Style* (1884)—I highlight the *mimological* core of Spencer's thought, that is, the idea that language began as sonic imitation of the phenomenal world. "Mimologics" is Gérard Genette's term for theories of language that invoke a mimetic origin or function. By locating Spencer within Genette's much longer mimological tradition—alongside Plato, Gottfried Leibniz, John Locke, and Max Müller, among others—I bring overlooked philosophical dimensions of his mimetic hypothesis to the fore and grapple with them in fresh terms. In **Chapter 5 ("Mimologics in Contemporary Evolutionary Musicology")**, I continue with this philosophical mode of inquiry by reflecting on mimologics latent within recent evolutionary accounts of vocal expression, with special attention paid to Gary Tomlinson's evolutionary musicology.

Chapters 6 and 7 are concerned with what I call the *Darwinian musical hypothesis*—Darwin's idea that music's origins are in sexual selection. **Chapter 6 ("The Darwinian Musical Hypothesis")** examines Darwin's theory of music's erotic beginnings. I open the chapter by critiquing two recent studies where scholars purport to prove the Darwinian musical hypothesis right. In these "strict" interpretations of the Darwinian musical hypothesis, scholars draw on Darwin's ideas about music to prop up misogynist and ethnocentric accounts of musical creativity and progress. I focus my critical reading on their problematic appeals to Darwin and I offer a re-reading of Darwin's ideas that help to show what is interesting about what he has to

[23] Progress, for Spencer, is the principle underlying every aspect of the universe. Music is one example of the human species' advancement beyond "primitive" vocal communication, and apparently beyond the highly emotive forms of speech used by poets and "great orators."

say about music, as well as why he is not the most useful authority on the subject. In *The Descent of Man* (1871) and *The Expression of the Emotions in Man and Animals* (1872), Darwin postulated that music plays a primeval role in sexual selection and procreation. Having observed the sonic behaviors of animals during mating season, Darwin extrapolated their meanings to early humans, arguing that musical displays are emblematic of the strong emotions that define both human and non-human courtship rituals.

While my attitude toward what I call strict readings of the Darwinian musical hypothesis is negative, I nevertheless want to explore the music-analytical potentials Darwin's metaphorical equation of musical feeling with erotic sensation, in order to formulate alternate uses of the Darwinian musical hypothesis. In **Chapter 7 ("ANALYSIS II – Music As Sex")**, I develop an approach to the Darwinian musical hypothesis that emphasizes Darwin's metaphorical equation of music with sex, rather than his adaptationism. With recourse to recent feminist and queer theory, I develop a Darwinian analogy between music and sex that is not reducible to reproductive instinct.

I focus on erotic listening experiences of my own, with recourse to recent phenomenological approaches to music analysis like Kate Heidemann's (2016). I focus my analytical attention on a track that is famous for invoking sexualized listening experiences: Jeremih's "All The Time" (featuring Lil Wayne and Natasha Mosley). Wanting to compare my own experiences listening to this song with the experiences of others, I turn to track commentaries available on the internet, specifically in YouTube comments. By reflecting on ways that YouTube commenters use ordinary language to develop and exchange ideas about musical eroticism, I clarify and complicate what it means to listen in an erotic way. I pay special attention to YouTube commenters' uses of the term "mood," which I understand to mean "the

feeling of the whole song" or "the atmosphere or pervading tone of the track." I develop an analytical tool, *listening for mood*, that reflects and modifies colloquial descriptions of "the feeling of the whole song." Ultimately my analysis of what sounds sexy about "All The Time" adds up to an argument about the Darwinian musical hypothesis. Music's eroticism can be conceived as a dynamic element of musical life that is contingent upon the specific contexts in which the music is heard, and thus often curves the expectations established by strict Darwinian readings. I argue that even when musical experiences are directly sexual, this does not automatically ratify Darwin's musical rule. My analysis thus affirms a queer injunction offered in author C.E.'s radical manifesto "Undoing Sex": "*If there is something of a species-being that remains in me, it seems irretrievably lost*" (2012, 31).

In **Chapter 8 ("Edmund Gurney's Darwinian Music Formalism")**, I examine Edmund Gurney's account of music in *The Power of Sound* (1880) as an instance of ideal theory, in Mills' sense. I pay special attention to Gurney's Darwinian treatment of musical form, which differs meaningfully from stereotypes about formalism that have recently led to a widespread suspicion of analytical programs that examine "the music itself."[24] Gurney developed Darwin's ideas about music's origins in sexual selection into a theory of musical pleasure, according to which music arouses a special mode of ineffable feeling that dimly recalls primal scenes of courtship and domination. In this chapter, I extract Gurney's Darwinian theory of musical pleasure and I probe his brand of music formalism.

At this dissertation's conclusion, I define what I call the "post-Darwinian" state of music evolutionism. In the post-Darwinian age, it can be argued that our music theories must consistent with the fact of evolution. And yet the history of music evolutionism shows us that evolutionary

[24] See, for instance, Joseph Kerman's "How We Got Into Analysis, and How to Get Out" (1980).

theory can be an especially limiting way of engaging with music. Being post-Darwinian is especially interesting for music theorists, given that our field has historically seen itself as half science and half art.[25] I point to the present state of thought about musical origins, from evolutionary theorist Steven Pinker's hearing of music as evolutionarily useless (1995), to new empirical studies of music's evolutionary proliferation,[26] to philosopher Kathleen Higgins' sense that music can help people become "more humane" by virtue of its shared natural origin (2012). Ultimately my work reinforces the idea that music has as much power to alienate as it does to bring together. In other words, even if music can be conceived as a singular monolithic thing, or a "universal language," it has never guaranteed universal understanding.

[25] This is especially evident in the collection of essays that comprise the *Cambridge History of Western Music Theory* (2002).
[26] See, for instance, research being published through Harvard's The Music Lab.

CHAPTER ONE

Herbert Spencer Writes to Alfred Tennyson

Shortly after Herbert Spencer published his *Principles of Psychology* (1855), he penned a letter to the poet laureate Alfred Tennyson:

> I happened recently to be re-reading your Poem 'The Two Voices,' and coming to the verse
>
> "Or if thro' lower lives I came—
> Tho' all experience past became
> Consolidate in mind and frame—"
>
> it occurred to me that you might like to glance through a book which applies to the elucidation of mental science the hypothesis to which you refer. I therefore beg your acceptance of *Psychology,* which I send by this post. (Duncan 1908, 101)

Unfortunately for Spencer, any perceived affinities between him and Tennyson were strictly unidirectional. Tennyson never wrote back and most of the pages of his copy of Spencer's *Psychology* were left uncut (Tate 2009, 61-62). Tennyson appears not to have made it past Part I, where Spencer describes human mental action as an embodied product of evolution, rather than an immaterial or divinely-given phenomenon. Had Spencer anticipated how short Tennyson's attention span would be, he might have urged the poet to begin with Part III, the "General Synthesis." In Spencer's *Autobiography,* he notes: "Part III was written first: the reason being, I believe, that it contained the fundamental conception which pervades the entire work; and I was anxious to put this conception down on paper in its complete form" (1904 vol. 1, 536). This

fundamental conception is the Spencerian idea that all aspects of life operate by the principle of "correspondence," that is, the constant negotiation between organism and environment. "Though we commonly regard mental and bodily life as distinct," Spencer writes, "it needs only to ascend somewhat above the ordinary point of view, to see that they are but sub-divisions of life in general; and that no line of demarcation can be drawn between them, otherwise than arbitrarily" (1855, 349). Spencer's sense that the mind is radically integrated with the body, such that all aspects of life can be understood as dynamic "motions" (Ibid., 350) would later become entwined with his ideas about music.

Although the correspondence between Spencer and Tennyson was over before it began, Spencer's letter provides an access point into his early thinking, as well as a sense for his place in the broader terrain of Victorian psychology. His reading (or rather his selective misreading) of Tennyson's poem "The Two Voices" serves as a roving spotlight: illuminating passages that align with Spencer's own ideas about material evolution and leaving dark the rest. The full poem dramatizes its narrator's contemplation of suicide through an imagined dispute between the "voice" of cynical self-negation, on the one hand, and the voice of desperate idealism on the other. The poem's metaphysical commitments alternate between embodied mind and immaterial soul, fragmented ego or immutable identity, and the descent of species versus divine creation. In the verses quoted by Spencer in his letter, the narrator briefly contemplates his place within a cosmology ordered by material evolution ("Or if thro' lower lives I came—"), an idea Tennyson gleaned from the writings of Arthur Henry Hallam, as well as his own father.[27] But ultimately the poem's final conception of mind is left as ambiguously defined and schizophrenically practiced

[27] See Tennyson 1897 (1-44) referenced in Tate 2009. See the latter for discussion of Tennyson's interest in evolutionary theories.

as that of the broader terrain of Victorian mental science.[28] It is within this messy terrain—both poetic and historical—that Spencer's ideas stood out.

Later in Spencer's career, his ideas about the physiological basis for consciousness would become known the world over. But this was before all that. Spencer's missive to Tennyson, though penned in the flattering language of fan mail, mainly represents his effort to secure an endorsement. Indeed, sales of *Psychology* were flagging and Spencer's friend George Henry Lewes had recommended he distribute copies to leading intellectuals. In a letter from Spencer to his mother Harriet, dated March 31, 1856, he writes, "At the suggestion of Lewes I have been distributing about thirty copies of the 'Princ. of Psy.' among the leading men of science and philosophy" (1904 vol. 1, 590). In Spencer's *Autobiography*, where this letter is copied, he explains the letter's context: "Doubtless Lewes had made this suggestion on learning from me that there was very little sale of the *Psychology,* and on thinking that some use might be made of it by distribution if not otherwise" (Ibid., 590-591). Decades later, after Spencer had achieved worldwide fame as a philosopher of evolution, Karl Marx made use of the same strategy, sending a copy of *Capital* to Spencer in the hopes of boosting its English reputation. Upon learning that Spencer did not read German, Marx followed up with a French translation. Unfortunately, Spencer's French was as poor as his German (Paul 1994, 561).

In the next phase of Spencer's writing career he continued to develop his theory of matter's "evolution" from homogeneous simplicity to heterogeneous complexity.[29] In 1857—two years before Darwin's *Origin of Species*—Spencer offered a theory of origins where music

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[28] The richly fraught field of Victorian mental science was closely related to the period's writings on art and literature, as demonstrated in Rick Rylance's *Victorian Psychology* (2000) and Nicholas Dames' *The Physiology of the Novel* (2007).

[29] See in particular Spencer's "Progress: Its Law Cause" (1881 [1857]). See also his *First Principles* (1867), where the principle of evolution is shown to undergird all aspects of existence.

represents a specifically human stage of evolutionary advance, beyond linguistic acquisition. In his seminal essay, "The Origin and Function of Music," he described music as a material development beyond language. He argued that music and language are both grounded in a universal axiom of physiology known as *reflex action*, that is, the direct connection between emotion and movement. In *Psychology*, Spencer had defined reflex action, in its most general form, as "the sequence of a single contraction upon a single irritation" (1855, 533). Carrying this idea forward into "The Origin and Function of Music," Spencer writes:

> All music is originally vocal. All vocal sounds are produced by the agency of certain muscles. These muscles, in common with those of the body at large, are excited to contraction by pleasurable and painful feelings. And therefore it is that feelings demonstrate themselves in sounds as well as in movements. (1857, 397)

By tracing the origins of musical expression to primal physiology, Spencer located music within evolution more generally, and treated it as a mark of progress. In his later works, Spencer would recount the principles of material evolution at work everywhere, from the growth of plants from seeds, to the rise and fall of empires, to the births and deaths of planets, to the emergence of the human mind. By innovating the principle of reflex action, Spencer was able to locate the distinctions between various forms of life at the penumbra of embodied sensations. He writes, "A vague manifestation of this sequence [of reflex action] marks the dawn of sensitive life… animal organisms are broadly distinguished from vegetable organisms by the peculiarity that they move on being touched, or otherwise impressed" (1855, 533).

Although *Principles of Psychology* had had a slow start, Spencer's popularity quickly grew. At the peak of his influence, his intellectual achievements were compared with those of

Aristotle, Kant, and Hegel; his *First Principles of a New Principle of Philosophy* (1863) was placed alongside the writings of Newton and Laplace.[30] He had national and international followings; editions of his works were published in seven languages (German, Italian, Spanish, French, Russian, Japanese, and Chinese).[31] The "Spencerian" became a familiar figure in nineteenth-century fiction—in Anton Chekhov's novella *The Dual,* the protagonist Ivan Andreich Laevsky describes his lover as "a woman who has read Spencer and has followed [me] to the ends of the earth" (2003, 120). Spencer's strongest following was in the United States where his thinking was seen to affirm the American way of life (Moore 1979, 168), particularly the Emersonian idea of self-reliance (Jacoby 2004, 142). Near the turn of the century, three Supreme Court justices were avowed Spencerians: Stephen Field, David Brewer, and Rufus Peckham (Kennedy 1978, 120). Famed intellectuals positioned their own thinking alongside or in opposition to Spencer's, including William James, Friedrich Nietzsche, Henry Bergson, and Emile Durkheim.[32] His influence can be measured not only in citations but in sales. It has been estimated that Spencer was the first philosopher in history to sell a million copies of his works within the span of his own life (Taylor 2007, 4). He counted among his friends some of the leading radical thinkers, among them John Chapman, John Stuart Mill, George Henry Lewes, and Mary Ann Evans (George Eliot).

More than a stereotyped "social Darwinist," Spencer was a lauded scientist and philosopher in his own right—it is perhaps more historically accurate to call Darwin a "naturalist

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[30] See, for instance, Allen 1904, 628.
[31] For accounts of Spencer's national and international followings, see Balan 2003, Beck 2004, Chatterjee 2003, Gransow 2003, and Nagai 1954.
[32] Many of the sources cited above—and many more that deal with Spencer's influence—are cited and discussed in the first chapter of Michael Taylor's *The Philosophy of Herbert Spencer* (2007, 1-8). See also Elliot 1917, Elliott 2003.

Spencerian." Most relevant to this dissertation's line of inquiry are his ideas about music, which were central to Victorian musical culture, winning out over Darwin's competing idea that music was originally for sexual selection.[33]

But by 1903 (the year of Spencer's death) his reputation was in "free fall."[34] His ideas had come to seem deeply problematic. This was not least because of their generality, a defect captured best by a parody of Spencer's writing style, written by Victorian mathematician Thomas Kirkman: "Evolution is a change from nohowish, untalkaboutable, all-alikeness, to a somehowish and in-general-talkaboutable not-all-alikeness, by continuous somethingelseifications, and sticktogetherations."[35] Spencer's ideas suffered in the long run because he seemed all too willing to summarize the complexities of life with a single natural law. His reputation took further damage for its emphasis on the theory of inheritance of acquired characteristics, a view associated most strongly with Jean-Baptise Lamarck (though Darwin too was sympathetic to this form of inheritance). The name "Herbert Spencer" eventually became shorthand for evolutionary theory's more retrograde potentials; Darwin replaced him as the preeminent evolutionary theorist. At the same time, Darwin's ideas about *music* never gained a significant following (Cross 2016; Zon 2014, 2017). At least they did not until now.

In recent years there has been a revival of interest in the origins of music.[36] Darwin in particular has become a kind of mascot for the new evolutionary musicology, while non-

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[33] See Zon 2014 for an introduction to Spencer's influence on Victorian musical culture. Zon mentions that Spencer "unapologetically replicat[ed]" the philosopher Joseph Goddard's theory music evolutionism, but Spencer's account was "arguably more famous and influential" than Goddard's (196).
[34] Paul 1994, 561, following Perrin.
[35] Quoted in the 6th edition of Spencer's *First Principles* (1900, 519). This parody is occasionally misattributed to William James.
[36] See this dissertation's Introduction for discussion.

Darwinian figures are generally relegated to the realm of "history," their ideas dismissed as anachronisms and dead ends. When Spencer is mentioned, his ideas and intent are often misunderstood or misrepresented in order to advance tired ideas about which musical behaviors are preordained by biology, or else to prop up a tired adaptationist/nonadaptationist dichotomy (I will say more about these terms later).

Present-day interest in Darwin instead of Spencer may have something to do with the cultural legacies of these two thinkers. Spencer started his career as a young radical, gradually moved toward conservatism, but remained consistently opposed to militarism. Though he initially advocated for women's right to vote, he later became opposed to women's suffrage. "Spencer the social Darwinist" is increasingly associated with libertarian and right-wing politics, which may be related to their adoption by American capitalists in the nineteenth-century. In Diane Paul's review of Robert Perrin's *Herbert Spencer: A Primary and Secondary Source Bibliography,* an increasingly partisan take on Spencer's legacy is on full display. Paul notes that Perrin had previously argued that left-wing academics were to blame for Spencer's marginalization. Paul dismisses Perrin's view on the grounds that Spencer's supporters and detractors have always been of widely diverse political and social views, as well as the fact that his reputation declined long before the rise of so many "tenured radicals" (1994, 561).

My first task in this dissertation is to lay the groundwork for a new critical engagement with nineteenth-century music-evolutionism by taking a fresh look at Darwin's and Spencer's ideas. These two engaged in what is often called a "dispute" about music.[37] Spencer's role in the rise of music evolutionism has been largely misunderstood or forgotten, despite having quickly

[37] Peter Kivy characterizes Darwin's and Spencer's engagement as a "dispute" in his unpublished dissertation, *Herbert Spencer and a Musical Dispute* (1960), and associated publications (1959, 1962).

taken root in the Victorian cultural imagination. Darwin's theory that music was originally used in primal scenes of courtship was largely ignored at the time. Here my thinking is particularly influenced by Peter Bowler's notion of a "non-Darwinian revolution" in Victorian thought:

> My suggestion is that Darwin's theory should be seen not as the central theme in nineteenth-century evolutionism but as a catalyst that helped to bring about the transition to an evolutionary viewpoint within an essentially non-Darwinian conceptual framework. This was the 'Non-Darwinian Revolution'; it was a revolution because it required the rejection of certain key aspects of creationism, but it was non-Darwinian because it succeeds in preserving and modernizing the old teleological view of things. (1988, 5)

Ethnomusicologist Bennett Zon points out how this same "non-Darwinian revolution" played out in Victorian musical culture (2014a, 2014b, 2017). One function of this dissertation is to acknowledge the influence of Spencer on Victorian musical culture, and to take a closer look at his ideas about music, evolution, emotion, and subjectivity. Here Darwin serves as a counterpoint to Spencer, helping us to clarify Spencer's thinking and to locate his ideas within the historical terrain of nineteenth-century musical culture. My interest in re-reading Spencer's and Darwin's dispute is also inspired by my observations of a renewed interest in Darwin's ideas, which occasionally feed into tired stereotypes about the nature of music and sex.

In the next chapter, I return to Spencer's and Darwin's ideas and their proverbial dispute. I argue that musical Darwinianism has more to offer than the idea that music is a program for DNA's replication and dissemination, namely, an intriguing ambivalence about the relation between musical instinct and musical culture. But ultimately I do not see Darwin as the most

relevant historical figure for present-day theorizing about the origins of music—just as interesting are figures like Spencer, Erasmus Darwin, Joseph Goddard, and Edmund Gurney, among others. I also show that while the recent recuperation of Darwin and Spencer's exchange gives the impression of a debate with clear sides, their ideas often spill into each other; this is also the case in the broader field of Victorian music evolutionary thought. This interpretation of the history of music evolutionism understands the narrative of the field as a horizontal plane of competing concepts that pass between and through various figures, rather than the story of the rise or failure of wrong or right ideas. This will help us better understand the place of music in the messy terrain of Victorian musical thought.

CHAPTER TWO

Herbert Spencer Versus Charles Darwin

The proverbial dispute between Charles Darwin and Herbert Spencer over the evolutionary origins of music has long been a point of fascination among music scholars, many of whom frame Darwin as the focal point or winner.[38] In this chapter, I compare Darwin's and Spencer's evolutionary accounts of music's origins in order to explore Spencer's theory in more detail.[39] Whereas Darwin understands music as an unconscious proto-language that emerges in the instinctual milieu of urges for domination, conquest, and sexual reproduction (1871, 1872), Spencer describes music as an advanced province of the human species, which alone possesses the emotional "force" and "variation" (1857, 398-400) necessary for musical expression. For Spencer, what is primal is not sexuality but rather the unique receptivity of human subjects to emotions, both pleasurable and painful.

Contemporary evolutionary musicology tends to associate Darwin with the idea that music's function was originally for mate selection. Darwin was indeed concerned with music as the spread of inherited traits, but this was just one of his suggestions and should not be seen as his last word. He first began to think about music in early notebooks, where he mused about the songs of birds and the differences between the arts and sciences. His first published discussion of "man's musical powers" can be found in *The Descent of Man* (1871) and he extends that discussion in *The Expression of the Emotions in Man and Animals* (1872), as well as in personal

[38] "Dispute" is Peter Kivy's term (1959). For further discussion of Darwin's and Spencer's debate over the origins of music, see Brotman 2005, Cross 2016, Kleinman 2015, Patel 2008.
[39] For prior studies of Spencer's music theory (in addition to those cited elsewhere in this dissertation), see Grew 1928, Offer 1983a and 1983b.

correspondence. A deeper engagement with Darwin's writings on music quickly reveals the limits of his thinking about music, as well as his own resistance to being treated like an authority on music. Over the course of his life, he became increasingly ambivalent about the adaptive function of music and he privately expressed frustration that he would be expected to discuss music at all. Spencer, on the other hand, formulated a theory of evolution with music as a key exemplar of evolutionary principles. His ideas about emotion are of particular interest to present-day scholars invested in theories of mimesis, emotion, and subjectivity. This chapter begins with an introduction to Darwin's ideas about music before pivoting to Spencer's theory of musical emotion.

Music in Darwin's Early Notebooks and *The Descent of Man*

Music had a special place in Darwin's life. His wife, Emma Darwin, was a pianist. She had taken a few lessons with Frédéric Chopin and was fond of playing Mozart, Mendelssohn, and Moscheles (Mendelssohn's teacher) (Beer 2013, 103-104). When Darwin began to speculate about the forms and functions of music in his early notebooks (usually referred to as his *M* and *N* notebooks), he recounted memories of music from across his lifetime (Barrett 1980, 7) and reflected on the differences between works of invention (e.g., science) and works of imagination (e.g., music) (Ibid., 11). Here he articulates the kernel of his music theory: "Did our language commence with singing[?]—Is this origin of our pleasure in music[?]" (Ibid., 74). He wonders whether birds learn to sing in the manner of language-learning in humans (Ibid., 16) and suggests that birdsong might be a learned/hereditary form of knowledge rather than an instinctive one (Ibid., 11). At the same time, he speculates that music differs from poetry because music "pleases from instinct" (Ibid., 12).

In Darwin's most famous work, *On the Origin of Species* (1859), music does not figure prominently. It is not until *The Descent of Man* (1871) that he turns in earnest to music. "The sole object of this work," he writes, "is to consider, firstly, whether man, like every other species, is descended from some pre-existing form; secondly, the manner of his development; and thirdly, the value of the differences between the so-called races of man" (1871 vol. 1, 2-3).[40] Darwin places special emphasis on sexual selection, which is the focus of the second volume of *Descent*. He developed the concept of sexual selection (which is distinct from natural selection) in order to account for traits not directly related to survival but nevertheless appear to be evolutionarily powerful. In the process of innovating the concept of sexual selection, Darwin began to apply his theory of evolution to topics as varied as human psychology, evolutionary ethics, sex differences, and morality.

In the 800+ pages of *Descent*'s two volumes, Darwin mentions music infrequently. Most mentions are confined to the chapter "Secondary Sexual Characters of Man." Here Darwin brought his theory of sexual selection to bear upon matters of vocal expression and musical power. These musical reflections sit alongside his accounts of the role of beauty in marriage, the law of competition for mates, and the differences between the sexes. "Man is more courageous, pugnacious, and energetic than woman, and has a more inventive genius," Darwin writes (1871, vol. 2, 316). He supports observations like this with physiological evidence of sexual differences, referencing studies such as Schaaffhausen's study of the shape of the brow, and Ecker's and

[40] In chapter seven ("On the Races of Man") Darwin explores the question of whether the human races can be conceived as varieties of the same species (monogenism) or as different species (polygenism). He summarizes arguments given in defense of each position but ultimately believes that "the most weighty of all the arguments against treating the races of man as distinct species, is that they graduate into each other, independently in many cases, as far as we can judge, of their having intercrossed" (1871, vol. 1, 226), thereby siding with the view that the races belong to the same species.

Welcker's studies of the form of the skull in men and women (Ibid., 316-17). Darwin carries this emphasis on physiology into his discussion of voice and music. He describes the physiology of the vocal organs, and introduces speculation about the role of sounds produced by male mammals during mating season, the question of which creatures produce sounds that can be classified as "music," and whether the capacity to produce music is necessary for perception of music. Says Darwin, "The perception, if not the enjoyment, of musical cadences and of rhythm is probably common to all animals, and no doubt depends on the common physiological nature of their nervous systems" (Ibid., 333). Darwin had explained a few pages earlier that "Quadrupeds use their voices for various purposes, as a signal of danger, as a call from one member of a troop to another, or from the mother to her lost offspring" but elects not discuss *which* purposes, concerning himself "only with the difference between the voices of the two sexes" (Ibid., 274). When he turns to man's vocal powers, he remarks, "I have nothing to add to the remarks made in the last chapter on the probable effects of the long-continued use of the vocal organs by the males under the excitement of love, rage, and jealousy" (Ibid., 330). Like lions, bulls, stags, bellowing and roaring "as a call to the female" (Ibid., 276), so too does man voice his strongest emotions. For Darwin, this observation leads to a discussion of music:

> The capacity and love for singing or music, though not a sexual character in man, must not here be passed over. Although the sounds emitted by animals of all kinds serve many purposes, a strong case can be made out, that the vocal organs were primarily used and perfected in relation to the propagation of the species. Insects and some few spiders are the lowest animals which voluntarily produce any sound; and this is generally effected by the aid of beautifully constructed stridulating organs, which are often confined to the males alone. The sounds thus

> produced consist, I believe in all cases, of the same note, repeated rhythmically; and this is sometimes pleasing even to the ears of man. Their chief, and in some cases exclusive use appears to be either to call or to charm the opposite sex. (Ibid., 330-31)

There is a great deal to unpack here. First, it is significant that Darwin argues that the human species' capacity and love for music may not be immediately obvious to the reader. Although Darwin is not always consistent about this point, it should hold some significance to scholars who have read him literally. Second, it is intriguing that Darwin, in his discussions of Man's various powers, continually turns to fish, spiders, alligators, seals, and other non-human creatures. By observing the courtship behaviors of animals and insects he arrives at a conclusion about the purpose of music *writ large*. Third, *voice* is an important element of Darwin's thinking about music. It also was for Spencer.

Indeed, Spencer informs Darwin's ideas about music. Darwin directly references Spencer's seminal essay "The Origin and Function of Music" (1857) in *Descent.* Darwin and Spencer agree that song is "the basis or origin of instrumental music" (Darwin 1871, vol. 2, 333). But Darwin disagrees with Spencer about the relation between music and language—this is the crux of their dispute. Darwin sees music as a kind of proto-language, emotional and eloquent in its way. Spencer thinks the opposite: music evolved from impassioned speech. Darwin makes this difference plain: "He [Spencer] concludes that the cadences used in emotional speech afford the foundation from which music has been developed; whilst I conclude that musical notes and rhythm were first acquired by the male or female progenitors of mankind for the sake of charming the opposite sex" (Ibid., 336, fn. 33).

Their differences deepen with regard to the nature and purpose of emotion. For Darwin, the instinctual use of the voice during the season of courtship established and reinforced a connection between vocalizations and amorousness. “Thus musical tones became firmly associated with some of the strongest passions an animal is capable of feeling, and are consequently used instinctively, or through association, when strong emotions are expressed in speech” (Ibid., 336, fn. 33). For Spencer, musical emotion is neither primal nor instinctual but civilized and refined, a uniquely human development beyond the less nuanced emotional affordances of language. Darwin’s belief in a sexual selection origin leads him to conclude that music “affects every emotion” but cannot in itself arouse feelings of horror, rage, or other “terrible” emotions. Rather, music awakens “the gentler feelings of tenderness and love, which readily pass into devotion” (Ibid., 335). He returned the matter of taste a year later in *The Expression of the Emotions in Man and Animals* (1872).

Music in Darwin’s *The Expression of the Emotions in Man and Animals*

In the introduction to *Descent,* Darwin noted that he intended to include an essay on the expression of emotions as a subdivision of anatomy and physiology. But the book had already grown prodigiously long (two volumes and over 800 pages) and he reserved this discussion for a separate text. His interest in emotion had been piqued in reading the work of anatomist Sir Charles Bell. Bell famously argued that the human species is endowed with special muscles “solely for the sake of expressing his emotions” (1871 vol. 1, 5). Bell’s belief in a divinely designed muscular system, uniquely suited to the expression of human emotions, was at odds with Darwin’s belief that “man is descended from some other and lower form” (Ibid., 5). In *The Expression of the Emotions in Man and Animals* (1872), Darwin expands his account of emotion

under natural selection. This involves rearticulating his views on music, a topic he weaves into general discussions of sound emissions in humans and animals.

Darwin takes a trans-historical, universalist stance with regard to emotion. Because he believes emotions represent muscular responses to environmental stimuli, and because his theory is essentially about how human ancestry is shared with that of animals, he believes certain features of emotional expression are pervasive across species (and across human cultures). This leads him to proffer overly simplistic views of human expression, as well as anthropomorphic views of animal expression. For instance, he conveys his disappointment in nearly all of the available theories of expression for being too general and vague. He was interested in more than just pleasure and pain, that is, in the varied and subtle "special expressions" (Ibid., 9)—but his own theory often draws on tired cultural stereotypes as evidence of evolutionary processes.

For the most part Darwin dismisses prior scholarship on emotion. Only Spencer's writings on the physiology of emotion satisfy him; he refers to Spencer's discussion of feelings in *Principles of Psychology* as "the true theory of a large number of expressions: but the chief interest and difficulty of the subject lies in following out [Spencer's] wonderfully complex ideas" (Ibid., 9). Spencer is an especially appealing figure to Darwin because his physiological take on psychology is grounded in material evolution. "All the authors who have written on Expression, with the exception of Mr. Spencer—the great expounder of the principle of Evolution—appear to have been firmly convinced that species, man of course included, came into existence in their present condition" (Ibid., 10). As we shall see, the two evolutionary theorists each in turn make recourse to music in their discussions of emotion.

In *Expression*, Darwin's discussion of music is scattered throughout his discussions of "sound emissions," such as chirps, screams, growls, and other vocal utterances (in *Descent* these

topics were more clearly delineated). In these discussions he touches on three things: 1) the physiology of sound emissions, 2) their underlying "states of mind," and 3) their various uses and benefits. Sound emissions are partially figured as "involuntary" muscular contractions, in response to pleasure or pain: strong feelings are often accompanied by "involuntary" and "purposeless" muscular contractions, which result in sound emissions. Examples include a wounded hare's screams of pain or the "agonized death-bellow" of cattle (1872, 83-84). Hypotheses like these are not unique to Darwin; he is indebted to W. C. L. Martin's natural history of mammals, Sir John Lubbock's archaeology, and Herman von Helmholtz studies of sound physiology, among others.[41] Following Helmholtz, Darwin sees the shape of the ear, mouth, and lips as evidence of the primal role of sonic emissions; for instance, a human scream "will naturally be loud, prolonged and high, so as to penetrate to a distance." Due to the shape and placement of the mouth and lips, and, "owing to the shape of the internal cavity of the human ear and its consequent power of resonance," the scream will produce a "particularly strong impression" (Ibid., 91).

Similarly, a given species will find certain sounds "naturally" pleasing or displeasing, due to its physiology. For example, "When male animals utter sounds in order to please the females, they would naturally employ those which are sweet to the ears of the species" (Ibid., 91).[42] This leads Darwin to affirm his earlier identification of a "primeval use" of the voice for reproductive purposes. "The sexes of many animals incessantly call for each other during the breeding season;

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[41] Darwin cites Martin's *A General Introduction to the Natural History of Mammiferous Animals* (1841), Lubbock's popular archaeological textbook *Pre-historic Times* (1865), and Helmholtz's *Théorie Physiologique de la Musique* (1868, the French translation).

[42] Darwin notes that animals sharing similar nervous systems derive pleasure from the same sounds; he gives examples like the pleasure that humans derive from birdsong and tree-frog chirps (91).

and in not a few cases, the male endeavors thus to charm or excite the female," Darwin writes. Thus, "the use of the vocal organs will have become associated with the anticipation of the strongest pleasure which animals are capable of feeling" (Ibid., 84).

The notions of "association" and "anticipation" are very important here because they muddy the pure adaptive function of music that is so often read into Darwin's thinking.[43] In fact, a kind of enculturated habit plays an important role in Darwin's account of the development of sound emissions. For Darwin, vocal communication, purrs of pleasure, and bellows of pain all can be practiced and made habitual—in short, they can be learned. Darwin writes,

> Involuntary and purposeless contractions of the muscles of the chest and glottis… may have first given rise to the emission of vocal sounds. But the voice is now largely used by many animals for various purposes; and habit seems to have played an important part in its employment under other circumstances. Naturalists have remarked, I believe with truth, that social animals, from habitually using their vocal organs as a means of intercommunication, use them on other occasions more freely than other animals" (Ibid., 84).

In this way, Darwin describes what I call a *dialectical flow* between instinct and habit: a feeling, such as rage, naturally "leads to" muscular exertion, but this innate connection between emotion

[43] For example, in Levman's "Western Theories of Music Origin, Historical and Modern" (2000), he contrasts Darwin's adaptive theory of music with Spencer's sociological/psychological theory. Levman writes: "Darwin believed that the primary purpose of the vocal organs was the attraction of the opposite sex and the propagation of the species," (190). As I show in this chapter, Darwin did not see the vocal organs as primarily geared toward mate selection; rather the voice is a multitool, put toward multifarious ends. Levman also suggests that "there is little biological about [Spencer's] theory" (Ibid., 191). As I show in this chapter, and those that follow, Spencer is centrally concerned with the biology of music; indeed, Darwin's adaptive theory of music is influenced by Spencer's explorations of the biological connection between emotion and movement.

and musculature can also be harnessed and targeted toward a specific end. He gives examples like a lion leveraging its power to roar to terrify its enemies. "Thus the use of the voice will have become associated with the emotion of anger, however it may be aroused" (Ibid., 85).[44] In another example of this dialectical flow, Darwin explains that a body in pain may scream involuntarily; but discovering that the scream provides relief may lead to more screaming—a learned screaming—"and thus the use of the voice will have become associated with suffering of any kind" (Ibid., 85).

Compare Darwin's position with that of an earlier naturalist—Erasmus Darwin. In his *Zoonomia*, Erasmus Darwin remarked that "the singing of birds, like human music, is an artificial language, rather than a natural expression of passion. Our music, like our language, is perhaps entirely constituted of artificial tones, which by habit suggest certain agreeable passions" (1803 vol. 1, 116). In his view, the "artificial" nature of music is evidenced by the fact that the same combinations of musical notes and rhythms will not excite the same emotions in Englishmen as in foreigners; he references research by a number of naturalists who contrast the musical styles of England, Turkey, and Morocco, among others. In equating birdsong with human language in this way, Erasmus Darwin reinforces the role of association in the production of musical meaning, even in the "music" of animals. He shares this position with the younger Charles Darwin. The latter, however, seems more explicitly puzzled by the relation between innate and learned sound emissions in animals. For instance, he acknowledges that we may never

[44] In Darwin's *N Notebook*, he offers an early reflection on the lion's roar that may have been the basis for this passage. He writes, "Understanding language seems simplest case of Association… Probably, language commenced in some necessary connexion between things & voice, as roaring for lion, etc. etc. (in same way alphabet arose from letters, symbol of word beginning with the sound of the letter) – crying yawning laughing being necessary sounds … not produced by will but by corporeal structure.—" (Barrett 1980, 74).

know the exact source of particular sound emissions, only the feelingful *associations* that build up around sound, admitting that "*why* particular sounds are uttered, and *why* these give pleasure cannot at present be explained" (1872, 88, emphasis added). But in the same text, he targets a strictly physiological origin of certain sound emissions, such as the use of high-pitched sounds to express suffering or impatience, or the distinction between men's and women's laughter: low-pitch "*O* and *A*" for the former, high-pitched "*E* and *I*" for the latter (Ibid., 88).

While contemporary readers of the Darwin often emphasize Darwin's adaptationism (see Patel 2008), early readers correctly apprehended his ambivalence about the essential nature of sound emissions. George John Romanes, in his *Mental Evolution of Man*, adopts Darwin's uncertainty about music's role in evolutionary processes in order to disrupt the idea that humans possess special mental capacities that are distinct from those of animals, specifically by troubling the distinction between conventional and natural signs. For Romanes, all signs that appear natural can find examples in other cultures that we would regard as conventional, and vice versa. Animals employ signs that are both natural and conventional, thus "it is clearly a matter of no consequence that we should be able to classify all signs as natural or conventional" (1902, 103). And yet despite dispensing with the distinction between natural and conventional signs, Romanes nevertheless proceeds with an account of sign-making's "probable evolution" by beginning with "the most natural, or least conventional of the systems. This is the language of tone and gesture" (Ibid., 103). This formulation feeds into Romanes' analysis of tone and gesture as the primitive building blocks of communication. Among "savages," he writes, "it is notorious that tone, gesticulation, and grimace play a much larger part in conversation than they do among ourselves" (Ibid., 105). In what was an unfortunately popular formula, Romanes reinforces the view that a relative degree of evolutionary advancement is audible in the form of

communication, with Europeans treated as the pinnacle of progress and non-Europeans treated as evolutionary relics, still on the path toward "developed" speech.

For Romanes, the ability to recognize and use conventional forms of signification requires "a higher order of mental evolution." He writes, "we everywhere find the language of tone and gesture preceeding that of articulate speech, as at once the more simple, more natural, and therefore more *primitive* means of conveying receptual ideas" (Ibid., 106). What this ultimately adds up to is a theory of sonic signification that works hard to legitimize an evolutionary account of human mental activity by equating animal communication with human semiosis, while nevertheless maintaining the idea that "tone" is more "primitive" than linguistic structures. This conceptualization reinforces a conceptual framework that positions non-European forms of expression beneath those of their European counterparts. "Tone" is the convenient implement for this double action, being abstract enough to justify both the elevation of animal communications and to establish the relative positions of European and non-European cultures in a racist "chain of excellence" (to borrow a phrase from Nancy Stepan[45]). The role of music in this Darwinian music-evolutionary tradition is thus similar to the role of music in much of Western philosophy, at least as recounted by thinkers like Martin Scherzinger and Robin James. In Scherzinger's telling, music functioned as "discourse of idealized negation *par excellence*" for philosophers like Friedrich Schelling, Søren Kierkegaard, and Arthur Schopenhauer (2012, 347). In the European philosophical tradition glossed by Scherzinger,

[45] Stepan's *The Idea of Race in Science: Great Britain, 1800-1960* offers an important study of the "scientific" codification of racism in evolutionary thought. Commenting on the shift from earlier ethnographic, monogenist approaches to anthropological, polygenist approaches in Victorian British scientific discourse, she remarks that races had come to be seen as "forming a natural but static chain of excellence" (46). This would later come to serve as a "scientific" justification for imperialism and genocide. See Brantlinger 1985, p. 205.

"music's failure to operate according to the model of language paradoxically afforded it the capacity for elevated metaphysical reflections on human existence" (2012, 346). Robin James' charge against similar reductions is more polemical:

> For philosophers with little formal training or practical experience in music, "music" often serves as a metaphor for all that philosophy isn't: affective, sensuous, embodied, feminine, etc. Or, because we don't know how to put our experiences of music into propositional form, it *seems* to be purely affectively, implicit, sensuous experience… If we don't understand all the work that goes into making music—from the epistemic frames that organize music/noise distinctions, to the logic of specific compositional strategies (like tonality or ragas), to more practical matters like audio engineering or how to play the piano—it might appear to affect us in relatively immediate ways. Our experiences of music are certainly affective, but music is not magical, non-propositionalizable, or extra-logical. (2012, 59-60)

In James' account, music is all too easily wielded as a metaphor that naturalizes hegemonic biases. If we bring James' critique to bear on Romanes' "Darwinian" account of musical progress, it is clear that his conceptions of musical and linguistic "tone" serve problematically as metaphors for what he believes are degrees of evolutionary progress.

For Darwin too, musical structures seem at once primitive enough to explain the essential link between humans and animals and complex enough to reinforce the relative advancement of European speech. When it comes to the human voice, and vocal music, Darwin agrees with Spencer's claim that vocal sound is grounded in "the general law that a feeling is a stimulus to

muscular action."[46] But Darwin finds this law "too general and vague to throw much light on the various differences… between ordinary speech and emotional speech, or singing" (1872, 87). Ultimately Darwin maintains that regardless of whether the reader sides with Spencer's position, that the musical qualities of voice arise from impassioned speech, or with Darwin's belief that musicality is a proto-linguistic aspect of voice, it is impossible to define a clear boundary between ordinary speech, emotional speech, and song.

Bear in mind that Darwin is still speaking to a more general realm of sonic expression, not directly to music. When he finally turns in earnest to music, he also turns away from the idea of a strictly adaptive function for sonic expressions, appearing to advance a theory about the relationship between music and habit. But he has nothing original to add; instead, he quotes a lengthy memorandum from one "Mr Litchfield." No citation is given—Richard Buckley Litchfield was the husband of Darwin's third daughter, Henrietta, a London intellectual and music teacher.

Litchfield is a proxy for Spencer, who is cited in the affirmative. Litchfield comments on Spencer's "The Origin and Function of Music" and offers his own take on specifically "*musical* expression" (emphasis in the original). He admits that the elements of musical expression remain "unsolved enigmas" (Darwin 1872, 89) but he insists that "any law which is found to hold as to the expression of the emotions by simple sounds must apply to the more developed mode of expression in song, which may be taken as the primary type of all music" (Ibid., 89). He places great emphasis on performance: "A great part of the emotional effect of a song depends on the

[46] Darwin also recognizes Spencer's point, that "emotional speech… is intimately related to vocal music" (Darwin 1872, 86); "No one can listen to an eloquent orator or preacher, or to a man calling angrily to another, or to one expressing astonishment without being struck with the truth of Mr Spencer's remarks," Darwin wrote (Ibid.).[46]

character of the action by which the sounds are produced"; a passionate song will fail in its "proper effect" if the vocal delivery lacks sufficient "exertion" (Ibid., 89). Litchfield mentions what he presumes to be a familiar example—"the transposition of a song from one key to another"—and he argues that the stereotyped "loss of effect" depends "not merely on the actual sounds, but also in part on the nature of the action which produces the sounds" (Ibid., 89)—in other words, *how it is performed*. For Litchfield "it is obvious that whenever we feel the 'expression' of a song to be due to its quickness or slowness of movement—to smoothness of flow, loudness of utterance, and so on—we are, in fact, interpreting the muscular actions which produce sound, in the same way in which we interpret muscular action generally" (Ibid., 89). For Litchfield, Spencer's claim that psychology is really a physiological matter explains this phenomenon very well. But for Litchfield, even the "ingenious speculation" of Spencer does not solve the riddle of specifically "musical" expression, which Litchfield equates with "the delight given by its melody, or even by the separate sounds which make up the melody" (Ibid., 89-90). Even the "ingenious speculation" of Herbert Spencer cannot account for this enigmatic delight, which Litchfield insists is "indefinable in language" (Ibid., 90).

Litchfield reiterates that the formal features of music—their loudness or softness, their absolute pitch, their instrumentation, etc.—are not what produce musical effects. "The purely musical effect of any sound depends on its place in what is technically called a 'scale;' the same sound producing absolutely different effects on the ear, according as it is heard in connection with one or another series of sounds. It is on this *relative* association of the sounds that all the essentially characteristic effects which are summed up in the phrase 'musical expression,' depend" (Ibid., 90). As a way forward, he recommends a radically materialist investigation of both the musical materials themselves (the "well-known arithmetical relations" between pitches

of musical scales) and the physiology of performance ("the greater or less mechanical facility with which the vibrating apparatus of the human larynx passes from one state of vibration to another") (Ibid., 90). In fact, Spencer anticipated such a recommendation. Had Litchfield delved into Spencer's *Principles of Psychology,* published two years prior to his work on the origins of music, he would have discovered a materialist account of mental action explicitly focused on the correspondence between things, rather than the things themselves.

Darwin seems satisfied to defer to Spencer via Litchfield without engaging with music himself. Perhaps this is because Darwin found the topic burdensome. In a December 1871 letter to his daughter, Henrietta Litchfield, he laments that his manuscript on the use of the voice for expression "is an extremely poor affair, but I must say something, & and have nothing worth saying."[47] He admits that, in *Expression,* "music comes in only quite subordinately" and that discussion relies heavily on the ideas of other, more musically-inclined thinkers. It seems as though he felt pressured to discuss music, possibly because Spencer had already made the subject an important one for theorists of evolution to address. It is notable, then, that Darwin has come to serve as the avatar of music evolutionism when in fact his thinking on the subject was limited and, more often than not, borrowed from peers. Indeed, Darwin seemed frustrated by the need to comment on music at all.

[47] Darwin Correspondence Project, "Letter no. 8089," accessed on 28 July 2017, http://www.darwinproject.ac.uk/DCP-LETT-8089

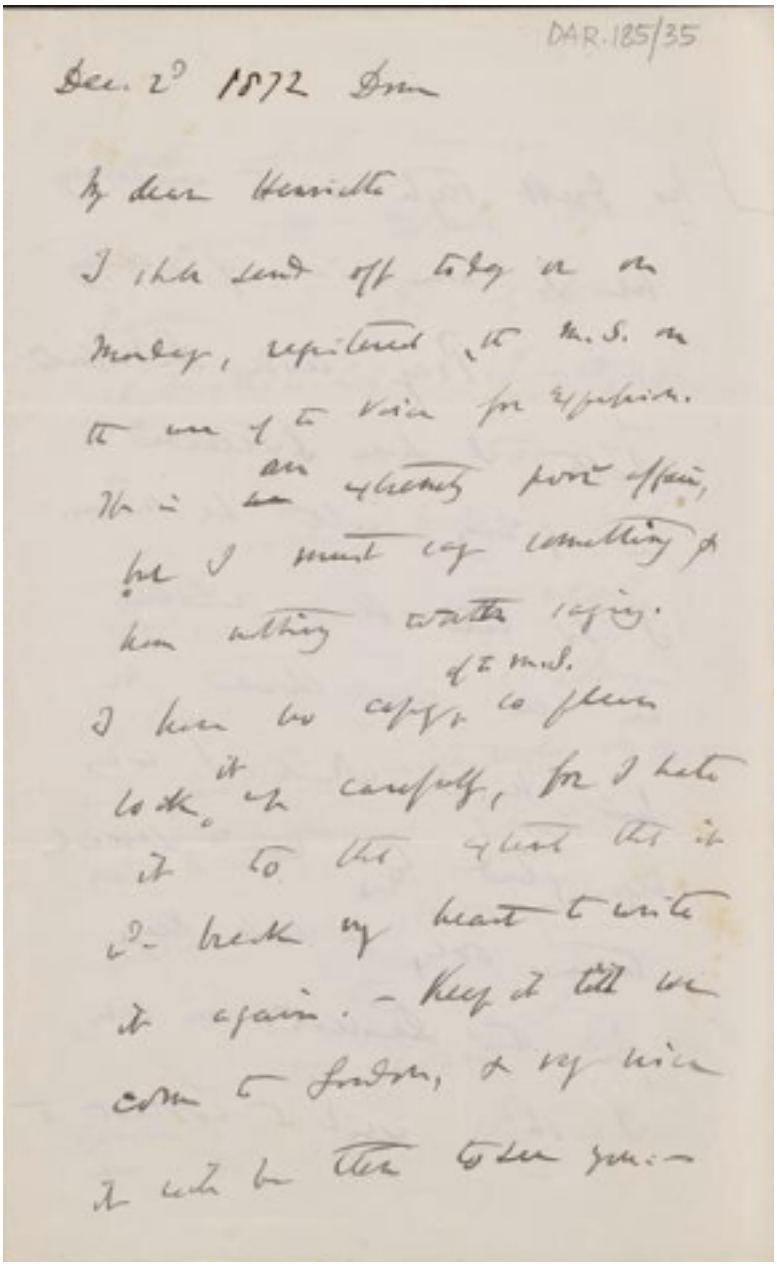

Figure 2.1*: Letter from Charles Darwin to Henrietta Litchfield, December 2, 1872.*

Spencer's Theory of Music Perception

By contrast, Herbert Spencer had been developing an evolutionary account of human psychology with music at its very center, beginning with the first edition of his *Principles of Psychology* (1855). The connections between *Principles of Psychology* and Spencer's seminal

article on music, "The Origin and Function of Music" (from here: "OFM"), have been underappreciated since these texts' original publications. This is not surprising, as *Psychology* is a book of "legendary impenetrability" (Leslie 2006, 125) and Spencer does not make reference to *Psychology* in "OFM." Furthermore, *Psychology* contains only "passing" references to music, as others have noted (Zon 2014, 201). Still, the psychological claims that form the foundation of "OFM" are extensions of those presented in the book, as I will show. Furthermore, Spencer stressed the connection between *Psychology* and "OFM" in his *Autobiography*: "An obvious corollary from the doctrine set forth in the *Principle of Psychology*, was that the musical faculty, in common with all faculties, must have arisen by degrees through complications of pre-existing elements in human nature" (1904 vol. 1, 594). During the two-year period between the publications of *Psychology* and "OFM", Spencer developed insomnia and nervous disorders, which inhibited his thinking and writing. "Music," he recounts, "was perhaps the only thing which I could enjoy in full measure with impunity" (Ibid., 581). He became interested in the question of music's natural origins and secured an engagement with *Fraser's Magazine* for an article on the subject. He wrote the majority of "OFM" while vacationing in Andarroch, North of Dalry (Ibid., 592-595).

Although music appears only a handful of times in *Psychology*, its appearances are significant ones. For example, music is a key example of one of Spencer's most radical claims: the unity of emotion and cognition. He writes, "in the states of consciousness produced by music the two are inseparably united; but it is, that the state of consciousness produced by a single beautiful tone, presents cognition and emotion fused into one… It follows, of necessity, that no act of cognition can be *absolutely* free from emotion… [and] that no emotion can be *absolutely* free from cognition" (1855, 586). In this regard Spencer was surprisingly out of sync with the

intellectual movements of his time. He notably questioned the distinction between mind and outer world, and between subject and object, and he postulated an evolutionary history of human mental powers, seeing them as having developed from earlier forms of life in concordance with changes in the environment. In addition to thinking about music in *Psychology* he thinks deeply about sound and hearing more broadly. One of the grounding claims advanced in *Psychology* is that the relations between things take primacy over the things themselves. Spencer summarizes his own project thus:

> all reasoning is definable as the classification of relations… the perception of an object, is possible only by the classing of a present group of attributes and relations with a past group… the constituents of any complex perception, must be severally classed with previously known constituents of the same order, before the perception in its totality can arise… not even the simplest attribute or relation can be known, until there exist others with which it can be ranged. (Ibid., 330-331)

In response to Descartes' famous adage *Cogito ergo sum* ("I think therefore I am"), Spencer poses a "fatal question": "What gives validity to the *therefore?*" (Ibid., 11). In an argument that is emblematic of *Psychology* as a whole, he argues that "the content of every rational proposition" is "*some relation*" (Ibid., 168). What is more important than "I think" or "I am," for Spencer, is "the state of consciousness in which the relation of the one to the other is established" (Ibid., 11). In this way, Spencer establishes an anti-dualist[48] metaphysics of perception, whereby

[48] Spencer's approach to mind-body dualism has long been a source of confusion. For instance, in Edmund Gurney's essay "Monism" (1887) he distinguishes Spencer sharply from the most famous anti-dualist, Baruch Spinoza. Gurney quotes Spencer arguing that mental and neural processes are "faces of the same thing" but ultimately treats Spencer's Realism as a modified Cartesianism that relies on an unknown "substance of mind" (324).

the mind is radically integrated with the material body, and where the dynamic relations between things take primacy over the things themselves. Throughout his career Spencer would work to demonstrate the primacy of relationality at every level of organic life. In *Psychology*, this includes sense perception.

Partially because Spencer advocated for a Lamarckian view of evolution, and because his ideas have been stereotyped as the root of a problematic Social Darwinism, his thinking has become "historical" in a way that Darwin's has not. While Darwin understood evolution better than his peers, this does not mean he better understood the evolution of music. Spencer's ideas about emotion have much in common with turns to embodiment and materiality in music studies, which share the Spencerian commitment to the betweenness of things.

As we saw in Darwin's writings, the emotionality of music was often seen as a given in Victorian musical culture, and the quality of a given music was seen as attendant on its expressivity, that is, on its perceived emotionality. Spencer's takes on emotion and expressivity is similar to, but distinct from, Darwin's in important ways, and the differences between their positions yield two distinct models of listening and two different models of musical subjectivity. This will take some unpacking.

Music scholars have long privileged an expressive model of emotion that works to retain programs of aesthetic value specific to subjectivity. Literary critic Rei Terada makes this point in her work on "emotion after the death of the subject" (2001). Terada references a debate between music philosophers Peter Kivy and Jerrold Levinson, each of whom advance a theory of musical emotion with strict boundaries between inside and outside, that is, between subject and object (Terada 2001, 93-97). While Kivy and Levinson disagree on where emotional expression is coming from—from the music, on the one hand, or from the listener on the other—they agree

that emotional expression is coming from *somewhere,* thereby reifying what Terada calls the "expressive hypothesis": the idea that emotion is inherently tied to expression. For Terada, the expressive hypothesis helps to shore up a circular definition of the subject: "The claim that emotion requires a subject—thus we can see we're subjects, since we have emotions—creates the illusion of subjectivity rather than showing evidence of it" (Ibid., 11). More interesting to Terada is the puzzle of emotion's sources—what she calls "the mystery of emotive cause" (Ibid., 99). In other words, the ambiguity of musical emotion—is it coming from me or from the music I listen to?—is what is significant about it.

I think something like a "mystery of emotive cause" is what Darwin might have postulated, had he taken his own ambivalence about the relation between instinct and habit as a metholodological virtue. Without acknowledging the dialectical flow between instinct and habit, contemporary scholars are likely to extrapolate from Darwin an expressive hypothesis that only ever expresses survival instincts, which then participates in a Darwinian music theory that is hyper-focused on musical meaning—that is, the pursuit of an opposite-sex mate and biological children—and attributes that meaning to a particular source, whether to "the music itself" or to the mental state of the listener.

Spencer, however, makes it possible to uncouple musical emotion from expression, even as he argues that the function of music *is* emotional expression. This would appear paradoxical, except that Spencer's discussion of emotion *is itself an assault on the expressive hypothesis.* The puzzle of emotion's sources—what Terada calls "the mystery of emotive cause"—is, for Spencer, a defining feature of emotional experience. Even seemingly "rational" propositions are rooted in the muddier realm of relationality; this is why he insists that the content of every rational proposition is some relation (1855, 168). The emotional force of music is bound up with

the mystery of its emotive cause. It is, as it were, emotion *ex nihilo,* which need not be felt or expressed anywhere in particular in order to surface in sound. The very incongruity between the force of its expression and the enigma of its source *just is* the excess that constitutes musicality, for Terada, and for Spencer.

To extend Terada's critique, I argue that while a Romantic tradition of music philosophy pays lip service to emotion—indeed, their philosophies are ostensibly about emotion—in many cases emotion comes after expression or is a product of expression or requires expression. Expression is the place where emotion comes to "mean," suggesting that they are actually invested in how emotion might mean something in particular. Emotion, in short, becomes the vehicle for musical meaning. Spencer, by contrast, does not care what music *means,* he cares what it *does,* and so he is able to think more broadly about the foundations and functions of music, and to investigate musical phenomena that Darwin does not.

For instance, in *Principles of Psychology,* Spencer describes a pianist learning to read music, which he sees as the "most marked instance" of something he calls "the gradual lapse of memory into automatic coherence":

> The visual impression produced by the crotchet or quaver; the consciousness of this position on the lines of the stave, and of its relation to the beginning of the bar; the consciousness of the place of the answering key on the piano; the consciousness of the muscular adjustments required to bring the arm, hand, and finger into the attitude requisite for touching that key; the consciousness of the muscular impulse required to give a blow of the due strength, and of the time during which the muscles must be kept contracted to produce the right length of note—all these states of consciousness which at first arose in a distinct succession, and thus formed so many recollections, ultimately constitute a

> succession so rapid that the whole of them pass through consciousness in an inappreciable time. (1855, 562)

In reflections like this, Spencer accounts for the rapid, reflexive, or otherwise pre-attentive aspects of music that are side-lined by models governed by the expressive hypothesis—the ones Rei Terada claims are common to music studies. Music, for Spencer, is a phenomenon of technique and physicality, pattern recognition and habit, and a mode of attention that distills and makes perceptible important features of human psychology. This embodied, phenomenological approach, if taken to its conceptual extreme, has little to say to a hermeneutics of organic form, but a great deal to offer conceptions of musical experience—especially the seemingly nonsubjective nature of emotion.

Nowhere are the analytical possibilities and ideological pitfalls of a nonsubjective view of emotion clearer than in Spencer's discussion of having a song stuck in his head. In a late essay on the "Ego," he writes:

> People devoid of musical perceptions have some compensations: one of them being that they are not persecuted by tunes which have obtained lodgments in consciousness and cannot for a time be expelled. Most if not all who have ordinarily good ears are liable to be annoyed by these invading melodies—often those vulgar ones originating in music-halls and everywhere repeated by street-pianos. (1902, 12)

Spencer senses that earworms are annoying because they sing themselves, without deferral to consciousness. What is "heard" is not sounded. And even when Spencer catches himself on repeat he cannot will the earworm to stop. Spencer's earworms even persist through sleep:

"Repeatedly I have observed on awaking that it was the first thing of which I was conscious" (1902, 13). The earworm presents a paradox. Whoever is caught in its repetitive cyclings serves as both the one who serenades and the one being serenaded, an uncanny unison that is also a schism.

Spencer's conception of the earworm as a disruption of one's sense of self accords with his earliest thought about perception and subjectivity. In *Principles of Psychology*, he insisted that "consciousness of objective existence is accompanied by an unconsciousness of subjective existence" (1855, 44). An astonishing observation will render the observer "oblivious of himself" (Ibid., 45). "We say of such a one that he is *absorbed* in contemplation; *lost* in wonder; has *forgotten* himself: and we describe him as afterwards *returning* to himself; *recollecting* himself. From a deeply interested spectator who is so far possessed by his perception as not to hear what is said to him, up to the stupefied victim of an impending catastrophe, may be seen all grades of this state" (Ibid., 45). For Spencer, "an ordinary perception as well as an extraordinary one, must, while it lasts, exclude the idea of self" (Ibid., 45). Put differently, perception is always a bit nonsubjective, a bit outside of the self, a bit disconnected from consciousness. The earworm, as an ordinary (or extraordinary?) form of perception, excludes the self in this same way but, curiously, allows for the retention of some self-awareness—just enough to feel annoyed that the earworm will not go away.

For Spencer, the conundrum of the earworm—its silent soundings, its impersonal intimacy, its confusion of agency—"form[s] an organized and integrated cluster of states of consciousness quite independent of consciousness as I call myself" (1902, 15). In other words, earworms are not first-person thoughts. Rather they seem to come from outside the mind, even as they remain loosely fastened to personal experiences. This leads him to conclude that the

earworm exists somewhere beyond the ideas of "Self" and "not-Self," disrupting the metaphysical "dogma" of a "distinct, coherent, ever-present personality" (Ibid., 12). There is a tone of violence to it: the invading melody is not only "in conflict with" the self, it "continually triumphs over it" (Ibid., 15). The scene of Spencer silently singing to himself—or rather, *being sung to*… but by whom?—invokes a voice that is *I* but not *I*, and even if it is, it is only incidentally so, by virtue of Spencer's exposure to the serial looping iterations of the "real" melody in the "real" world.

Like Spencer's example of the pianist practicing the same passage over and over until it is automatic, its parts collapsed into an "inappreciable" amount of time, the earworm plays me rather than the other way around. In this way, Spencer suggests that engaging with music means being inhabited by another, and being taken beyond yourself.

CHAPTER THREE

ANALYSIS I – A Spencerian Theory of Earworms

In Spencer's thinking, the earworm is an emblematic musical experience; he argues that the experience of having a song stuck in his head is evidence *against* the idea of a unified personality or "Self," and a blow to the metaphysics of autonomous subjectivity. This accords with his broader theory of emotion, which is "nonsubjective" in Rei Terada's sense that it disconnects musical emotion from autonomous subjectivity. In Terada's account, "the philosophy of music offers a negative image of nonsubjective experience" (2001, 91) (*negative*, as in: disapproving), though this is certainly not the case in Spencer. In this chapter, I bring Spencer's ideas about emotion and selfhood into contact with contemporary music theory, specifically with studies of earworms, subjectivity, and embodied music cognition. Combining ideas from Spencer's theory of emotion with recent empirical and critical research on earworms, I demonstrate that thinking nonsubjectively about emotion helps vivify and complicate colloquially unusual features of human cognition, such as the experience of having a song stuck in your head, and I show how this is generative for music analysis.

Scholars have invoked the earworm as an especially strange instance of thought, a cross-cultural feature—or, occasionally, a bug in the system—of human cognition. In this chapter, I do not offer knowledge about the origins or purposes of these curious instances of repetitive musical imagery. Rather, I focus my attention on the earworm as an object of philosophical interest. Via Spencer, I offer a new way of conceiving the earworm: as an instance of "agential chaos" that confuses the usual relationships between music, musician, composer, and listener. My claims here are more descriptive than prescriptive, meaning I offer a novel conceptual tool for thinking

about earworms rather than arguing for what earworms should mean or how we should hear them.

Earworms, which are also known as "stuck song syndrome" (Levitin 2006), "sticky music" (Sacks 2007), or "involuntary musical imagery" (Liikkanen 2008, 2012), are colloquially annoying instances of repetitive auditory imagery. Earworms are known as *musique entêtante* in French ("stubborn music") and *canzone tormentone* in Italian ("tormenting songs") (Halpern and Bartlett 2011). The origins of the English word "earworm" are unclear. Interestingly, the ambiguity of its etymological history is rooted in the sound of the word. One popular origin story of the word "earworm" finds its roots in the German word *Ohrworm* ("ear worm"), of which the English "earworm" is either a calque or a loanword. The verb "to calque" indicates borrowing a word from another language by translating each root word literally—in this case "ear" from "Ohr" and "worm" from "worm" ("loanword" is itself a calque of the German *Lehnwort*). A loanword implies borrowing a different language word's sound without regard for conventional translation protocols. To summarize: the fact that the word "earworm" sounds like "Orhworm" is either *incidental*, if it is a calque, or *essential*, if it is a loanword, and this semantic distinction depends on the word's audibility.

Recent studies of earworms come in two forms: descriptive/anecdotal and empirical/theoretical. An exemplary descriptive account is found in neuroscientist Steven Brown's article "The Perpetual Music Track: The Phenomenon of Constant Musical Imagery" (2006), which chronicles and comments on Brown's own incessant earworms. An exemplary theoretical account can be found in Margulis' chapter "Earworms, Technology, and the Verbatim" (2014). Based on available empirical research, including studies conducted in her own music cognition laboratory, Margulis argues that the earworm "parallels and exaggerates the

unusual repetitiveness of actual music in the world" (2014, 76). Margulis' sense is that the quotidian nature of earworms—everyone seems to get them—reflects the increasing repetitiveness of music-listening practices more generally. This leads her to conclude that earworms have a special connection to recording technologies.

Musicologists Robert Fink and Eldritch Priest share with Margulis this techno-centrist view of earworms. For Fink, the "pure control of/by repetition" is an "aesthetic effect of late modernity, sometimes experienced as pleasurable and erotic, but more often as painfully excessive, alienating, and (thus) sublime" (2005, 4). For Priest (2016), the earworm is a realm of apparently "useless" thought that late-capitalism has begun to encroach upon; the mind's openness to earworms thus represents ways that even our most private thoughts can be put toward the production and circulation of capital.

Spencer does not work to explain *why* earworms are prevalent; he seems to take their pervasiveness as a given. He presents the earworm as evidence against the idea of a clearly bounded self, while advancing a view of emotion absent of coherent subjectivity. As Terada provocatively argues in her readings of historical philosophies of emotion, Western philosophers have consistently figured emotion itself as disruptive to subjectivity, and they did so long before poststructuralism rang the subject's death toll. Being overwhelmed by disappointment, sickened by love, or surprised by joy mark the strangely permeable nature of emotive being. In Terada's thinking, emotion would not exist if we *were* subjects; in other words, emotion *requires* the death of the subject. While Terada does not treat Spencer's thinking in her research (she takes British romanticism as her analytical object and deconstruction as her method), Spencer is an important example of the types of nonsubjective ideas about emotion that she locates in historical

texts and that she uses to dismantle the Jamesonian idea that the "death of the subject" implies a concomitant "death of emotion."[49]

At the same time, Spencer's conception of the self imagines itself as an object; it "can know itself only by the objective registry which it has just left of itself" (1855, 46). By this same logic, he figures the "Will" as an emergent property of habit: "Not only do Memory, Reason, and Feeling, simultaneously arise as the automatic actions become complex, infrequent, and hesitating; but Will arises at the same time, and is necessitated by the same conditions" (Ibid., 612). If Will and Feeling are not figured as arising independently from one another, and are equally a product of one's experiences and practices, then it is not hypocritical for Spencer to also argue that one has the power to do agential things like "Ignore the State" (1851, 206). In order to better understand the uniqueness of Spencer's position, it is useful to compare it to recent studies of subjectivity within music studies.

In Suzanne Cusick's accounts of sonic violence in the War on Terror, she describes two competing models of subjectivity in music studies. The first describes subjects as self-contained, autonomous, and capable of rational decision-making. The second is a "vibration-centered" model that acknowledges the *a priori* interconnectedness of all entities (Cusick 2013, 277-279; see also Dohoney 2015, 144, for discussion). The first model, Cusick notes, reflects a liberal-democratic fiction of selfhood whereby subjects are seen as having control over their emotions and intentions, and which renders them fit for socio-political work. The second reflects our immersion in a porous, resonant "universe of things," where distinctions between entities (e.g., self and other, humans and nonhumans, organic and inorganic) are not always clear—this recalls

[49] Terada is responding to Fredric Jameson's *Postmodernism*, which blithely suggests that the "death of the subject" heralds a death of emotion as well, "since there is no longer a self present to do the feeling" (1991, 15).

the uncanny "living world" that Steven Shaviro reads out of Gwyneth Jones' science fiction short story "The Universe of Things" (2011), in his book of the same title (Shaviro 2014). There are correlations between the vibrational account of selfhood identified by Cusick and the Whiteheadian tradition of process-based metaphysics that Shaviro so eloquently summarizes; indeed, in Spencer's discussion of the earworm, he occasionally accords with the style of thought proffered by Whitehead, Deleuzian affect studies, and what Jane Bennett calls *vital materialism* (2010). Spencer's thinking indeed has a processual flair to it, being more considered with the "correspondence" between things than the things themselves; and his all-encompassing theory of evolution represents an early and influential blow to anthropocentrism. At the same time, however, Spencer's thinking also represents a kind of ultra-anthropocentrism, in that his model of progress sees the human rising above its animalistic origins. With regard to Spencer's theory of the earworm, he can be seen as merely suspending the fiction of personhood in order to reveal and elevate the uniqueness of the human. In this sense, Spencer's conception of the subject sits somewhat uncomfortably between the two models of subjectivity recounted by Cusick.

Another set of musical approaches to subjectivity can be found in theories of musical embodiment and experience, which happen to have a great deal in common with Spencer's thinking. Embodied music theories often build on Gibsonian affordance theory (Gibson 2014 [1979]) to posit that the world is perceived not just in terms of the *forms* of objects but the ways in which objects can be *engaged*. The idea that music affords opportunities for interactivity is one way of explaining the sense of agency that listeners often attribute to music.[50] For thinkers like Arnie Cox and Matthew BaileyShea—proponents of a "mimetic hypothesis" of musical interactivity—interactions between musical objects and listening subjects are *always*

[50] See Clarke 2005, Cone 1974, DeNora 2000, Robinson 2005, Windsor & de Bézenac 2012.

characterized by agential actions. Cox suggests that a mimetic hypothesis has implications for evolutionary theories of music's origins (2016, 3-4; 74-76). He argues, "musical experience involves an adaptation, or aestheticization, of ancient and practical perceptual-affective-cognitive processes" (Ibid., 3).[51]

There are many analytical benefits to imagining music as a "sentient persona," as in BaileyShea's evocative analysis of Samuel Barber's *Adagio for Strings*. Consider his discussion of the analytical idiom "the melody struggles to ascend":

> If I say that the Adagio melody struggles to ascend, I'm treating the melody as an independent sentient agent—something that wants to achieve a particular goal. But the simple phrase 'struggles to ascend' implies something far more complicated, which might be expanded as follows: 'When I imagine what it's like to be the Adagio melody, I imagine a painful, difficult struggle to rise upward. But since I know *I'm* not ascending when I listen to the piece, I imagine the melody as the agent of the action, and I empathize with its plight.' Applied more generally, this suggests that we have a sympathetic, subjective response to music, which we can experience (when listening) from the standpoint of a neutral, objective observer. And as analysts, we step back and recount what 'the music' does, even if, in a very important sense, *the music is us*. (2012, 11, emphasis added)

I will set aside the problematic idea of a "neutral, objective observer" and say that theories of mimetic agency like BaileyShea's have been productive for moving beyond treatments of

[51] It is not clear whether Cox's use of the term "adaptation" implies an adaptationist view of music or if he is simply describing a process of change. It is worth noting that his idea that music is an adaptation of ancient cognitive processes is similar to Darwin's: "Music has a wonderful power, as I have elsewhere attempted to show, of recalling in a vague and indefinite manner, those strong emotions which were felt during long-past ages" (1872, 219).

listening as the apprehension of a static object and toward notions of listening as dynamic attending (see also Gadir 2018). In BaileyShea's words, listeners have "sympathetic" and "subjective" responses to music; phrases like "struggles to ascend" metaphorically capture the sense that music is, in some way, *like us*: it feels and behaves like we do, and we make sense of it through a kind of imaginative identification or empathy. There is a paradox inherent to BaileyShea's analysis, in that he wishes to highlight the dynamic convergence of music and listener but he does so through the ideal of a neutral analytical subject—the music theorist is therefore figured as a kind of supersubject, capable of suspending his own perception long enough to get at the objective nature of "the music." Still, because he is primarily concerned with developing strategies for recognizing agency where it was previously sidelined or outright denied, he is wise not to spend time complicating notions of subjectivity itself.

Similarly, in "Action and Agency Revisited" (2013) Seth Monahan elects not to reflect on the nature of agency itself, but rather to explore the tendency among music analysts to ascribe agency to sonic phenomena. Monahan begins by describing a rhetorical strategy that is common to music analysis: attributing agency alternately to the composer, to the piece, to individual parts of the piece, or to the listener. As a demonstrative example of this familiar (and fantastic) mode of music-analytical writing, Monahan quotes from Joseph Kerman's analysis of the opening movement of Beethoven's A-minor String Quartet, op. 132. Monahan identifies a "dizzingly inconsistent" (Ibid., 321) handling of musical agency; at times the piece appears to be a unified sentient being; at others the agency of the composer is in control; at still others, multiple intra-musical entities compete for command. Attempting to sort through the "agential chaos" (Ibid., 322), Monahan posits four fictional agent types, or agent classes (the *individuated element*, the

work-persona, the *fictional composer*, and the *analyst*) and expertly theorizes their hierarchical roles in various examples of music-analytical prose.

These four agent classes exist hierarchically in a "relational matrix" (Figure 3.1). Agency can be transferred up the hierarchical rankings, but rarely down: "*any musical event that can be regarded as agential can also be construed as the intentional action of any higher- (but not lower-) ranking agent class*" (Ibid., 333, emphasis in original). For instance, an individuated element (I'll choose an example: the improvistory synth solo that begins at 1:11 in "With Uuuuuu" by DJ Paypal, Feloneezy, and Jackie Dagger [2015]) can be seen as an autonomous dramatic agent. But we can also understand it as the action of a fictional synth soloist participating in the construction of the musical work "With Uuuuu"—thus we advance up the hierarchy by one rank, from Individuated Element to Work Persona. At the same time, we can think of this fictional synth soloist and the track as a whole as being controlled by the agency of the three artists who put the track together; thus we advance upward again, to the Fictional Composer(s). Finally, we can move upward once more, to the analyzing agency of me, your sparkly dissertation author.

1. Analyst
2. Fictional Composer
3. Work Persona
4. Individuated Element

Figure 3.1: *Monahan's relational matrix,*
a hierarchical ordering of agent classes (2013, 333)

Monahan believes that a subversion of this hierarchy—what he calls a "hierarchical contradiction" or an "ambiguity"—is a rare "extraordinary situation" (Monahan 2013, 346 and 353). Spencer's earworm is an example of such a situation. An earworm is an improbable

instance of the *Analyst being controlled by an Individuated Element*. The Individuated Element in this case is whatever portion or aspect of music is being repeated; indeed, the earworm controls from the bottom up. A short segment of music repeats itself obsessively, bypassing the logics of the Work Persona, demolishing the song's original form, ignoring the desires of the Fictional Composer, and irritating the Analyst. In this sense, the earworm has something in common with descriptions of indeterminate music, where antiteleological musical structures are easily heard as devoid of agency, "present[ing] static endless Nows" (Kramer 1978, 178). But there is a more subtle argument to be made here, in that the earworm is less a case of subverted hierarchy driven by the "agency" of repetition itself. Spencer's earworm helps us go a step beyond Monahan, to thematize a sense of uncertainty about where musical agency is coming from, and about who or what is controlling the action. Spencer's earworm is unusual in that it highlights this agential chaos itself.

One effect of thematizing agential chaos is a shift in musical meaning. Let me explain this with an example. For several weeks I have had Ariana Grande's song "better off" stuck in my head. I like the song, so its presence as an earworm is not a bother to me. My attraction to the song can be tracked in musical terms, but it is difficult for me to separate my analysis from my imagined affinities with Grande, my knowledge of the song's creation and production, and my opinions about its meanings. To borrow Monahan's analytical language, I am moved by Grande's vocal line (an Individuated Element), which I imagine being part and parcel of "better off" as a whole (the Work Persona), as designed by Grande and her production team (Fictional Composers). As the Analyst, I can describe the musical structures that catch my attention in this song—the subtle mixture of duple and triple rhythmic profiles, the use of a wide vibrato, the melancholy vibe of the song. But when "better off" becomes an earworm, my interpretations of

its meanings shift. The agency of the track becomes blurred. Ironically this can have the effect of making the song seem more significant to me, as though I am being prompted to think of it not out of desire but by necessity, as though some other side of myself is telling me something. Because the music seems to come from nowhere and no *one* in particular, it becomes infused with a special aura. I did not choose to listen; rather, I was chosen. Were this a song I despised, made up of meanings I cannot identify with, I might find all this terribly disturbing. But in the case of "better off" my earworm is welcome. I enjoy its power to gently propel me into a realm of fantasy and obsession.

My claim that it is enjoyable to have a song stuck in my head may seem like a subtle analytical point. But consider, for instance, how it impacts one discussion of earworms in contemporary music theory, specifically Arnie Cox's mimetic hypothesis. For Cox, all human communications are grounded in exchanges of embodied empathy, whereby musical subjects imagine themselves producing the sounds they hear. Theories of musical interactivity are gaining traction in music studies, but the models of emotion, agency, and subjectivity advanced by such theories remain insufficiently theorized. Consider, for instance, Cox's discussion of a correlation between mimetic behaviors and aesthetic pleasure. In one passage, he develops this hypothesis into a brief reflection on matters of taste:

> We can refuse, implicitly or explicitly, the mimetic invitation of a given performance, style, work, or passage, which is to say that we can mimetically disengage. *Note that, in the moment, it is not clear to what extent this is a matter of will.* While there are certainly non-mimetic reasons for liking or disliking some music, the hypothesis holds that liking and disliking comes in part from liking or disliking what it invites us to do. (2001, paragraph 51, emphasis added)

"Mimetic disengagement" is one way of describing disinterest—when we are disengaged, it is assumed we are not interested or enjoying what is being offered to our attention. For Cox, "mimetic disengagement"—the idea that listeners can opt out of mimesis—is a matter of *preference*, but not necessarily a matter of *choice*, though Cox does not attempt to theorize this distinction further ("liking" and "disliking" are both left untheorized).

In a separate passage, Cox describes having a song stuck in his head as a possible "exception to the correlation between mimetic representation and aesthetic pleasure" (2011, fn. 17). Following Halpern and Bartlett (2011), he suggests that agreeable experiences with earworms are more common than their disagreeable counterparts; disagreeable earworms are simply more noticeable and memorable. Cox claims that this makes earworms consistent with the correlation between mimesis and pleasure that he proposes. For him, earworms raise questions about potential "malfunctions" of the mimetic processes upon which "we depend for comprehension of speech and music" (2011, fn. 17). Spencer's invocation of the earworm as a feature of nineteenth-century Victorian life (notably before the onset of recording technologies and the relentlessly repetitive listening practices that scholars like Margulis and Fink see as key to the modern-day prevalence of earworms) suggests that "malfunctions" like annoying earworms are actually features of perception, rather than bugs. This is not merely to point out that "even functioning is a kind of malfunctioning" (Morton 2012, 97).[52] It is to argue that the

[52] It is worth quoting Morton at length on this point: "When you see 'marvelously adapted' language it is incorrect… Adaptation doesn't mean fitting into an environment in a way that's perfect. It means that your particular malfunction didn't kill you before you passed on your genome. This malfunction is otherwise known as a genetic mutation. Such mutations are really cheap versions of adaptation, 'lame' in a quasi-precise sense that all organs are kinds of malfunctioning prostheses. The famous phrase 'Survival of the fittest' was inserted because people were worried about the cheapness and the lameness. But even that phrase doesn't mean

experience of having a song stuck in one's head—whether we reject its demand for our attention, enjoy it for its invitation to "hear" something we love, or love-hate it for its insistence that we listen—tells us something meaningful about human psychology.

How does one get rid of an earworm? Put differently, how does one regain control? Spencer recommends a cure:

> One remedy for the evil, which is temporarily if not permanently efficient, is that of voluntarily taking up in thought some other melody: the result being that as consciousness will not contain both, the original intruder is for a time extruded. There is some danger, however, that the invited occupant will get possession instead. (1902, 12).

The negativity of Spencer's language—"annoying," "evil," "intruder"—suggests infestation, a plague of earworms. He seems to be wondering whether any rational individual person would actually *enjoy* such a mental state. The music that gets stuck in his head is music he describes as vulgar. Spencer's irritation could be due to the repetition itself rather than which songs he might actually have been listening to. But at the same time, Spencer is clearly talking about music he hears most often—too often—the tunes "everywhere repeated by street pianos."

Spencer's perspective provides an interesting twist on Priest's sense that the earworm is a kind of machine for feeling—and for being felt. In Priest's philosophy of musical technics, "music is a kind of technology," one that produces "an abstraction of feeling" (2016, 4). Here, earworms are heard as "expressive of the way historically useless thinking, the kind of thinking

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'the survival of people having six pack abs' or 'the most perfectly fitted into the environment'" (2012, 98).

we associate with reverie and brooding, is being rhetorically and imaginatively recuperated as a passive technology of the self" (Ibid., 2). Priest suggests that the "ideosonic persistence" of earworms is indicative of the "mad and fatalistic" hypervitality of late-capitalism (Ibid., 17). Under late-capitalism, even the mind's capacity to be spontaneously gripped by earworms can be co-opted toward a specifically economically-oriented construction of selfhood, in Priest's configuration. The implicit ethical consequences of this take are particularly devastating. Just as there is no ethical consumption under capitalism, there is no ethical thought—and therefore no ethical personhood—under capitalism.

Priest's primary intellectual debt in this essay is to philosopher Suzanne Langer, for whom music is "articulate but non-discursive," its significance "felt as a quality rather than recognized as a function" (1953, 32). By non-discursive, Langer means that music "lacks one of the basic characteristics of language—fixed association, and… a single, unequivocal reference" (Ibid., 31). Music serves as a symbol of "the pattern of life itself," its import constituted by "[f]eeling, life, motion, and emotion" (Ibid., 32). Its lack of "vocabulary" makes it abstract, general, and without conventional reference. For Langer, and for Priest, music's symbolic agency imports pure sensuality, explained through the totalizing concept of *significant form*. In this sense, music is an "abstraction" that is only perceivable insofar as it is felt (Priest 2016, 3). This implicitly anti-formalist position is what supports Priest's argument about the earworm's place in the emotional/affective landscape of late-capitalism.

One might extend Priest's analytical program by arguing that the significance of Spencer's earworm is found not in the structural features of earworms—their form, rhythm, harmony, melody, etc.—but somewhere else. It matters not which songs we get stuck in our head, or what their musical forms might be. What matters is our capacity to have songs stuck in

our heads in the first place. It is that capacity that transforms apparently "useless" thinking into important phenomenal experience. The earworm is an opportunity for intrusion that is particularly intimate—as well as particularly insidious—because its meaning is more affective, more tonal, and more resistant to analysis.

Priest asks whether the earworm can serve as a "limit case of perceivable abstractions in sound"; he explores but ultimately rejects the idea of the earworm as an example of Baudrillard's illusive "integral music" ("music in which sounds have been clarified and expurgated… shorn of all noise and static" [2005, 27-28]). This ultimately leads him to an ontological crisis ("And yet is this still music?" [Priest 2016, 10]). The earworm thus presents a challenge not only to our understandings of the nature of the listening subject but to the nature of music more generally. In so doing, it is a prime example of instances of thought that are uniquely open (and uniquely vulnerable) to outside influence.

From the nonsubjective theory of emotion latent within Spencer's evolutionary account of music, this chapter finds affinities between Spencer's thinking and contemporary embodied music theory, specifically the ways that emotion can confuse the expressive directionality of musical meaning, *by virtue of its nonsubjective nature*. Put differently, the "agential chaos" of musical meaning is itself what leads thinkers like Spencer to treat his own aesthetic preferences and desires as natural and universal, even as he recognizes and theorizes that agential chaos itself. This chapter also recognizes two critical ideas about how emotion complicates how music scholars theorize human subjectivity: 1) the idea that the "mind-body problem" described by Cusick and other theorists of musical embodiment is not necessarily itself to blame for the problems associated with music theories built on fantasies of disembodied objectivity, and 2) the idea that embodied music theories, which purport to reinsert the body back into their accounts of

musical meaning as a remedy to mind-body dualism, do not always avoid the problems associated with Cartesianism—Spencer is a classic case.

As I was concluding this chapter, my mother sent me a personal reflection on earworms:

> I realized as a result of reading this chapter that I have not had very many earworm experiences lately, which is significant because I hear popular music constantly at Jazzercise classes and that is where mine came from typically, although there have also been some from the Broadway station I listen to on XMradio. I am wondering what changed that caused me to not have so many of these earworms recently. Is the music less catchy??? Am I somehow becoming immune? They used to happen when I was sleeping but I can't remember the last time that happened. I am most aware of repeated musical themes when I am mowing the lawn. I suddenly realize that a melody is repeatedly going through my head as I mow. Sometimes I'm ok with it, and sometimes I consciously change to another tune because I don't like the one that seemed to start of its own accord. Now I want to pay more attention to which ones appear.[53]

In her description, earworms are mysterious things that come and go without awareness or decision. Her metaphor of contagion ("Am I becoming immune?") recalls the infectiousness that accounts of repetitive musical imagery like Spencer's have long thematized. Earworms here are gentle intrusions; in my mother's case, they are made out of experiences dancing, or listening to the radio, that then get activated in quieter moments—"as I mow." I too find my earworms in company when there is space to notice them, or when it is important I think about something else—in short, when their quiet repetitions can be given their due attention. Giving them attention means giving them energy, giving in to their demands. But it also means opening

[53] Personal correspondence with Ellen Shulman Piilonen. Email. May 26, 2019

oneself to their invitation to think otherwise. The earworm is an instance of agential chaos so minor it is almost imperceptible. That is what Spencer means when he says having a song stuck in his head problematizes his sense of self.

CHAPTER FOUR

Music and Language in Spencer's Evolutionary Thought

Let me briefly recount the terrain covered up to this point. In 1857, two years before Darwin's *Origin of Species,* Spencer introduced a theory of origins where music represents a specifically human stage of evolutionary advance that follows from language acquisition.[54] Darwin's perspective did not appear until *The Descent of Man* (1871), where he traced the origins of music to the spontaneous formation of rhythms and cadences in animal courtship behaviors, corresponding to a prelinguistic phase of human evolution. In subsequent letters and publications, Spencer maintained his theory that the biological activity of music is an advanced province of the human species, which alone possesses the emotional force and variation necessary for musical expression, and which was audible in musical form—that is, in pitch, timbre, rate of variation, etc.

At the heart of Spencer's theory of music's origins is vocal expression, which he believes is where the *mimetic* nature of communication plays out most cannily. For Spencer, vocal sounds are direct imitations of interior states like emotion or intention. Music, in turn, is an "idealized language of emotion" (1857, 405). In Spencer's treatise on psychology, published two years before his account of music, he argued for a similarly mimetic origin for language: "the symbols of thought… are at first, merely *reproductions* of the things signified"; thus, "the notion of likeness underlies all language" (1855, 179).

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[54] My investment in Spencer was initially inspired by Zon's claim that evolutionary thinking "entered the bloodstream of Victorian music culture largely through the writings of Herbert Spencer, followed some years later by Darwin" (2014, 196).

In this chapter, I examine the mimetic hypothesis that grounds Spencer's evolutionary accounts of language and music. The crux of Spencer's mimetic theory of music lies in his famous injunction: "All music is originally vocal" (1857, 397). By this he means that all music originates in impassioned speech, which he believed evolved first. This means that all *language* is also originally vocal, in Spencer. And the origins of language, for him, lie in acts of vocal imitation, whether of external objects or of interior sensations.

Across his oeuvre, Spencer tracked a teleological line of ascent from simple vocal exclamations, to complex speech, and finally to music. This principle of progressive development follows from his vision of an increasingly dynamic emotional capacity that is specific to the human, and that expresses and evidences an equally dynamic capacity for vocal expression. The human species is here understood as a uniquely emotional creature, capable of communicating its uniquely complex emotions through sound (1857, 398-400). The Spencerian idea that vocal expressions developed teleologically from simplicity to complexity, and from homogeneousness to heterogeneousness, reflects his more general theory of evolutionary progress. His metaprinciple—the inevitability of evolutionary progress—anticipates modernist aesthetic ideologies of the sort famously criticized by Jean-François Lyotard:

> I will use the term modern to designate any science that legitimates itself with reference to a metadiscourse ... making an explicit appeal to some grand narrative, such as the dialectics of Spirit, the hermeneutics of meaning, the emancipation of the rational or working Subject, or the creation of wealth. (1984, xxiii)

It should be no surprise then that historians of Spencer's influence alternately describe him as the "inventor of modern life" and "getting it wrong from the beginning."[55]

In reconstructing Spencer's ideas about language and music, I highlight his *mimologics*. That is his sense that the basis of vocal communication can be traced to sonic imitations of the phenomenal world. Gérard Genette, who coined this term in his seminal book by the same name, defines mimologics as "a certain turn of thought or of imagination which assumes, rightly or wrongly, a relation of reflective analogy (imitation) between 'word' and 'thing' that *motivates*, or justifies, the existence and choice of the former" (1995 [1976], 5). The figure of the mimologist is one who believes words are imitations of the things they signify, implying a more-or-less direct translation of phenomenal world into noumenal sign. For Genette, the mimological program was inaugurated in the Western tradition by Plato's treatise *Cratylus* ("on the correctness of names"). Locating Spencer within Genette's much longer history of mimologics—alongside Plato, Leibniz, and others—brings often-overlooked philosophical dimensions of Spencer's music evolutionism to the fore.

I also reflect on the ways that language and music converge in Spencer's philosophy of emotions. The emotionality of music remains an important problem for music theory, having long been conceived in opposition to the rationality and precision of language; debated as expressed by the music, on the one hand, or aroused in the listener on the other; asserted as something that obscures or clarifies the entwinements of mind and body, self and other, or human and non-human; and invoked as the pinnacle of all arts. In Spencer's account of musical emotion, a central problem is emotion, and by extension, emotion's interplay with one's sense of

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[55] See Mark Francis' *Herbert Spencer and the Invention of Modern Life* (2007) and Kieran Egan's history of the "progressivist" position in Spencer, John Dewey, and Jean Piaget entitled *Getting It Wrong From the Beginning* (2002)

selfhood.[56] As we have already seen, Spencer often treats emotion in ways that are nonsubjective, meaning his vision of emotion presents challenges to a classical model of subjectivity as rational and self-contained. I continue to discuss Spencer's nonsubjective account of emotion here, in order to scrutinize how his theory of mimesis is ultimately an argument about the boundedness (or boundlessness) of the human subject.

Spencer's approach to subjectivity treats the self as leaky or resonant; he sometimes refuses clear distinctions between self and other. In the realm of poststructuralist critique, the often-referenced "death of the subject" signals increasing skepticism toward the idea of an "autonomous bourgeois monad" (to borrow a memorable turn of phrase from Fredric Jameson [1991, 15]). For some this has led to an attendant death of *emotion*, or at least a death of models of emotion that rely on the subject's rationality and containedness.[57] Here we find the birth of affect theory,[58] where emotion is all messy and transpersonal. Important to these conservations is the idea that the death of the subject is a relatively recent phenomenon. I argue differently that the kinds of argument advanced by contemporary affect theory are not new. Evolutionary theorists like Spencer were already grappling with theories of emotion that troubled the rationality and containedness of human subjects. There is basically no way their work would not have signaled trouble for autonomous subjectivity because they highlighted an origin for

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[56] I also argue that evolutionary musicology's troubled relationship with classical models of subjectivity should put it at odds with programs of music research that work to retain the aesthetic value of subjectivity, such as those that rely on emotional expressivity, *a la* the debate between Jerrold Levinson (1990, 1992, 1996) and Peter Kivy (1997, 1980) over whether musical emotion comes from the music or the listener.

[57] As I have mentioned, Fredric Jameson's *Postmodernism* suggests that the "death of the subject" heralds a death of emotion as well, "since there is no longer a self present to do the feeling" (1991, 15).

[58] In Roger Mathew Grant's recent work, the recent turn to affect in the humanities is in fact a *rebirth* of certain early modern approaches to affect and sensation (see his unpublished conference talk at SMT 2018, as well as his forthcoming book).

humanity that was both pre-human and materially interconnected with other forms of life. And yet emotion and subjectivity are often seen as conceptually entwined; apparently, as Jameson put it, there must be a "self present to do the feeling" 1991, 15; quoted in Terada 2001, 2). Voice, too, "*promises* a subject; it excites or haunts a listener to recognize in the voice a 'someone,'" in the words of Brandon LaBelle (2014, 6). By reading Spencer in the age of postmodernism, I am brought to the following questions: How have evolutionary theorists conceived of musical emotion not after the "death" of the subject but prior to its birth? And, what significance do these nonsubjective theories of musical emotion hold in the longer history of thought about musical origins? These questions are interesting to ask not just of historical evolutionary theorists like Spencer, but also of the present state of the field.

In my discussion of Spencer's mimetic theory that follows, I begin by defining the central theses of Spencer's theory of music and by contextualizing them within Victorian musical culture. Next I turn to Spencer's theory of language, a neglected corner of his Synthetic Philosophy. Voice and emotion are key terms here; for Spencer, voice and emotion are intimately entwined with language and music. Voice exemplifies the Spencerian notion of a physiological link between emotion and muscular movement—indeed, Spencer saw voice as the most ready example of the mimetic and emotive origins of communication. Departing from his peers, who largely asserted a divine or immaterial origin for vocal expression, Spencer posited a biological connection between voice and emotion that he believed was common to humans and animals alike. Spencer's recourse to what he called *reflex action*—the direct connection between voice and muscular sensation—accords with his assertion of a continuity between mind and body in vocal expression (see my chapter 2 for discussion). With this anti-Cartesian gesture, Spencer implicitly rejects a tradition of aesthetic idealism that holds sounds apart from the conditions of

their production. He also anticipates recent theoretical and experimental engagement with the materiality of vocal expression in music studies, albeit with vastly different socio-political aims. Although I argue against Spencerian ideas about musical and linguistic origins, my ultimate goal is constructive: we can learn something from the way that Spencer fails to make his case.

Spencer's Evolutionary Theory of Music – Basic Theses

Spencer outlines the basic tenets of his theory of music's origins in "The Origin and Function of Music" (1857). He summarizes the salient points of this essay as follows:

> We have seen
> (1) that there is a physiological relation, common to man and all animals, between feeling and muscular action;
> (2) that as vocal sounds are produced by muscular action, there is a consequent physiological relation between feeling and vocal sounds;
> (3) that all the modifications of voice expressive of feeling are the direct results of this physiological relation between feeling and vocal sounds;
> (4) that music, adopting all these modifications, intensifies them more and more as it ascends to its higher and higher forms, and becomes music simply in virtue of thus intensifying them;
> (5) that from the ancient epic poet chanting his verses, down to the modern musical composer, men of unusually strong feelings, prone to express them in extreme forms, have been naturally the agents of these successive intensifications; and
> (6) that so there has little by little arisen a wide divergence between this idealized language of emotion and its natural language: to which direct evidence we have just added the indirect—that on no other tenable hypothesis can either the expressiveness or the genesis of music be explained. (1857, 405)

All together these theses add up to a theory where primitive vocal expressions develop into music by virtue of a gradual intensification of both the emotions felt and the sounds produced. The agents of this intensification are highly emotional men: musical composers. The result is an advanced form of emotional communication that serves to enhance human happiness. Let us examine each thesis in detail.

(1) *"there is a physiological relation, common to man and all animals, between feeling and muscular action;"*

Spencer begins "The Origin and Function of Music" with examples drawn from animal behavior: the excitement of a domestic dog that has been promised a walk, a cat's pleasure at being stroked, an angry lion's knitted brow. Within this impassioned menagerie, Spencer locates the human species, which is distinguished from the lower animals by its capacity for diverse and complex emotions: "In ourselves, distinguished from the lower creatures as we are by feelings alike more powerful and more varied, parallel facts are at once more conspicuous and more numerous… We shall find that pleasurable sensations and painful sensations, pleasurable emotions and painful emotions, all tend to produce active demonstrations in proportion to their intensity" (1857, 396).

What is emotion and what does emotion do, in Spencer? Recall from chapter 2 of this dissertation that for Spencer emotion is directly tied to muscular activity. Spencer grounded his theory of musical emotion in the law of reflex action, that is, the direct connection between emotion and movement. Reflex action is "a law conformed to throughout the whole economy, not of man only, but of every sensitive creature—a law, therefore, which lies deep in the nature

of animal organization" (1857, 400). This enables him to establish a physiological basis for emotion, as opposed to a divine or immaterial one.

Spencer's account of mental action was highly unusual for its time. With his interest in the irrational, instinctive, embodied, and unruly (the self in particular), his ideas about emotion were exceptional.[59] His closest counterpart was Alexander Bain, whose *The Senses and the Intellect* (1855) appeared the same year as Spencer's *Principles of Psychology* (1855). Both Bain and Spencer represented substantial revisions of the old associationist psychology, which held that the mind works through a series of concatenated leaps or associations.[60] It is important to remember that psychology did not cohere into an academic discipline until the turn of the 20th-century, when experimental psychology labs opened at Cambridge and University College London (1897) and the British Psychology Association was founded (1901).[61]

In addition to differing from his peers with regard to the question of association, Spencer's evolutionary psychology departed from the "discourse of the soul" that dominated the field. In his *Principles of Psychology*, he established that the mind is radically integrated with the material body. He brings this anti-Cartesian attitude to his essay on music. "[F]eeling is a stimulus to muscular action"; thus, "all the leading vocal phenomena… have a physiological basis" (1857, 400). Spencer did not speak about emotion in pejorative terms. Music scholars

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[59] Consider Spencer within this incisive description of Victorian psychology by Rick Rylance: "Victorian psychology was clearly overwhelmingly rationalist and intellectualist in methodological demeanour. It made little of apparently irrational experience, and avoided the instinctive. It evaded experiences of physicality and of the body except as issues of abstract sensation considered epistemologically, or, in physiology, as psychological bodies imagined in the anatomical inertias of death" (2000, 148).

[60] For a detailed discussion of Spencer's and Bain's psychologies and their place on Victorian psychology more broadly, see Rick Rylance's *Victorian Psychology and British Culture 1850-1880* (2000).

[61] For discussion see Rylance 2000, 5-17.

have pointed to the historical equation of music with emotion for having a role in the perceived femininity of music (Tolbert 2002). Spencer, however, sees emotion as a sign of cognitive advancement, and masculine skill. An increase in emotional capacity—that is, the possession of a wider spectrum of feeling, a greater ability to interpret others' emotional states, and the skill to express subtle interior states via musical expression—is, for Spencer, an index of power and evolutionary progress.

Progress, for Spencer, is the principle that underlies all aspects of the universe. Music is one example of the human species' advancement beyond so-called primitive vocal communication, and even beyond the highly emotive forms of speech used by poets and great orators. Primitive vocal exclamations evolve into language, in Spencer's account. Music continues this progressive ascent, representing an additional stage of development beyond language. Simple vocal expressions evolve into highly nuanced forms of emotional communication, and music is the most recent stage of this series of developments.

It is telling, then, that Western civilization's advancement is always the site of the more advanced musical principles he mentions. For instance, when he describes *recitative* (musical declamations that resemble ordinary speech) as an intermediary stage between speech and song, it is with reference to musical practices he saw as less developed than Western song. An emblematic passage:

> For recitative, or musical recitation, is in all respects intermediate between speech and song… Thus, then, we may not only infer, from the evidence furnished by existing barbarous tribes, that the vocal music of pre-historic times was emotional speech very slightly exalted; but we see that the earliest vocal music of which we have any account, differed much less from emotional speech than does the vocal

> music of our days. That recitative—beyond which, by the way, the Chinese and Hindoos seem never to have advanced—grew naturally out of the modulations and cadences of strong feeling, we have indeed still current evidence. (1857, 402-403, emphases in original)

Spencer's comments about "barbarous tribes" and "the Chinese and Hindoos" demonstrate a racist hierarchy wherein these groups and their musics are understood as less evolved than Westerners. Spencer makes claims like this frequently—in this essay and in all of his writings—using proverbially undeveloped people and cultures to demonstrate his sense that all things develop from homogenous simplicity to heterogeneous complexity (see in particular Spencer 1881 [1857]; 1867). He consistently stratifies things by their relative degrees of evolutionary advance, such as in his comparisons of the vocal timbres of a "servant-girl" and an "accomplished lady" (1857, 407). His arguments are gendered, racialized, and classed.

In this sense, Spencer's ideas about music and musical emotion function as a *technology of hegemony.* I am not the first to make this kind of argument. In Sylvia Wynter's account of the emergence of secular ontological accounts of the human, she demonstrates how colonial conquest led to an equation of "the human" with White Western bourgeois masculinity. Wynter warns against speaking of "the human" in singular, monolithic terms; for Wynter, an Enlightenment notion of humanity that is treated "as if it were the human itself" indexes a problematic recentering of white Eurocentric humanism (2003, 259).

Certain contemporary scholars have continued to use evolutionary theory to equate musical innovation with industrialization and the influence of Western culture, and thereby contribute to the view that non-Westerners and their musical practices can stand in as examples of less-evolved musical adaptations. The practice of treating non-Westerners and their musical

practices as living evolutionary relics is an unfortunate, if fairly common, misreading of evolutionary science. The notion that evolution has a goal is often used to uphold the idea that the human species is evolution's end product, with certain cultures or races depicted as its ultimate expression.

(2) *"as vocal sounds are produced by muscular action, there is a consequent physiological relation between feeling and vocal sounds;"*

Spencer had a tendency toward overgeneralization. His theory of vocalized feeling is no exception. In Darwin's critique of Spencer, he hits on Spencer's tendency toward the overgeneral: "It may be admitted that the voice is affected through this law; but the explanation appears to me too general and vague to throw much light on the various differences… between ordinary speech and emotional speech, or singing" (Darwin 1872, 86-87). Let us look more closely at what distinguishes these things for Spencer, if not for Darwin.

In Spencer's account, the voice's expressiveness is "innate" (1857, 400). He admits a conventionalist attitude toward our ability to ascribe meaning to others' expressive uses of the voice: "[W]e have acquired an established association between such sound and the feeling which caused it" (1857, 400). But Spencer is also clear about his belief in a mimetic link between vocal sound and emotion: "When the like sound is made by another, we ascribe the like feeling to him; and by a further consequence we not only ascribe to him that feeling, but have a certain degree of it aroused in ourselves. Thus these various modifications of voice become not only a language through which we understand the emotions of others, but also the means of exciting our sympathy with such emotions" (1857, 400). This, he insists, constitutes the basis for a theory of

music. Music can aid in emotional contagion; by being stirred by the emotive expressions of others, we find ourselves feeling a bit of what they do.

(3) *"all the modifications of voice expressive of feeling are the direct results of this physiological relation between feeling and vocal sounds;"*

"Modifications" of voice are all manner of audible differences: changes in pitch, rhythm, timbral quality, etc. For Spencer "recitative of the early Greek poets (like all poets, nearly allied to composers in the comparative intensity of their feelings), was really nothing more than the slightly exaggerated emotional speech natural to them, which grew by frequent use into an organized form" (1857, 404). As an organized form, music acts like a technology of emotion. Specific sonic structures afford different emotional affects; for instance, "greater extremes of pitch, and wider intervals" enable "a greater variety and complexity of musical expression" (Ibid., 404). Spencer places a premium on complexity.

Spencer draws comparisons between vocal expression and gestural forms of communication, like dancing. Dancing "is a rhythmical action natural to elevated emotion… And when we bear in mind that dancing, poetry and music are connate—are originally constituent parts of the same thing, it becomes clear that the measured movement common to them all implies a rhythmical action of the whole system, the vocal apparatus included; and that so the rhythm of music is a more subtle and complex result of this relation between mental and muscular excitement" (Ibid., 402).

(4) ***"music, adopting all these modifications, intensifies them more and more as it ascends to its higher and higher forms, and becomes music simply in virtue of thus intensifying them;"***

For Spencer, music's emotional force is a development of the instinctive emotional responses exhibited by all creatures. Put metaphorically, music is emotion systematized. What are the implications here? In Max Paddison's "Mimesis and the Aesthetics of Musical Expression" (2010) he notes a historical distinction between the conviction that music is primarily a matter of mimesis and the conviction that music is primarily concerned with expression of emotion (126).[62] Spencer tries to have it both ways, in that he sees vocal expression as mimetic of both external natural phenomena (i.e., early humans imitating the cries of animals or other humans) *and* of internal felt phenomena (i.e., pleasure or pain); he sees music emerging from this double-mimesis.

Spencer describes five features (he calls them "peculiarities") of vocal expression: *loudness*, *quality* or *timbre*, *pitch*, *intervals*, and *rate of variation* (1857, 398). Each of these features indexes specific emotional and perceptual phenomena. For instance, consider Spencer's reflections on vocal *quality* or timbre:

> If after uttering a word in his speaking voice, the reader, without changing the pitch or the loudness, will *sing* this word, he will perceive that before he can sing it he has to alter the adjustment of the vocal organs, to do which a certain force must be used; and by putting his fingers on the external prominence marking the top of the larynx, he will have further evidence that to produce a sonorous tone the organs must be drawn out of their usual position. Thus, then, the fact that the tones of excited feeling are more vibratory than those of common conversation, is

[62] Paddison contributes details to the history of mimologics, for instance, by arguing that "expression" in artworks is in part a mimetic phenomena.

> another instance of the connexion between mental excitement and muscular excitement. The speaking voice, the recitative voice, and the singing voice, severally exemplify one general principle. (1857, 398)

When someone sings, they exaggerate the emotive force that underlies all bodily motion. In this sense, singing is a means by which one's emotion can be wielded intentionally, thus singing emerges as a kind of technical advancement. The differences between normal speech and singing are *heard* in the "more vibratory" tones of "excited feeling" and *felt* in the larynx. Spencer claims there is a progressive line of ascent from (a) the speaking voice to (b) the recitative voice (partway between singing and speech) to (c) the singing voice; the singing voice is the pinnacle of emotive control and performativity/technicity. For Spencer, "the distinctive traits of song are simply the traits of emotional speech intensified and systematized" (1857, 402). This is clearly opposed to how Darwin saw things; for him, what defines music is that it is *not* language.[63] Darwin identified a number of similarities between music and language. For instance, he saw the ability to sing songs as an acquired trait, like language. Darwin writes,

> The sounds uttered by birds offer in several respects the nearest analogy to language, for all the members of the same species utter the same instinctive cries expressive of their emotions; and all the kinds that have the power of singing exert this power instinctively; but the actual song, and even the call-notes, are learnt from their parents or foster parents… I have given the foregoing details to shew that an instinctive tendency to acquire an art is not a peculiarity confined to man. (1874, vol. 1, 55-56)

[63] For discussion of this point, see Rothenberg 2005 (35) and Zon 2017 (66).

Spencer took a special interest in a musical element he terms "rate of variation" (Figure 4.1). Increased variation implies increased complexity and heterogeneity—the goal of evolutionary progress. By pointing to the universal law of variation, he gestures toward the audibility of a more developed musical faculty. Relative degrees of evolutionary progress can be heard. This observation of a continuum of musical excellence sits alongside and helps to evidence Spencer's sense that all things develop from simplicity to complexity. Indeed, he describes the human as "the latest and most heterogenous creature" and the most "civilized" (1881 [1857], 236), which tracks with his sense that the most advanced forms of music will adhere to specific musical laws.

(5) ***"from the ancient epic poet chanting his verses, down to the modern musical composer, men of unusually strong feelings, prone to express them in extreme forms, have been naturally the agents of these successive intensifications;"***

In an essay celebrating the composer Meyerbeer, Spencer justifies his preference for subtle musical surprises. Spencer loves "familiar figures strung together in a new order" (1902, 115). He is bored with Mozart and impressed with Meyerbeer, whose style seems more refined to Spencer because it more effectively plays with his expectations. Spencer loves it when a conventional musical path gets diverted. "Sometimes, indeed, to test a composer's originality, I have, while listening, observed whether I could often anticipate, or partially anticipate, the phrases that were coming, or something like them, and when I could, have discounted my estimate of him," Spencer writes (1902, 114). With Meyerbeer's music, "there is generally much that is fresh—very few hackneyed phrases" (1902, 115). He loves "Robert, toi que j'taime" in particular. In his way, Spencer taps into how these composers combined stock musical phrases

into coherent larger forms (Gjerdingen 2007) in what amounts to a construction grammar (Gjerdingen & Bourne 2015). However, since Spencer does not play or read music, his analytical examples represent only vague impressions of what makes a stylish piece of music (Figure 4.1).

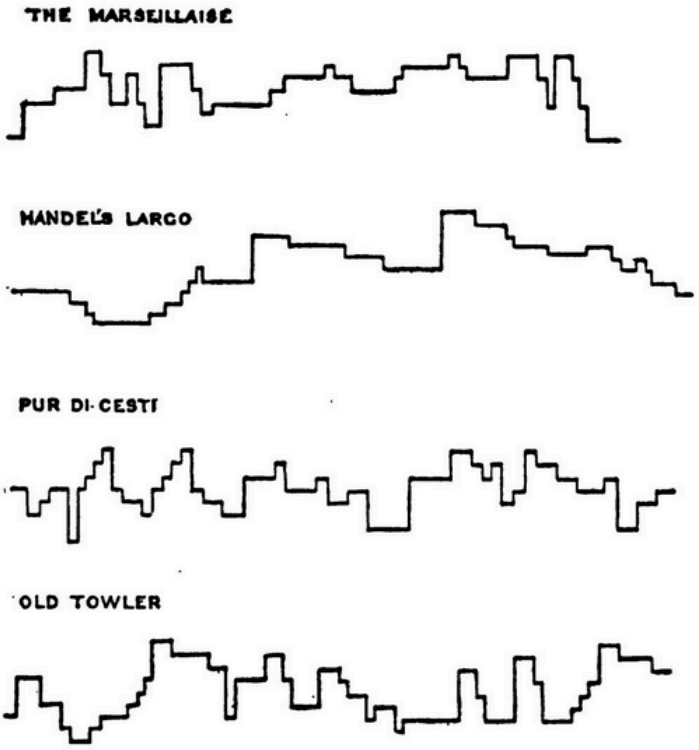

Figure 4.1: *Herbert Spencer's "notation" of four songs, in his discussion of the "universal fact" of melodic variation, in his chapter "Developed Music" (1902, 62-63).*

For Spencer, famous musical composers are the emissaries of humanity's emotional advancements. Because he believes that increased emotional precision and complexity are signs of progress, he praises his favorite composers for their deep wells of emotion. This thesis of Spencer's—that men of unusually strong feelings are the arbiters of musical progress—is not just interesting for its equation of masculinity with emotional complexity but for its elevation of emotional expression to the highest level of evolutionary progress. The composers he has in mind include Meyerbeer (he devotes an essay to him in his late collection of essays, *Facts and*

Comments [1902]), as well as Mozart, Mendelssohn, Chopin, and Beethoven (1857, 403). He also mentions the singer Tamberlik in "The Origin and Function of Music" as an example of a particularly overdramatic use of vocal tremulousness (Ibid., 401). Paying the proper respect to these musical luminaries is an aesthetic imperative for performers hoping to do justice to their works. In a later essay on "The Corruption of Music" Spencer complains about performers who seem too focused on themselves, thereby failing to pay proper attention to the thoughts and intentions of the composer (1902, 26-27).

Having a wide palette of musical sounds on hand is what allows "the musical composer to express the feelings possessed by others as well as himself… [This] also leads him to give musical utterance to feelings which they either do not experience, or experience in but slight degrees" (1857, 404). Spencer paraphrases the conductor Hans Richter: "[Music] tells us of things we have not seen and shall not see" (Ibid., 404). This is Spencer's promise for the future as well as his observation of the present. The most advanced forms of music are those that represent and deliver complex feelings through syntactical surprise and the avoidance of clichés.

(6) *"so there has little by little arisen a wide divergence between this idealized language of emotion and its natural language"*

For Spencer, music represents a gradual intensification and diversification of innate emotional capacities. This has implications for musicians whose music he deems boring, simplistic, lacking in refinement and subtlety. Among civilized people, he claims, music will naturally be more civilized as well. Spencer writes, "That music is a product of civilization is manifest; for though savages have their dance-chants, these are of a kind scarcely to be dignified by the title musical: at most, they supply but the vaguest rudiment of music, properly so called"

(1857, 405). Building on the general law of reflex action, Spencer postulates a mimetic link between communicative style and national language. This undergirds his argument in *The Philosophy of Style* that non-Latin English is the best language (1884 [1852], 12) and extends to his descriptions of lower forms of expression in "The Origin and Function of Music."

In the final paragraphs of "The Origin and Function of Music" Spencer addresses what he sees as music's higher purpose. Music bears on human happiness. It enables complex feelings to be communicated to others. Modifications of voice "give life to the otherwise dead words in which the intellect utters its ideas; and so enable the hearer not only to *understand* the state of mind they accompany, but to *partake* of that state. In short they are the chief media of *sympathy*" (1857, 407).

Spencer's lionization of music has interesting resonances with a previous generation of Romantic aestheticians, who understood music as a transcendent art form. As Emmanuel Kant had it, music is the most agreeable but the least conceptual of the arts, since it "merely plays with the sensations" (2000 [1790], 206 § 53). This same distilled sensuality led Arthur Schopenhauer to exalt music as the truth of pure feeling, extracted from the mere contingency of narrative and circumstance: "[Music] renders all the impulses of our innermost essence, but without any reality" (2010 [1818], 1:292). As "abstracted quintessence," it opens us to a "vividly aroused spiritual world… [which] speaks to us directly," while the other arts "speak only of shadows" (Ibid., 1.289, 285). Put another way, music presents emotional content without object-cause; without the body of the interpretant, it elevates the soul. Some version of this thinking lies behind Walter Pater's overquoted declaration: "All art constantly aspires towards the condition of music" (1888, 140). Despite Spencer's efforts to avoid treating music as a transcendent art, he

nevertheless preserves certain Romantic aesthetic investments in music as the most emotive, benevolent, elevated art-form:

> [M]usic must take rank as the highest of the fine arts—as the one which, more than any other, ministers to human welfare. And thus, even leaving out of view the immediate gratifications it is hourly giving, we cannot too much applaud that progress of musical culture which is becoming one of the characteristics of our age. (1857, 408)

The extent to which Spencer's evolutionary theory was imbricated with Romantic aesthetic ideology has been discussed before. Della de Sousa Correa writes: "Despite [Spencer's] demystification of music as a transcendent art, the role which Spencer allotted music at the conclusion of 'The Origin and Function' effectively placed it in the same position at the head of the aesthetic hierarchy which it had occupied in Romantic aesthetics" (2002, 23). Certainly a distinctly Romantic strain of aesthetics persisted in Victorian evolutionary musicology, but this does not figure prominently in what follows. Rather, I work to locate Spencer's theory of language origins within a longer historical arc, alongside older accounts of mimesis.

Spencer's Account of Language Origins

For Spencer, the origins of language (like the origins of music) lie in mimesis: "a name is a copy of some real attribute of the thing named… all language is in the beginning mimetic" (1881 [1857], 178). This suggests a non-arbitrary connection between communicative gestures and the things they reference. Emotion is central to these lines of thought because, for Spencer, the most basic forms of communication are the gestural and vocal exclamations that accompany

feelings. In this section I unpack some of the details of Spencer's mimologics in order to better understand his theory of musical emotion.

Some of the subtler aspects of Spencer's theory of music have been misunderstood because they have not been considered alongside his ideas about language. This is significant and surprising given that Spencer treats language as the evolutionary stage before music and the two remain connected, as two mutually compatible means of expression. Indeed, when Edmund Gurney critiqued Spencer's theory of music, it was to insist that music and impassioned speech were entirely distinct phenomena. For Gurney, counter-Spencer, "Music was a *separate order*, an adjustment of proportional elements of which speech knows nothing" (1880, 492).[64] My reading of Spencer's theory of language will primarily be drawn from his "Progress: Its Law and Cause" (1881 [1857]), *Philosophy of Style: An Essay* (1884 [1852]), and *Principles of Psychology* (1855).

Despite the apparent simplicity of Spencer's evolutionary theory of music, it has been a source of confusion since its publication. A significant sticking point is the question of how music and language fit together in Spencer's account. His position is most often summarized as "language develops into music."[65] This summary of Spencer has proven useful as a heuristic, particularly when described as a counterclaim to Darwin's sense that *music develops into language*. However, Spencer's ideas occasionally edge onto a *continuity theory* of language and music. I wish to emphasize this continuity because, per Spencer, language and music are united by the universal psycho-physiological principle of reflex action. Under reflex action, vocal expressions of various kinds share a common origin in muscular activity. Furthermore under

[64] See Levman 2000 (191-192) for further discussion of Gurney's critique.
[65] See in particular Kivy's 1959 comparative study of Darwin and Spencer, which remains a touchstone for historians of Victorian music evolutionism. See also Kleinman 2015, Patel 2010.

reflex action, some rather musical qualities are latent within language, that is, within all vocal expression. I turn to other writings of Spencer's to understand how he conceives of language and music's imbrication through voice.

I will start by clarifying the features of language in Spencerian thought that are most relevant to his theory of music. I also explore moments where sound becomes central to his theory of language origins, specifically through the use of phonic mimesis (sound imitation). This accords with an older mimetic argument, where words reflect something true about the things they signify.[66] For Spencer there is a "close kinship between naming and reasons" (1855, 178); this reflects an ancient tradition of *mimologics*—inaugurated by Plato's dialogue *Cratylus*, whereby the sounds of words imitate the things they signify. A detour into historical mimetic theories contextualizes Spencer's assertion of the mimetic origins of language and music. This in turn will help us better understand Spencer's account of musical signification, which builds up from the mimetic ground established in his account of linguistic signifying.

Spencerian Mimologics

Gérard Genette, who coined the term "mimologics" in his seminal book by the same name, defines mimologics as "a certain turn of thought or of imagination" that assumes a mimetic relation between word and thing (1995 [1976], 5). Genette's emphasis on "imagination" is germane here. Beginning with Plato's *Cratylus*, many have busied themselves with the impossible problem of communication's origins. For Genette this impulse to pin down the beginnings of things is attendant with another kind of desire: a desire to explain, justify, or

[66] Mimology has long been central to theories of music's origins, though to my knowledge the term is not commonly used by music scholars.

prescribe the functions of communication in contemporary life. One way to interpret this is negatively: Those on the quest for origins are merely trying to justify the way they themselves went about things. Another way to interpret it as a quest for something impossible, something that inspires wonder by virtue of its unknowability; indeed, the burden of proof that thinkers like Spencer run up against can help explain why matters of origins remain enduring and fascinating. A touch of imagination is therefore not out of place.

Genette is right not to romanticize the mimologist's imaginative impulse. Genette's interest is not so much in whether mimological arguments are true but rather what they reveal about the intellectual investments of their theorists. For instance, a strict mimological argument, of the type embodied by the eponymous figure in Plato's *Cratylus* (more on this in a moment), risks essentializing language as a more or less accurate representation of the phenomenal world, and therefore of the speaker's capacity to grasp that world. The nineteenth-century mimologist Max Müller makes the risks of this especially clear, with his treatment of language as unmediated thought: "The word is the thought incarnate" (1861, 369).

Debates about the origins of language—which some have called "the hardest problem in science" (Christianson & Kirby, 2003)—have a long history. For instance, in Jean-Jacques Rousseau's *Essay on the Origin of Language* (published posthumously in 1781) he describes primitive language as highly musical and emotive; its development into rational forms of language meant shedding some of these musical characters. By the mid-19th century linguistic societies in England and France were turning against the pursuit of a universal language and the study of language's origins. In James Stam's classic survey of 18th- and 19th-century studies of the origins of language, he describes an increasing controversy around the question. The study of linguistic origins was banned in 1866 by the Linguistic Society of Paris (Stam 1976, 255), a

pronouncement that no doubt had ripple effects across the continent, and in Victorian musical culture more specifically.

And yet the origins of things like language and music remained hot topics of conversation among nineteenth-century continental scholars. One distinct figure therein was Müller, who pioneered an eccentric account of language origins known as the "bow-wow theory." This theory suggests that the origins of language are found in onomatopoeia, that is, in imitations of nature. Genette points out a risk that accompanies this kind of mimologism of idioms: a "deep temptation… to naturalize and to mimeticize everything, and hence also the present-day diversity of ways of speaking" (1995 [1976], 124). Genette—in typically wry style—captures the ideologically heavy baggage of such treatments of language and thought as more-or-less identical: "Each natural language describes a countryside, tells a Story and expresses a *genius*, all specific and linked to one another by a 'marvelous concord.' Every idiom is the condensation of a folklore" (Ibid., 124). This insight will prove relevant in our examinations of Spencer's writings.

Further lessons can be drawn from Müller's example, specifically regarding the ontologizing affordances of theories of origins. For Müller, the development of language from phonic mimesis helps prescribe a border between human and animal. He writes: "No animal thinks, and no animal speaks, except man. Language and thought are inseparable. Words without thought are dead sounds; thoughts without words are nothing. To think is to speak low; to speak is to think aloud. The word is the thought incarnate" (1861, 369).

The idea that thought and language are identical raises several problematics. To see these problematics in action, consider Shobal Vail Clevenger's critique of Müller's writings on the origin of language. Clevenger dismisses Müller's notion that thought and language are identical.

But Clevenger ultimately reproduces the idea that language represents an accurate reflection of the phenomenal world. For Clevenger, formal analysis of words can help us understand the origins of different races; we may gain insight into the "thoughts" of Paleozoic people by studying contemporary "savage" languages ("Those who have lived with savages, and are familiar with the puerility of their conceptions and their disposition to incessantly invent words and then forget them, are able to estimate gibberish at its proper value"; "The Australian savage language is exceedingly regular and simple, in keeping with its poverty of ideas. The Spanish language is probably the most beautiful, resonant, inflexible, of any of Latin descent" [1891, 953]). While Clevenger is determined to discredit the idea that language has a directly divine origin, he nevertheless preserves the notion that language offers direct access to the relative advancement of a given linguistic community. The potentially ethnocentric consequences of such absolute mimologics are made especially clear in one German nationalist's swift denigration of the use of multiple languages: "Multilingualism is the den of iniquity from which all the fogginess of books steams up."[67] The idea that there is an ideal state of language often comes hand-in-hand with the idea that a specific language adheres most closely to that ideal state.

Plato as Mimologist

Genette begins his account of historical mimologics with Plato's *Cratylus*, which represents the first recorded philosophy of phonetic symbolism in the Western cultural tradition (1995 [1976), 22). In *Cratylus*, the eponymous figure of Cratylus argues for a so-called "naturalist" basis for language, whereby the names of objects can be more or less natural or suitable to the things they reference. The Cratylian thesis is set against a so-called

[67] F. L. Jahn, 1810, quoted in Fraser 1978, 271.

"conventionalist" one, embodied by the figure of Hermogenes, who holds out for arbitrary connections between words and things. Hermogenes maintains that the fitness of words is established not by some essential connection between word and thing, but rather by their usage. The fitness of a word for its referent, then, is merely a matter of consensus among participants in a given linguistic community. Importantly, there is an essential sonic dimension to Plato's mimologics. Language is verbal, thus it is not surprising that mimological inquiries often turn to voice. Genette argues that at least since the writings of Plato, the matter of vocal imitation has served as the "active center" of mimological debate (1995 [1976], 53). Beginning with *Cratylus*, the study of words and their meanings tended toward matters of phonic symbolism (the use of sounds to represent things) and the ways that sounds carry meaning.

Why does it matter whether or how words are related to the phenomenal world? One reason it matters is because language's connections to its referents can be seen to reflect the accuracy of our grasp of reality. Furthermore, our conceptions of the nature and origins of language reflect our biases about what it means to communicate well. Given the assumption of natural connections between words and things, a mimologist might ask: Is there an ideal language to which we might aspire? Is there an ancient, originary language that has since been denatured? Where did language go wrong, and how can we make it go right?

The negative consequences of such questions are readily apparent in historical mimologics. For instance, early modern English grammarian John Wallis sought to establish the superiority of the English language by speculating about the suitability of certain sound syllables to their meanings, i.e., the natural violence of *thr* (as in "throw") or the retentive qualities of *cl*

(as in "cleave," "climb," or "close").[68] These idioms help to dramatize a classic mimological question: If a word can be well-made, are some words made poorly? And, are well-made words selected spontaneously or must one use a certain criteria, or make use of a certain technique? These questions are rhetorical, meant merely to jumpstart our thinking about the pursuit of language's origins. Myths about the origins of communication function twofold. First, they are stories about the history of humanity and what it means to be human. Second, they can serve as methodologies for assessing the correctness of language(s) in the present, for better or for worse.

Genette's reading of *Cratylus* establishes this text as the foundation of *mimologics*, the study of how words imitate the world. Although there is no evidence that Spencer read *Cratylus*, his mimetic theory of language origins is a contribution to the mimological tradition. We can gain insight into Spencer's place in this tradition by comparing his ideas to those of other mimologists. For instance, in the dispute between Cratylus and Hermogenes staged by Plato, Cratylus dispenses with the social dimension of language by tricking Hermogenes into admitting how confusing and inconvenient a conventionalist basis for language would be—everyone would go around naming things however they please. Cratylus is then able to argue for the *correctness* of names, and for the primacy of *the act of naming itself*. The act of naming involves shaping linguistic matter—sounds and syllables—into ideal forms. In order to assign proper names to things, a special kind of work is required—work that can only be completed by a skilled technician, a name-maker. The name itself therefore marks the technical nature of man's relation to things in the world; ironically, assigning something its most natural name is itself a technological act. For Spencer too there is a certain well-chosenness to certain words and

[68] Wallis 1672, 148-164. Cited in Genette 1995 (1976), 37-42; 345.

languages, specifically those that adhere closest to his own sense of what constitutes refined or stylish language.

Genette explains that the emphasis Socrates placed on the mythological figure of the *name-maker* sets the Cratylian naturalist thesis apart from its closest relatives. Some naturalist theses of language origins help to establish an ideal form of language that is altered over the course of history. For Socrates (counter-Cratylus *and* Hermogenes), badly chosen or badly formed words are the fault of the name-maker's original error. Socrates' sense that a word can be poorly chosen or "wrong" for what it signifies is slightly to the side of the arguments presented by Cratylus and Hermogenes. Cratylus believes all language imitates the world and is therefore "right"; the Cratylian name-maker is infallible, while the Socratic name-maker is not. For Hermogenes, language is conventional and all linguistic uses are right, even when they inevitably shift over time; each one of us is therefore a name-maker.

These distinctions have important consequences in the domain of sound. Socrates insists that the units of linguistic meaning are sounds and syllables. For Cratylus, the name-maker is infallible, able to select the correct sound without error. And yet, as Genette cleverly points out, Socrates' admission of the name-maker's potential for (in)accuracy is what discloses his allegiance to the "truth" of phonic expressiveness. The idea that the name-maker *might have made a mistake* discloses the centrality of the sonic dimension of the thing to be named, in that it admits that the name-maker may apprehend, correctly or incorrectly, how the word *should* sound. By admitting that language comes up short when the name-maker errs, Socrates admits his faith in an ideal language undergirded by phonic mimesis.

The Socratic mimological position differs from a pure Cratylian position in that it rejects in advance the idea of an original natural language that has since been corrupted or forgotten.

Any problems with language in the present, according to Socrates, are congenital. The name-maker is to blame. This position leaves open the possibility of constructing a new natural language without error. For comparison's sake, consider another famous Cratylian thesis, advanced by the philosopher Gottfried W. Leibniz. "We cannot claim that signification springs from a merely arbitrary institution," Leibniz proclaims.[69] This is his response to John Locke, whose insistence that the usage of a given word does not reflect any "natural connexion" between word and thing but rather a "voluntary Imposition"[70] recalls Hermogenes' conventionalist thesis. For Leibniz, there must be a reason why one word is chosen over another.

Like Socrates, Leibniz tends toward the Cratylian pole, and he does so in three respects: 1) he holds that the relations between words and things are mimetic, 2) he invokes the idea of an originary "natural language," and 3) he argues for the primacy of phonic mimesis therein. For Leibniz, languages have

> a natural origin in the harmony between the sounds and the effects produced in the soul by the spectacle of things; and I am inclined to believe that this origin can be seen not only in the first natural language but still in the natural languages born later, in part from the first one, in part from the new usages acquired by mankind, scattered as it was over the surface of the globe. And to be sure, the imitation of nature is often unmistakable in onomatopoeia: thus, we say that frogs *croak*

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[69] Leibniz is cited and translated in Genette 1995 (1976), 44.

[70] The full passage: "*Words*… come to be made use of by Men, as *the Signs of* their *Ideas*; not by any natural connexion, that there is between particular articulate Sounds and certain *Ideas*, for then there would be but one language amongst all Men; but by a voluntary Imposition, whereby such a Word is made arbitrarily the Mark of such an *Idea*" (Locke 1975 [1689], 405; further discussed in Genette 43).

> (*coaxatio*) or we express the command to be silent by *st*, rapid movement by *r* (*cursus*), laughter by *hahaha*, and the cry of pain by *ouaie* (*vae* [ow!]).[71]

In essence, Leibniz claims that natural resonances between the sounds of words, on the one hand, and their referents, on the other, is secured by a "harmony" felt in the soul. Leibniz rejects the hypothesis of a divine origin to language. Unlike Socrates, he envisions no master name-maker. Rather his invocation of natural languages (plural) implies a host of name-makers. "Natural languages were not created by convention, not founded as if by decree; they were born out of a sort of natural tendency of men to harmonize sounds with the affections and the movements of the soul."[72] He supports his quasi-Cratylian[73] thesis with classic mimological specimens: onomatopoeia (*hahaha!*), verbal imitations of animal cries (*croak*), and oblique symbolism (the letter *r*'s invocation of rapid movement). As we will see, Spencer settles things in favor of the Cratylian thesis, interpreted in a style similar to Leibniz, but replacing the Adamic origin story with an evolutionary one.

Spencer as Mimologist

Spencer claims that music arises from impassioned speech. On this point there has been some confusion. [74] For instance, in *George Eliot, Music and Victorian Culture*, Delia da Sousa Correa gets a minor point incorrectly regarding Spencer's ideas about emotion. In the broader

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[71] Leibniz is cited and translated in Genette 1995 (1976), 44.
[72] Translated by Genette and quoted in his *Mimologics* (p. 47), from Leibniz 1768, 187.
[73] Despite Cratylian affinities, Leibniz betrays his sympathies with Hermogenes' conventionalist thesis in his desire to invent a completely arbitrary language. See Genette 1995 (1976) for discussion, particularly pages 43-51.
[74] Delia da Sousa Correa calls Spencer's idea that music originates with impassioned speech "eccentric" (2002, 17).

frame of Correa's book, she reconstructs Spencer's theory of music in order to explain its influence on George Eliot, a close friend of Spencer's.[75] In Correa's reading, Spencer argues that language was at first "entirely conceptual" and therefore devoid of emotion.[76] This interpretation makes sense if one assumes at the outset that Spencer proposed a sharp distinction between emotion and cognition and aligned language strongly with the latter, as most of his contemporaries did. As I showed in Chapter 2, however, the unification of emotion and cognition is, for Spencer, a central feature of mental life among humans and animals alike. Indeed, he is unequivocal in his belief that language emerged from the same *emotive* forms of vocal exclamations found in animals, and that emotion is not something to be weeded out but cultivated.

The passage that Correa references is taken from Spencer's "Progress: Its Law and Cause." It is worth examining in detail:

> The lowest form of language is the exclamation, by which an entire idea is vaguely conveyed through a single sound; as among the lower animals. That human language ever consisted solely of exclamations, and so was strictly homogenous in respect of its parts of speech, we have no evidence. But that language can be traced down to a form in which nouns and verbs are its only elements, is an established fact. In the gradual multiplication of parts of speech out of these primary ones—in the differentiation of verbs into active and passive, of nouns into abstract and concrete—in the rise of distinctions of mood, tense,

[75] Eliot and Spencer regularly attended the opera together and exchanged philosophical musings on the matter of music for many years, with members of the Chapman circle. Eliot's longtime romantic attachment to Spencer (unreciprocated) is a source of fascination for scholars of both thinkers.

[76] Correa claims that for Spencer, "human language was at first entirely conceptual and only later became capable of emotional expression" (2002, 13).

> person, of number and case—in the formation of auxiliary verbs, of adjectives, adverbs, pronouns, prepositions, articles—in the divergence of those orders, genera, species, and varieties of parts of speech by which civilized races express minute modifications of meaning—we see a change from the homogenous to the heterogeneous. (1881 [1857], 238)

Here, Spencer recounts the gradual development of language from what he calls "exclamations," which are common to humans and animals alike. Spencer seems to be analogizing exclamations with nouns, in that each utterance conveys a single idea. He believes families of words can be traced to their shared root word(s) (he cites Max Müller, Bunsen, and "philologists"). For Spencer, "the progress of language conforms to the general law, alike in the evolution of languages, in the evolution of families of words, and in the evolution of parts of speech" (1881 [1857], 239).[77]

This implies a mimetic link between sound and phenomenal world. That mimetic link can take two forms: 1) imitation of things in the external world (i.e., animal cries), or 2) imitation of interior states (i.e., emotions). In *Principles of Psychology* (1855) Spencer offers the following description of the evolution of language:

> Wherever we can trace out the origin of symbols used to convey thoughts—whether it be in the infantine habit of naming animals by imitating their cries, or in that of senselessly repeating the articulate sounds made by persons around; whether it be in the signs spontaneously hit upon by deaf-mutes, or those by which travellers in strange lands express their wants; whether it be in the dramatic

[77] For Spencer, writing arises from the "habit" of representing things with images: "From the habitual use of this pictorial representation there naturally grew up the but slightly modified practice of picture-writing" (1881, 239).

> gestures with which the uncivilized man ekes out his imperfect vocabulary, or in the simulative words of which that vocabulary so largely consists—we see, not only that the notion of likeness underlies all language, but that the symbols of thought, both vocal and mechanical (and even literal also), are at first, merely *reproductions* of the things signified. (1855, 179)

Here Spencer suggests that linguistic symbols emerge through a process of imitation. Notice in particular that physical gesture comes in nearly the same breath; for Spencer, spoken symbols and gestural symbols find the same origins in mimesis. He describes the "uncivilized" human being's "imperfect vocabulary" as *simulative*, that is, an imitation of the appearance of things in the world.

Spencer contributes a number of interesting details to the history of mimetic theories. Like Socrates in Cratylus, Spencer believes the noun is the most important unit of language. Only nouns are fixed enough to maintain the mimetic relationship; verbs only work this way sometimes. Other parts of speech—adverbs, modifiers, etc.—are trickier. But he does not concern himself with explaining that mystifying leap from nominal to verbal constructions. Instead he gestures toward the proliferations of races and national languages and sums himself up: "Thus the progress of language conforms to the general law, alike in the evolution of languages, in the evolution of families of words, and in the evolution of parts of speech" (1881 [1857], 239). Later he suggests that linguistic advancement parallels the gradual separation and distinction of the arts (poetry, dancing, and music), as well as the separation of these arts from religion.

Similarly, in "The Origin and Function of Music" (1857) he makes a case for the mimetic nature of specific musical elements. For instance, with regard to musical pitch, he suggests that

"mental excitement vents itself in the higher and lower notes of the register; using the middle notes but seldom" (1857, 401). Here he suggests that middle notes do not betray strong emotion in the same way that higher or lower notes do; one wonders whether this implies that if one can manage to speak with a calm tone they are not as emotional, or if speaking in a calm tone is merely an effective tool for disguising strong emotion.

Does Spencer believe that primitive vocal exclamations call on a sense of individual preference of taste? Is there an aesthetics of originary vocal exclamations? Or a hermeneutics that factors into apprehensions of meaning therein? Can these vocalizations be considered beautiful? If yes, beautiful to whom? Again, Genette's reading of Cratylus is instructive. The eponymous figure sets out to defend the absolute mimological thesis through a series of etymologies. But upon discovering that the chain of meaning is infinite, with every word's meaning leading back to yet another word, the terrain of the argument shifts. No longer is this linguistic debate primarily concerned with the relation between words and things but rather between *sounds* and things, i.e., *phonic mimesis* (1995 [1976], 20). By Cratylian standards, "a name is vocal imitation of that which the vocal imitator names or imitates."[78] So, when we name something, we express a mimetic relation between name and thing.

Under Socratic-Cratylian logic, my own name "Miriam" should be an ideal vocal imitation of my essence. That is, unless my name is poorly chosen. If I were to choose my own name, what criteria should I follow? Should I choose my *favorite* name? Or a name that sounds beautiful to me? Or should I choose a name that seems to "suit" me? Is a properly-chosen name *a name that I love*? Or is it *a name that fits*? Are these the same thing? Am I suited to my own taste? By Cratylian standards, the name-maker's taste appears to be irrelevant. Because the

[78] Quoted and translated in Genette 1995 (1976), 21.

name-maker's aesthetic preferences are discussed only indirectly in Cratylus, and always subsumed beneath his authority as Name-Maker, I find little to guide my discussion of preference in Genette's account of Plato. Indeed, I see the matter of preference being one that is undertheorized in mimetic theories.

Spencer, however, has plenty to say on the subject. In "The Philosophy of Style" Spencer sets out to explain, in physio-psychological terms, why certain words and sentence structures are more effective than others. This he believes will aide in the construction of a more scientific account of style (1884 [1852], 9-11). His main point here is that style is expressed intuitively, as in the French saying "The Style is the Man"; put differently, "style is organic." But he believes style can be altered and improved—along with a writerly sense of clarity—through engagement with good writing. There is a certain mimetic character to this recommendation too—the symptoms of high quality writing can be contagious.

What are the consequences of Spencer's mimetic treatment of language and music? One way into the question is to ask exactly *how direct* the various mimetic relationships that he proposes actually are. For instance, when Spencer suggests that "a voluminous, mouth-filling epithet is, by its very size, suggestive of largeness or strength" (1884 [1852], 14), what exactly does he mean? Genette points to a distinction between *direct* and *indirect* motivations for derivative sounds. Direct motivations are classically mimetic, as in onomatopoetic imitation. Indirect motivations are etymological, as in the history of a word's usage and the word's derivations from other words and symbols. In *Cratylus*, the terms shift from indirect motivations to direct ones when the conversation turns to sound symbolism because sonic mimesis is understood to be a quintessentially direct form of mimesis. Spencer allies himself clearly with the argument for direct motivations in his recourse to the law of reflex action, which grounds

unmediated transmissions of emotion through voice. But at other times he tends toward indirect motivations, such as when he describes Saxon English as superior to other languages by virtue of its brevity, which he believes mimics the conciseness of thought in a metaphorical way (1884 [1852], 11-13).

Certain mimologists have tended to treat the origins of language as a lost linguistic paradise, degraded by centuries of culture. But Spencer believes the path to ideal forms of language and music is *forward*; progress is not just *desirable* but *inevitable*. On this point, he makes no concessions: "The current conception [of progress] is a teleological one" (1881 [1857], 233). Treating progress not just as desirable but inevitable, he finds evidence of progress in the musical choices of Western European composers and the word choices of Anglo-Saxon Englishmen. By elevating his own aesthetic preferences to the pinnacle of evolutionary advance, Spencer serves as a key example of the use of mimetic ideas to naturalize a given set of aesthetic ideals as biological truths.

How the voice expresses concepts, emotions, ideas, moods, or intentions is a puzzle that as yet remains unsolved. Plato inaugurated the question for Western philosophy in *Cratylus*. Ferdinand De Saussure famously argued against the idea of natural connections between signifier and signified when he theorized the arbitrariness of the sign (1959 [1916]). Twentieth-century American philosopher Suzanne Langer hypothesized that vocal acts were not "purposive" in their origins, but rather "autistic, spontaneous acts of self-enlargement" (1967, 122). Scientists and philosophers alike continue to debate whether words and music mimic the world. In recent music studies, theories of mimesis have offered significant contribution to our understandings of music perception (see Cox 2016 in particular). Spencer is an important figure in the history of

these ideas. His theory of music is rooted in the idea that language and music are closely connected, and that both find their origins in mimesis.

My next chapter offers a reflection on present-day evolutionary theories of music and the ways that they grapple with voice, emotion, and subjectivity. I will draw on my forays into historical mimologics to think about mimetic theories latent within recent music scholarship. I bring insights drawn from Spencer's ideas about emotion to bear on contemporary music evolutionism, as well as to the recent "turn" to voice in music studies. I pay special attention to Gary Tomlinson's account of music's evolutionary origins (2015, 2016, 2018), which has been called the "state of the art" of the field (van der Schyff and Schiavio 2017, 2).

CHAPTER FIVE

Mimologics in Contemporary Evolutionary Musicology

This chapter draws on lessons learned from Spencer's mimetic account of musical-linguistic origins in order to reflect on contemporary ideas about the evolution of vocal expression. Scholars associated with the "vocal turn" in music studies tend to speak about voice as something *in between*. The voice's force is often said to reside in its contingency and abstraction; its slippery relation to representation; and its role in the circulation of interstitial things like affect, identity, and difference: "*voice is nothing if not relational*, always situated at boundaries" (Feldman 2015, 658).[79] Theorists of evolution have long shared with musicologists this conception of voice as a mediator, something that muddies distinctions between nature and culture, human and animal, and language and music. From Herbert Spencer to Steven Pinker, the voice is a part of the puzzle of communication's origins, as well as of deep human history more broadly. In this chapter I explore recent music-evolutionary ideas about voice. Contemporary evolutionary musicology tends to fall into one of two methodological categories: empirical/scientific or critical/humanistic. I focus on Gary Tomlinson's account of musical origins, which represents a critical/humanistic music-evolutionary approach to the scholarly study of vocal expression.

It is worth remembering that evolutionary musicology was out of fashion until the late 1990s, on the grounds that it was too speculative, lacking systematicity (Kivy 1962, 328-329). The question of the evolution of vocal expression has long been approached with caution, even

[79] See also the summary of the field presented in Emily Dolan, "A Note from the Guest Editor," *Opera Quarterly* 33, no. 3–4 (2017): 203–206.

suspicion. Archaeological evidence can tell us only so much: we know, for instance, that 4 million years ago *Australopithecus* (an extinct genus of hominins) possessed vocal communication skills on par with great apes (Arcadi 2000). But there is no consensus regarding the timeline of vocal communication since the time the Homo line emerged, 2.5 million years ago.

This raises a crucial question: What can be gained by speculating about the origins of vocal expression without sufficient material evidence? There are plenty of historical reasons to avoid the subject. Writing at the turn of the 20th-century, American psychologist Smiley Blanton makes clear the risks of theorizing a direct connection between voice and emotion in his dogmatic insistence that "all people" recognize the ways that emotion affects vocal timbre—

> The effect of emotions upon the voice is recognized by all people. Even the most primitive can recognize the tones of love and fear and anger; and this knowledge is shared by the animals. The dog, the horse, and many other animals can understand the meaning of the human voice. The language of the tones is the oldest and most universal of all our means of communication. (1915, 154)

For Blanton, the expressiveness of voice is self-evident and universal. The voice communicates in an unmediated fashion, constituting a direct translation of thoughts to sounds. He takes this to mean that any intelligent being will be equipped to interpret the emotional meanings communicated by others without issue. The prejudiced undertones of Blanton's proclamation are made plain in the statement, "Even the most primitive can recognize…" Here the adverb "even" functions to register Blanton's surprise at the interpretive capacities of "primitive" beings. At the same time it erases the possibility of treating emotion as something that must be *read*, something

that commands an interpretation. Spencer's model of vocal communication gets us partway to a theory of vocality that admits the place of a hermeneutics of emotion. But he nevertheless remains focused on the ways that musical emotion affirms his own culturally specific interpretations of emotive meaning. By contrast, Gary Tomlinson's account of vocal communication offers a more nuanced theory of emotional communication, grounded in the vocal inflections of early humans.

A Million Years of Music

Tomlinson's *A Million Years of Music* (2015) does not offer (or purport to offer) anything new in the way of archaeological or paleontological discoveries. This book's method can be summarized as a consolidation and reinterpretation of available archaeological research on human evolution—or even a *close-reading*, in that Tomlinson's materials are archaeological but his methods are humanistic. His influences are philosophers and critical theorists like Bernard Stiegler, Jacques Derrida, Manuel de Landa, and Kim Sterelny, among others. He draws substantially on the thinking of French archaeologist and paleoanthropologist André Leroi-Gourhan, whose mid-century theory of human socio-cultural development anticipated the notions of bottom-up performativity, embodied cognition, and emergent complexity that later became popular in the humanities.[80]

Tomlinson's evolutionary theory begins by confronting the challenges of theorizing the origins of music from within academic music studies. Music scholars have long been suspicious

[80] See Leroi-Gourhan's *Gesture and Speech* (1993). Leroi-Gourhan's influence on radical strains of critical theory should be duly noted; indeed, his thinking influenced Deleuze and Guattari's *Capitalism and Schizophrenia* (1987 [1980]) and Jacques Derrida's *Of Grammatology* (1997 [1967]), including Derrida's most famous neologism, *différance.*

of evolutionary theories (see, for instance, Tolbert 2002). For Tomlinson too the stakes of evolutionary theories of music's origins are high, depending as they do on ideas about the foundations of human communication and the place and function of music in human expression. Consider Tomlinson's response to a central question within evolutionary musicology: Does music play an active role in human evolution or is it a cultural invention without adaptive function? To say that music *does* play an active role in human evolution is to align with the adaptationist tradition, which seeks to explain the ways music helps humans to survive and reproduce, or is otherwise biologically essential to modern human nature. Nonadaptationism, on the other hand, sees music as superfluous, unnecessary for survival, even decadent; in Steven Pinker's words, music is mere "auditory cheesecake" (1997, 534).

Tomlinson rejects both positions. His approach eschews notions that music evolved strictly as a biological or a cultural phenomenon. Rather, his "biocultural" approach treats music as an emergent property of embodied interactions with an ever-changing socio-material environment. Drawing on recent evolutionary biology he demonstrates that the question "is music essential to the human?" is deeply reductive, both in its conception of music and in its conception of human evolution. For Tomlinson, musical behaviors are neither biological (comprised of a particular arrangement of matter) nor transcendental (something presupposed or *a priori*).

For Tomlinson, the story of music's origins cannot simply be the story of music. It is rather the story of the hominin line's acquisition of the basic cognitive competencies that define both human modernity and modern musicality: mimesis, joint attention, entrainment, and recursive mindreading (2015, 15-22). Although Tomlinson structures his book as a historical narrative, one of his central theses is that these cognitive competencies did not develop

teleologically or even linearly. Partially relying on dynamic systems theory, Tomlinson tracks the gradual, incremental, and nonlinear materialization of hominin cognition and its aggregation with patterns of sociality and communication, out of which modern music and language "fell out, as belated emergences" (Ibid., 12). Tomlinson's account is anti-teleological and is inspired in part by Darwin's own model of evolutionary contingency: the sense that biocultural life moves without plan, has no end game, no cosmic ambition, no finale. Tomlinson addresses what is Darwinian about his account explicitly. Differently than an "overly simple model of Darwinian variation and selection" Tomlinson adopts a Darwinian account of "selection-with-variation" but without a "narrowly adaptationist vantage" (Ibid., 14). The core of Tomlinson's alternate coevolutionary account is, in his words, "post-neo-Darwinian" (Ibid., 14).

Tomlinson sets the scene long before the known origins of music, with the improbable invention of Acheulean bifaces—prehistoric stone implements flaked on both sides. The process of creating and using these simple tools is bound up with rudimentary vocal and gestural communication, which he terms "gesture-calls." Gesture-calls are spontaneous vocalizations produced alongside "emotion" and "intention" (Ibid., 106–112). Gesture-calls developed prior to recognizable agency, which means they relied on co-present, face-to-face interactions. Tomlinson's conception of the nonagential invention of Acheulean bifaces, and the role of nonagential vocalic and gestural communication in that process of invention, implies what he refers to as "technosociality."

Technosociality is the crucial binding of technological and social dimensions of life. It is the idea that technology is shaped by a matrix of social interactions, which are in turn shaped by technology. The importance of this concept cannot be overstated; technosociality serves as the horizon of ancient hominin existence, at least in the earliest stages of Tomlinson's account. The

philosopher Bernard Stiegler—an important influence on Tomlinson—encapsulates the concept of technosociality not as a thesis statement but as a pair of thesis questions:

1) Who or what does the inventing?
2) Who or what is invented?[81]

For Stiegler (and for Tomlinson) this launches a Derridean line of inquiry about the material transmission of information and the emergence of the inscribed sign (the *grammè*). I will say more about Tomlinson's Derridean detour in a moment.

Tomlinson holds that the origins of music are twofold: "Musicking was always technological" and "Musicking was always social" (Ibid., 48).[82] He begins his account a million years ago, long before the emergence of music or language. He focuses his analytical efforts on the flaked stone implements (Acheulean bifaces) discovered in the French town of Saint-Acheul. He describes the social and mental actions that might have facilitated their manufacture. Following pioneering archeologists like Clive Gamble, Ian Davison, and William Noble, Tomlinson argues that at the time of these tools' invention, *a recognizable human agency was absent*. This implies that early hominins created sophisticated tools "without planning to do so" (Ibid., 51). Instead they used "gestural sequences" absent of reference, implication, or logical form:

> These gestural sequences should not be thought of as a semantics of toolmaking. This would be to distinguish in anachronistic fashion an action from its conceptualized implications. The operational sequences carried no implications or

[81] These questions are from Stiegler's chapter "Who? What? The Invention of the Human," an important source for Tomlinson (Stiegler 1998 [1994], 134–79.
[82] Tomlinson uses the term "musicking" to signal treatment of music as a dynamic process rather than a static object. The gerund was coined by Christopher Small in his book *Musicking* (1998).

> abstractable concepts and were nothing more than patterns of movement and registers of difference for the hominins that witnessed and performed them. They eventuated in stone tools, but they did not signal or forecast them; *they generated cognition more than being generated by it, we might almost say*. Their transmission was founded on a kind of agency that emerged not from ideation but from the play of intersecting contexts of actions—even coupled contexts of action, as we shall see—that together formed the taskscape. (Ibid., 71, emphasis added)

In other words, stone tools were not the products of mental plans or templates.[83] Rather, they emerged from the imbrication of available materials, on the one hand, and patterns of sociality, on the other. And—most importantly—they influenced the hands and minds of the beings that facilitated their creation. In Acheulean toolmaking we discover our ancient hominin ancestors shaping and being shaped by the "rhythms of their *techne*" (Ibid., 87).

In speculating about the connection between matter and sociality, Tomlinson makes use of Leroi-Gourhan's notion of the *chaîne opératoire* (operational chain). The *chaîne opératoire* is a "succession of gestures" where social and environmental dimensions of life formed an aggregate; "from their meeting a stone tool emerged" (Ibid., 63). Take note of the choice of language: "a stone tool emerged." The passive voice is a feature of *A Million Years of Music*, and

[83] Tomlinson's position represents a new wave of thought about the origin and function of stone tools. Compare his position to that of Daniel Levitin, articulated just a few years earlier: "…tool *making* as opposed to mere tool *use* (which crows and monkeys do) represented a major cognitive leap: It required a type of thought not before seen in any other species. These stone tools were the first implements that conformed to a 'mental template,' an *idea* in the mind of the beholder that existed prior to the completing of the tool. Stone tools are thus the first evidence we have of the birth of *symbolic thought*, a qualitative change in ability, one that distinguishes humans from other species and makes possible art and music" (2008, 251). The difference here is largely attributable to the time scale of analysis. For Tomlinson, who considers the appearance of stone tools as far back as 500,000 years ago, the onset of symbolic thought happens far after the invention of those tools.

the means by which Tomlinson stylizes the non-teleological play of ancient hominin technosociality. Furthermore, it serves to de-emphasize symbolic cognition. With Leroi-Gourhan, Tomlinson imagines a means of manufacture "without planning, foresight, or mental image of the product to come" (Ibid., 86). Tomlinson links this idea to Derrida, whose own use of Leroi-Gourhan's ideas led him to argue that the *grammè* appears beyond "intentional consciousness" (Ibid., 64).[84] This Derridean response to Leroi-Gourhan discovers the emergence of the inscribed sign without recognizable agency (Ibid., 86). In its place is what Tomlinson terms an "earliest poiesis" that relies on "no mode of abstraction, no cognitive distance, no knowing craftsman; it was poiesis from the bottom up" (Ibid., 87).

Tomlinson follows Bernard Stiegler in drawing on Leroi-Gourhan's "universal technical tendency" to theorize the coevolution of technological development (*technogenesis*), on the one hand, and biological and social developments (*anthropogenesis*), on the other. However, Tomlinson criticizes Stiegler for using his discussion of the integration of technological being and bio-social being to "turn from Derridean possibilities beyond 'intentional consciousness'… back to a Heideggerian model in which technology as *poiesis* is founded in an anticipation or foresight arising with the temporality of *Dasein*" (Ibid., 86). Let me unpack some of these Heideggerian references.

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[84] For Stiegler, Leroi-Gourhan's anthropology is essentially nonanthropocentric. He sees this as what attracted Derrida to Leroi-Gourhan, and why it grounded Derrida's thinking about the gramme, the inscribed sign. "From Leroi-Gourhan, in other words, Derrida leapt directly to his grammatological arche-writing" (Tomlinson 2015, 64). Stiegler describes the gramme as "older" than "specifically human forms" of writing (Ibid., 137). Ben Roberts describes the role that *différance* plays in Stiegler's *Technics and Time* like this: "as soon as there is anything like epiphylogenesis—i.e., culture—there is a *différance*, that is, a differing deferral without origin" (2005, paragraph 12).

In Martin Heidegger's essay "The Question Concerning Technology" (1977), technological things—machines, but also, more disturbingly, nature and animals—are not automatically autonomous tools. Machines must be "instrumentalized"; their potential must be "revealed" (1977, 13-17). Technological things can thus be asked to "stand by" until they are needed—this is one way of summarizing Heidegger's concept of the "standing-reserve" (Ibid., 17). The human, as a technological thing, has a special relation to the concept of standing-reserve: "[P]recisely because man is challenged more originally than are the energies of nature, i.e., into the process of ordering, he never is transformed into mere standing-reserve. Since man drives technology forward, he takes part in ordering as a way of revealing" (Ibid., 18).

Tomlinson disagrees. First, the human is not afforded special treatment with regard to its imbrication with the material dimensions of nature. Rather, the human is continuous with nature. All the same rules apply. Second, the human does not drive technology forward. Rather, the human drives *and is driven by* encounters with things that are not itself, technology included. Both of these points complicate Heidegger's claim that the human is never fully transformed into standing-reserve. In explicating the essence of technology, he urged readers to perceive technology's latent threat, worrying that nature and human beings were increasingly conceived *as* technological, that is, as raw materials fit to be instrumentalized. What is most relevant to my discussion of Tomlinson and Stiegler is the fact that Heidegger here discloses two technological eras: a modern, industrial technological era (roughly the late-eighteenth century onward) and an older, pre-modern one.

Tomlinson proposes a technological era prior to the two imagined by Heidegger, an era defined by "pre-sapient, primordial, nonhuman *Dasein*" (Ibid., 88). This is what yields the "Acheulean possibilities" (i.e., poiesis, entrained operational sequences, mimetic traditions) that

emerged in the absence of recognizable human consciousness, representation, or rational planning. Stiegler's figuration of early hominin cognition strikes Tomlinson as too agential, too close to the notion of *Dasein,* and therefore too modern. Stiegler's early hominin already possesses the tools of rational planning—mental blueprints and the like—whose existence Tomlinson denies at this stage. In opposition to Stiegler, he seeks to ponder the "nearly imponderable" idea of an early hominin technological tradition "that knows little self-possession and no gathering-together-in-advance, that results in products but does not thereby realize a future" (Ibid., 87).

A New Evolutionary Theory of Voice

Tomlinson's model of Acheulean life incorporates a rudimentary mode of communication. "Gesture-calls" are what he calls basic physical and vocalic means of communicating emotion and intent. Like tool-making, voice-making was a technosocial phenomenon: "[voice] was a construction" (Ibid., 89). Closely related to gesture-calls is "protodiscourse": "the negotiation of intersubjectivity through vocalization and gesture but without language" (Ibid., 17). Protodiscourse[85] is a fraught area of research, and Tomlinson's thinking is unique for its de-emphasis on lexical language. He explicitly critiques a scientific tradition that positions language's presumed logic and clarity as the key to, if not the *telos* of, human modernity.[86] A key motivation behind *A Million Years of Music* is the need for a broader

[85] The term was coined by Jill Bowie (2008) to describe sequenced communicative behaviors. See also Bickerington 1990.

[86] For Tomlinson, "questions of the nature of protolanguage have too often been limited by a unilateral teleology. They have tended to look back from the single vantage of modern language … they have reflected the emphases of post-Chomskyan linguistics and the disciplinary

approach to early-hominin vocalization than the "post-Chomskyan generative-grammar linguocentrism," or "syntactocentrism" (Ibid., 106) that dominates thought about the origins of human communication. Tomlinson's account tracks a parallel trajectory for music and language and unseats language from its place of conceptual privilege, with the audacious goal of securing music's role in the emergence of human modernity. But even as he skillfully navigates away from a linguocentric model of protodiscourse, he does not offer a music-centric model in its place. He warns that fantasies of a "protomusic"—like fantasies of a "protolanguage"—lead to "fruitless teleology" of the sort presumed by Vico, Rousseau, or Darwin (Ibid., 91).

Voice is an important feature of Tomlinson's approach to the music-language relationship, and his approach to it yields a distinct understanding of subjectivity. He simultaneously rejects linguocentrism and troubles a notion of intentional consciousness within ancient vocal communication. By doing so, *A Million Years of Music* serves as a response to Derridean ideas about voice and presence, as articulated in Derrida's critique of Husserl's theory of the subject. For Husserl, subjectivity is animated by the act of silently speaking to oneself. In Derrida's formulation, Husserl proposes a compulsory connection between voice and *logos* to justify a sense of self-presence that Derrida would in turn deconstruct.

Musicologists have noted the challenge of turning to the voice without also returning to the metaphysics of presence—Brian Kane dubs this the vocal turn's "Derridean impasse" (2015, 672). Husserl's vision of a high-fidelity voice-to-ear circuit yields an autonomous and integral subject, known fully to itself, by itself. Derrida critiques Husserl's idealization of the voice and his assertion of the unity of thought and voice within *logos*, arguing that the "privilege of being

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allegiances of those who have stepped into the protolanguage arena, mostly linguistics and language cognitivists" (2015, 90).

cannot resist the deconstruction of the word" (Derrida 2011 [1967], 64). In other words, when the subject speaks, it still hears itself as if it were other. There is a self/other division contained within the subject's voicing and auditing of itself. And within that self/other division, deconstruction begins.

Tomlinson's evolutionary theory of voice avoids the Derridean impasse (through which the voice risks becoming a faulty guarantor of subjectivity) in two ways:

1. It refuses to reduce voice to *logos.*
2. It does not fasten the voice to presence. Furthermore, it does not rely on familiar strategies for avoiding the metaphysics of presence, such as figuring the voice as an index of material uniqueness, as thinkers like Adriana Cavarero do, or figuring voice as a failure to guarantee presence, as in the Lacanian tradition (see Cavarero 2005 and Dolar 2006).

Though Tomlinson does not explicitly describe his project as a response to Derrida, he employs Derridean resources to point beyond the capacity of intentional consciousness for ancient technological activity and to imagine an ancient poiesis with "no mode of abstraction, no cognitive distance, no knowing craftsman" (2015, 88). This "accidental poiesis" stands outside Heidegger's figuration of two technological eras, and apart from metaphysics as such. Tomlinson moves toward "the original and non-empirical space of nonfoundation" described by Derrida as the undercurrent beneath presence, that is, "the irreducible emptiness from which the security of presence in the metaphysical form of ideality is decided and from which this security removes itself" (2011 [1967], 6).

To summarize: Tomlinson's strategy is similar to a Lacanian one in that he assumes the voice was never a site of presence. But he differs in that he does not objectify the voice as a kind

of gap or lack. Rather, Tomlinson's evolutionary voice is a technosocial phenomenon, one that functions to test environmental and social affordances in the absence of recognizable agency. In this sense, the voice is an expression of the "universal technical tendency," a techno-logic that invents and is invented by the vocalizing body's contact with its material surroundings.

Musicologists have already begun to put Tomlinson's thinking to work. Carolyn Abbate, for instance, makes use of Tomlinson's figuration of technosociality to conceive of musical instruments as prostheses, that is, as *things* not merely "put to use" but as *agents* who actively shape the cognition and corporeality of their "users." For Abbate, musical instruments are users too (2016, 804). But Tomlinson actually goes further than Abbate:

> [T]his early hominin voice was not merely an innate one, elicited by external stimuli in preprogrammed ways and involving little voluntary control and social complexity. Instead, it had already begun to shift along the biosocial spectrum toward modest voluntary control and social complexity. It was a construction molded … by encounters with others amid the materials, dangers, and rewards of the environment (2015, 89).

In other words, the early hominin voice *is itself a kind of prosthesis*. By Tomlinson's account, "tools functioned as material extensions of the body" (Ibid., 82). Early communicative modes (gesture-calls) conveyed emotion and intention:

> Gesture-calls are a communicative mode of copresence and immediacy, eloquent and emotive in the kind of face-to-face expressions and responses that dominated interactions on Lower Paleolithic taskscapes. …As the situations in which the calls were deployed grew more intricate, fostering a more richly contextualized

> deictic deployment of them, their emotional and intentional messages must have gained precision and carried new informational payloads. (Ibid., 111–12)

While Tomlinson's thinking is evocative for figuring emotion and embodiment as foundations of communicative praxis, he does not explain in detail why things like gesture-calls and protodiscourse are automatically emotive—they simply are taken to be. By treating emotion as central to gesture-calls and protodiscourse (and to technosociality more broadly), Tomlinson suggests a rich area for further research. To put this in mimological terms, he theorizes a natural connection between vocal sound and emotion/intent, but does not clarify the terms of that connection. To be clear, this is not a problem, more of a philosophical opening.

In *Feeling in Theory,* Terada deconstructs the link between emotion and subjectivity and exposes the ideological power given to emotion as "proof of the human subject"; "we would have no emotion if we were subjects," she provocatively claims (2001, 4). But conceptualizing emotion after the death of the subject can only get us partway toward emotion *before the subject's birth.* Terada, for instance, insists that "emotion *requires* the death of the subject" (Ibid., 4). Obviously, this will not hold for a pre-human theory of emotion, in the vein of Tomlinson (or Spencer, for that matter). Nevertheless, it can raise questions for these theorists to grapple with: How does voice emote without agency? To whom is the voice recognizably emotive? What effects do nonsubjective emotions have? What types of emotions are (mis)conveyed through voice? Who does the interpreting and does this not constitute a hermeneutic circle that routes us back to the problem of agency?

While Tomlinson's implied link between voice and emotion sans subjectivity is relatively unique in today's scholarly terrain. And it has interesting resonances with arguments proffered

by nineteenth-century theorists of music's origins. Consider again Spencer's sense that music is grounded in an axiom of physiology known as "reflex action," that is, the direct connection between emotion and movement:

> All music is originally vocal. All vocal sounds are produced by the agency of certain muscles. These muscles, in common with those of the body at large, are excited to contraction by pleasurable and painful feelings. And therefore it is that feelings demonstrate themselves in sounds as well as in movements. (1857, 397)

Here vocalized feelings are automated muscular contractions requiring no special sort of mind. Darwin, an admirer of Spencer's ideas about music, used them to traced the origins of music to the sonic behaviors of animals, for whom strong feelings are accompanied by "involuntary" and "purposeless" muscular contractions, which result in sound emissions (Darwin 1872, 83-84). Recall from earlier in this dissertation that Darwin inadvertently posits a dialectical flow between instinct and enculturated ability. For instance, a creature in pain may scream involuntarily but discovering that the scream provides relief may prompt it to scream more (Ibid., 85). For Darwin this dialectical flow between instinct and enculturated ability clarifies how voice can begin to "shift along the biosocial spectrum toward modest voluntary control and social complexity"—to borrow language from Tomlinson (2015, 89). It also hints at how voice functions as both an *expression* of emotion and a *stimulus* to emotion. Tomlinson, however, does not get caught up in a music-philosophical debate about whether emotion is coming from the subject or the musical object. Rather, he imagines how music might have emerged without subjectivity altogether. This implies an unprecedented rethinking of the adaptationist/nonadaptationist question, no longer "Is music essential to the human?" but rather, "Is the human essential to music?"

Evolutionary musicologists are well aware that the archaeological record carries no material trace of ancient vocal music or percussive use of the body. Thus, there can be no proof of music's evolution in a strong sense. As put by Henkjan Honing, et al., "For the moment, at least, definitive conclusions about the prehistory and origins of music cannot be formulated" (2015, 2). But for Tomlinson, speculation about the origins of music is about more than music—it is about understanding our socio-biological circumstances, through which music is an emergent property, and it is about the importance of humanism within scientific inquiry. Further, it is about the birth of "what we call" the human (Derrida, 2009). For Stiegler, following Derrida, we must interrogate the birth of the human because we have "unceasingly… questioned its end" (Stiegler 1998 [1994], 135). The question of ends leaks into the margins of Tomlinson's thought too:

> The cosmos may be destined to wind down to a point of maximum entropy and to an unarticulated dispersion of matter/energy. It seems probable, however, that the systems and histories that are maintaining it far from that point across billions of years cannot all be explained by linear thermodynamics alone. The *systems* that present the brightest evidence of this are living ones, the *histories* evolutionary and—at a late, incandescent moment—cultural ones. (2015, 298)

Tomlinson thus imagines the inevitable end of the cosmos delayed by systems of culture. At this moment—Tomlinson at his most apocalyptic—he raises the banner of humanism; indeed, he hopes readers of his book will find "humanism redeemed" (Ibid., 347). At a million years' end, even as he dismantles the place of the human at the center of musicking, Tomlinson evinces a wistful commitment to the same cultural traditions whose subjectivity he has just evacuated.

There remains, then, only the call and response of interlocking systems, a “voice” that emanates not from someone or something but from everywhere.

CHAPTER SIX

The Darwinian Musical Hypothesis

Consider an empirical study published in the British Royal Society's flagship biological research journal, entitled "Menstrual cycle phase alters women's sexual preference for composers of more complex music" (Charlton 2014). This study sets out to test the Darwinian idea that music plays a role in sexual selection. The protocol is as follows: Women participants (n = 1465) began by recording the dates of their most recent menstrual cycle. Next, they listened to pairs of short melodies and indicated which sounded more "complex." In a second experiment, participants again listened to pairs of melodies but this time were asked to indicate which composer they would like to have for (a) a "short-term sexual partner," or (b) a "long-term partner in a committed relationship" (2014, 2). Based on their responses, the study concludes that women "have sexual preferences for composers of more complex music during peak conception times, but not outside this time," which is said to imply that women are attracted to indicators of genetic quality in potential sex partners during the most fertile time of the month (Ibid., 4). Because the data appears to show that genetic benefits are signaled by the sound of complex melodies, the author claims to confirm Darwin's suggestion that music plays an evolutionary role in mate selection and sexual reproduction.

This study has many problems, from its failure to adhere to any of the usual standards of evidence in evolutionary research; to its reductive treatments of gender, sex, creativity, and attraction; to its sketchy ideas about "good genes"—problems fortified by the author's overly literal reading of Darwin on music. In texts like *The Descent of Man* (1871) and *The Expression of the Emotions in Man and Animals* (1872), Darwin claimed that music played a primeval role

in mate selection and procreation. Having observed that certain animals cry out to one another during mating season, and having extrapolated such behaviors to early humans, Darwin postulated a pre-linguistic origin and an erotic function for music. In the vocabulary of present-day evolutionary musicology, Darwin offered the first "adaptationist" account of music by arguing that music had an adaptive role in the survival and flourishing of the species.[87] The above study ("Menstrual cycle phase…") is a particularly extreme interpretation of Darwin's original hypothesis. Having extracted from Darwin an aggressively mechanical relationship between music and sexuality, where music serves as a kind of primal machine for churning out DNA and where "complexity" is the mark of fitness (i.e., sexual attractiveness to women), "Menstrual cycle phase" leverages its participants' aesthetic preferences as evidence of an evolutionary scale of biological causality.

This study is not unique. Scholars have returned to Darwin's claim that music plays a role in sexual selection—what I call the *Darwinian musical hypothesis*—numerous times. Consider a second example. In an essay entitled "Evolution of Human Music Through Sexual Selection" (2000), evolutionary psychologist Geoffrey Miller suggested that Jimi Hendrix's promiscuous lifestyle evidences the "Darwinian" view that "music evolved as sexually selected courtship displays":

> [Hendrix had] sexual liaisons with hundreds of groupies… and fathered at least three children in the United States, Germany, and Sweden. Under ancestral conditions before birth control, he would have fathered many more. Hendrix's genes for musical talent probably doubled their frequency in a single generation through the power of attracting opposite-sex admirers. As Darwin realized,

[87] See Patel 2010 for discussion, particularly p. 98.

> music's aesthetic and emotional power… points to a sexual selection origin where too much is never enough. Our ancestral hominid-Hendrixes could never say, 'OK, our music's good enough, we can stop now,' because they were competing with all the hominid-Eric Claptons, hominid-Jerry Garcias, and hominid-John Lennons (2000, 331).

In this passage, Miller equates modern-day celebrity culture with the foundations of music, while shoring up an outdated notion that virile masculine artistry is preordained by biology as an expression of instinct and nature. Despite its logical fallacies, his essay continues to be cited favorably. Google Scholar indicates that it has been cited 430 times as of March 11, 2019. The exact passage quoted above is cited as positive evidence in trade books like Robert C. Brooks' *Sex, Genes & Rock 'n' Roll: How Evolution Has Shaped the Modern World* (2011, 271) and David Williams' *The Trickster Brain: Neuroscience, Evolution, and Narrative* (2012, 83-84).[88]

In this chapter I contend that the task is not to ignore biology, nor to make shallow observations about modern music based on romanticizations of evolutionary research,[89] nor to conduct ahistorical positivist studies of crude linkages between ovulation and musical complexity. Rather we should engage the Darwinian musical hypothesis critically and historically, with an eye toward disrupting and intervening in these questions as they occur in the present. Returning to Darwin's writings on music will enable us to clarify what he really said about the origins and functions of music. To that end, I offer a re-reading of Darwin's ideas that

[88] Miller himself has also published several books about evolutionary aesthetics. I choose not to discuss, cite, or otherwise signal-boost these texts.

[89] See also the movement known as Literary Darwinism. Jonathan Kramnick offers helpful critiques of Literary Darwinism in two articles for *Critical Inquiry* (2011, 2012).

highlights what is interesting about what he has to say about music, as well as why he is not the most useful authority on the subject.

I also speculate about why the Darwinian musical hypothesis is newly interesting to researchers. My sense is that Darwin's ideas about music's inherent ties to sexual selection are newly persuasive because they appear to explain the usefulness of apparently useless traits. This helps to reinforce a utilitarian affordance for music. Wanting to avoid the utilitarianism that haunts "strict" readings of the Darwiniain musical hypothesis (*a la* Charlton or Miller), I gesture toward less literal interpretations of Darwin's ideas about music. This work sets the stage for the chapter that follows (Chapter 7: Music as Sex), in which I develop an alternative approach to the Darwinian musical hypothesis that emphasizes Darwin's imaginative analogy between musical sensations and sexual ones, rather than his adaptationism.

What is the Darwinian Musical Hypothesis?

When Darwin noted the musicality of certain natural sounds—tuneful chirps of birds, harmonious thrums of insects, melodic squeaks of mice—he meant to explain the ways that sonic expressions help to coordinate the social lives of animals. Music was never his primary focus.[90] He even admitted to his daughter, Henrietta, that he regretted the need to engage with the subject of music. It is possible that this perceived imperative was a result of Spencer's centralization of music in his own account of evolution. Because Darwin engaged closely with Spencer's work, often incorporating its principles directly into his own account of human evolution, he took up many of Spencer's favorite topics, music included.

[90] See my Chapter 2 for discussion of Darwin's hesitations about discussing music.

Despite Darwin's hesitations, he nevertheless offered a tentative theory of musical origins across several texts, mainly *The Descent of Man* (1871) and *The Expression of the Emotions in Man and Animals* (1872). In *Descent,* Darwin writes: "Although the sounds emitted by animals of all kinds serve many purposes, a strong case can be made out, that the vocal organs were primarily used and perfected in relation to the propagation of the species" (1871, vol. 2, 330). Here Darwin is not just theorizing about vocal sound but also about emotion. When contemporary musicians and impassioned speakers arouse their audience member's emotions, Darwin suggests, they use "the same means by which, at an extremely remote period, [their] half-human ancestors aroused each other's ardent passions" (vol. 2, 337). In other words, music taps into an ancient affective wellspring born of a basic biological equivalence between humans and animals. Thus, for Darwin, music has the power to evoke memories of a primal emotionality. As we shall see, proponents of the Darwinian musical hypothesis are drawn just as often to Darwin's account of musical feeling as they are to his account of music's erotic utility—they are invested in a link between music and erotic feeling as well as a shared natural origin for music.

For Darwin, sonorous utterances are audible manifestations of pleasurable and painful feelings. This idea he gleaned from Herbert Spencer. Differently from Spencer, however, Darwin conceives the sonic cries of animals as constitutive of an unconscious proto-language that draws on the instinctual urge for social conquest and domination, while Spencer maintains that music evolves from impassioned speech (1857). Darwin's ideas about music can be summarized in three theses:

1) Music is an evolutionary precursor to language.
2) Music is inherently tied to pre-linguistic forms of communication, including gestural communication.

3) Music served early humans as a tool for organizing their social scenes, and for the more specific goal of attracting and seducing opposite sex mates.

Vocal song has a special place in Darwin's thought, specifically in his discussions of how early humans and certain animal species conducted their interpersonal affairs. For Darwin, music long served as a site of erotic courtship and romantic affection; thus, "musical tones became firmly associated with some of the strongest passions an animal is capable of feeling" (vol. 2, 336, fn. 33). For Darwin, the "musicality" of proverbially primitive sonic expressions serves as evidence of music's primal role in sexual selection. Music is particularly well-suited to scenes of amorous delight because music "affects every emotion, but does not by itself excite in us the more terrible emotions of horror, rage, &c." Darwin gives this description of music's affective capacity: "[Music] awakens the gentler feelings of tenderness and love, which readily pass into devotion. It likewise stirs up in us the sensation of triumph and the glorious ardour for war. These powerful and mingled feelings may well give rise to the sense of sublimity" (1871, vol. 2, 335). Music's emotive force is sublime, loving, possessive, triumphant, as well as violent and belligerent. Vocal expression is an expressive dimension of social life, and a way of marking and protecting territory. What he calls the "sublime" in music is a concoction of sweetness and obsession, glory and brutality, delicacy and control.

Given Darwin's hesitations about music—his frustration with the need to mention music in the first place, his sense that readers would blush at the idea of a sexual character for music,[91] and his later ambivalence about the adaptive power of sonic expressions—it is not surprising that

[91] In Edmund Gurney's Darwinian music theory, he too worries that his reader will find the sexual selection hypothesis to be "derogatory to Music" and carefully explains why it should not be seen as such (1880, 121).

his ideas did not take a strong hold in the popular imagination during his time.[92] He seemed aware that his ideas would be a hard pill to swallow for the average reader. Perhaps this is why his theory of music remained speculative and incomplete. Darwin never gathered his musical insights into a confident statement on the subject. Instead, his theory of music appears in pieces across a number of different texts. He mentions music in early essays and notebooks, suggesting lifelong interest in the subject.[93] Several times he invokes the experience of "backbone shivers" while listening to music—for him, the "intense pleasure" that music brings in these moments is felt in the body as much as it is heard. Late in life, however, he laments the "atrophy" of his musical sensibilities—his mind had become too occupied with scientific matters, transformed into a "machine for grinding general natural laws out of large collections of facts."[94]

The bulk of his scientific theses about music are found in *The Descent of Man* (1871, 1874) and *The Expressions of the Emotions in Man and Animals* (1872). Below is a representative passage:

> [M]usical tones and rhythms were used by the half-human progenitors of man, during the season of courtship, when animals of all kinds are excited by the strongest passions. In this case, from the deeply-laid principle of inherited associations, musical tones in this case would be likely to excite in us, in a vague and indefinite manner, the strong emotions of a long-past age… The impassioned orator, bard, or musician, when with his varied tones and cadences he excites the strongest emotions in his hearers, little suspects that he uses the same means by

[92] For discussion, see Bennett Zon's work, especially "The 'Non-Darwinian' Revolution and the Great Chain of Musical Being" (2014b) and *Evolution and Victorian Musical Culture* (2017).
[93] In "Darwin and the Arts" (2013), Gillian Beer argues that these early discussions of visual art, literature, and music played a role in his later works. See also Beer 2000.
[94] These remarks are taken from Darwin's autobiography, which are cited and discussed in Beer 2013, 90-91.

> which his half-human ancestors long ago aroused each other's ardent passions, during their courtship and rivalry. (1871, vol. 2, 336-337)

In Darwin's formulation, the early ancestors of humans used proverbially musical sounds for the purpose of charming potential mates. By locating music's purpose in general principles of animalistic sociality, he reinforces his broader sense of a fundamental continuity between humans and animals, thereby disrupting notions of divinely created or autonomous human nature. As Bennett Zon notes, "the study of animal music [in Victorian Britain] aimed to prove that man was no different to the animals; in fact, from a musical standpoint, they were, at least in principle, almost entirely alike" (Zon 2017, 47). Indeed, for Darwin, "The perception, if not the enjoyment, of musical cadences and of rhythm is probably common to all animals, and no doubt depends on the common physiological nature of their nervous systems" (1871, vol. 2, 333).

In the same passage quoted above, where I have placed an ellipsis, Darwin included a brief meditation on sexual differences in the vocal abilities of early humans:

> [T]he suspicion does not appear improbable that the progenitors of man, either the males or the females, or both sexes, before they had acquired the power of expressing their mutual love in articulate language, endeavored to charm each other with musical notes and rhythm. So little is known about the use of the voice by the Quadrumana during the season of love, that we have hardly any means of judging whether the habit of singing was first acquired by the male or female progenitors of mankind. Women are generally thought to possess sweeter voices than men, and as far as this serves as any guide we may infer that they first acquired musical powers in order to attract the other sex. But if so, this must have occurred long ago, before the progenitors of man had become sufficiently human to treat and value their women merely as useful slaves. (1871, vol. 2, 337)

It is a banal fact that Darwin, throughout his writings, outlined a misogynist conception of the human species.[95] An important dimension of his theory of sexual selection—which is key to his theory of music—is that superior traits are passed strictly between male members of the species. Furthermore, in *Descent* he advanced the position that morality is what separates the human species from animals and proposed that the regulation of sexuality is crucial feature therein. By his account, controlling male sexual jealousy and violence was key to the rise of marriage, which was itself seen as a means of maintaining the proper hierarchy of the sexes, and therefore of making society more civil.

In 1875, the American scientist and Protestant minister Antoinette Brown Blackwell criticized Darwin's theory of evolution[96] for reinforcing a "time-honored assumption that the male is the normal type of his species" (122). Blackwell was a prominent abolitionist, proponent of women's rights, and the first woman Protestant minister to be ordained in the United States. In *The Sexes Throughout Nature* (1875), she criticizes Darwin and Spencer for offering male-centric accounts of nature, which she believed reinforced the general perception that women are inferior to men. "The facts of Evolution may have been misinterpreted, by giving undue prominence to such as having been evolved in the male line; and by overlooking equally essential modifications which have arisen in the diverging female line" (Ibid., 20). By

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[95] See the *Female of the Species* (1975), where M. Kay Martin and Barbara Voorhies locate Darwin's ideas about gender and sex within a longer anthropological tradition of theorizing about the fundamental nature of the sexes (1975, 147-149).

[96] Blackwell's critique is leveraged equally at Darwin and Herbert Spencer, who she saw as the two most influential theorists of evolution. She writes, "When, therefore, Mr. Spencer argues that women are inferior to men because their development must be earlier arrested by reproductive functions, and Mr. Darwin claims that males have evolved muscles and brains much superior to females, and entailed their pre-eminent qualities chiefly on their male descendants, these conclusions need not be accepted without question, even by their own school of evolutionists" (1875, 14).

Blackwell's charge, the matter is not just a cosmological one but a social and political one. She explains that the exclusion of women from the study of science was one reason why scientific luminaries like Darwin were free to infer that masculine traits were superior to feminine ones, and that natural selection *inherently* favors the passage of traits between males.

Blackwell's critique offers a useful refraction of Darwin's beliefs about the role of sex in evolution, so I would like to devote substantial attention to it. Blackwell's critique of Darwin is focused on his claim that "males have evolved muscle and brains much superior to females" (1875, 14), which implies a preoccupation with male traits and a presumption of their innate advantage. She writes, "With great wealth of detail, [Darwin] has illustrated his theory of how the male has probably acquired additional masculine characters; but he seems never to have thought of looking to see whether or not the females have developed equivalent feminine characters" (Ibid., 16). In an extended passage, she laments the repetitiveness of Darwin's elevation of the male type of every species:

> Mr. Darwin's theory of Sexual Selection supposes that a male superiority has been evolved in the male line, and entailed chiefly to the male descendants. The females, sometimes, inherit characters originally acquired by the males; but this form of evolution is carried forward principally from father to son, from variety to variety, and from species to species, beginning with the lowest unisexual beings and continuing upwards to man. With a few inconsiderable exceptions, the more active progressive male bears off the palm, among all higher animals in size, and among all animals high and low, in development of muscles, in ornamentation, in general brightness and beauty, in strength of feeling, and in vigor of intellect. Weighed, measured, or calculated, the masculine force always predominates. (Ibid., 18)

In Blackwell's view, the tendency to address all of nature "from the male standpoint" was inherited from older models of human physiology, where it was presumed that "the male is the representative type of the species—the female a modification preordained in the interest of reproduction, and in that interest only or chiefly" (Ibid., 17).

Blackwell does not deny evolution. Indeed, she wielded her authority as a religious leader to argue in favor of evolution, just as she did in her advocacy for the rights of woman and the abolition of slavery. With *The Sexes Throughout Nature,* she offers nothing less than an original reading of evolutionary science that affirms the equity of the sexes and establishes the positive powers of feminine traits. She also argues that masculine and feminine forces are found in all creatures, and thus departs from views of sex as something inherently about physiological differences.

Blackwell's rereading of evolutionary theory begins by accounting for a system of "natural checks" that work to maintain equilibrium between the sexes. "[A]s a whole, the males and females of the same species, from mollusk up to man, may continue their related evolution, as true equivalents in all modes of force, physical and psychical" (Ibid., 21-22). Masculine and feminine traits are not differences in form, in her account, but rather differences in function. "*Division of function,*" she writes, "is the *origin* of sex" (Ibid., 46). Masculinity and femininity "are evolved not in parallel but in adapted diverging lines" (Ibid., 25). The necessary balance between the sexes is not just biological but cosmological: "The universal law of balanced action and reaction dominates all aggregates, inorganic and organic alike. No tension could be established otherwise, no two atoms could enter into combination. Without this balance of forces, a mass or aggregate of any kind would be impossible" (Ibid., 35). Blackwell affirms infinite balance in the vocabulary of her own religious faith: "But that all this has been

accomplished *without intelligent plan or prevision*, certainly is not a theory essential to the hypothesis of Evolution… Nowhere is there higher evidence of Design, and of the existence of a true sentient force co-operative in every organism" (Ibid., 62). At the same time, she follows Spencer's lead in departing from the "discourse of the soul," arguing like he does for a physiological basis for thought: "[I]n organized life, motion and emotion are but two phases of the same process" (Ibid., 66).

There is one case in which Blackwell departs from her own insistence on the equivalence of the sexes. A cosmic imbalance between them emerges in a passage where Blackwell is discussing highly-developed species, like humans, which tend to exhibit a clearer distinction between the sexes. Although she reiterates that equilibrium between the two sexes is guaranteed by evolutionary principles, she nevertheless describes the *progressive force of evolution itself* as a product of feminine technicity. The "division of functions" that distinguishes the two sexes tends to be the result of "*the addition* of exclusively female characters" (Ibid., 28). In this sense, the special exponent force of femininity serves as the evolutionary engine of sex differences, in Blackwell. Thus the divergence between the sexes is not the result of patriarchal ascendance, or the suppression of women, but rather by virtue of a feminine supplement. As examples, she credits female insects with innovating the practice of laying eggs near a food source; she cites the mother bird for ingeniously contributing her own body heat to the growth of her chicks; and female mammals for feeding their young directly from their own bodies. "The male never affords direct nurture to offspring; the female always affords direct nurture to offspring" (Ibid., 29). "[A]t the head of the scale, the human infant is more dependent on its mother than any other living thing," she writes (Ibid., 28). But ultimately for Blackwell, neither male nor female functionalities is superior to the other. Any functional differences are rooted in a fundamental

unity of opposing energies, which are both found in all things: “the feminine and masculine, with their opposed tensions and polarities of forces, are combined in every organism” (Ibid., 43). This cosmic tension exists all the way down to the cellular level: “Every cell is a little organism, like every other of its own type” (Ibid., 44).

Blackwell reminds her reader that a theory of evolution is nothing without facts drawn from Natural History. Combining Spencer’s concept of “moving equilibrium” with her own studies in Natural History, she argues that the material world tends toward states of balanced differentiation. “Applied to sex, as to species, ‘variation is necessitated by the persistence of force’”(Ibid., 32) (Ibid., 43)—in this passage she quotes Spencer directly and thus transfigures his words into her own scientific statement about male and female equality. She similarly appropriates Darwin’s extended comparisons of secondary sexual characters toward her own table of equations representing the equilibrium of the sexes in various species. In her “Tabular View of Equations in Organic Nature” she arranged Darwin’s data into a comprehensive demonstration of the balance between the sexes. In her description, this table helps to reset the balance between the sexes that is so often misrepresented in evolutionary writings. “Fixing attention, as [Darwin] does, upon masculine characters only, there seems to be no equilibrium of sex; but, holding the feminine characters up beside the others in a balanced view, the equilibrium is restored” (Ibid., 59).

The Asexual Plane.

A given amount of growth anywhere } = { The same amount of growth everywhere.

Whether the result be large or small aggregates, the equation remains unchanged.

The Sexual Plane.

Males. | Females.

PLANTS.

Stamens and their Products } = { Pistils and their Products.

INSECTS.

± Structure,
— Size,
+ Color,
+ Activity,
— Products,
+ Sexual Love,
(wanting)

=

± Structure,
+ Size,
— Color,
— Activity,
+ Products,
— Sexual Love,
± Parental Love.

Figure 6.1: *Antoinette Blackwell's "Tabular View of Equations in Organic Nature" (1875, 55)*

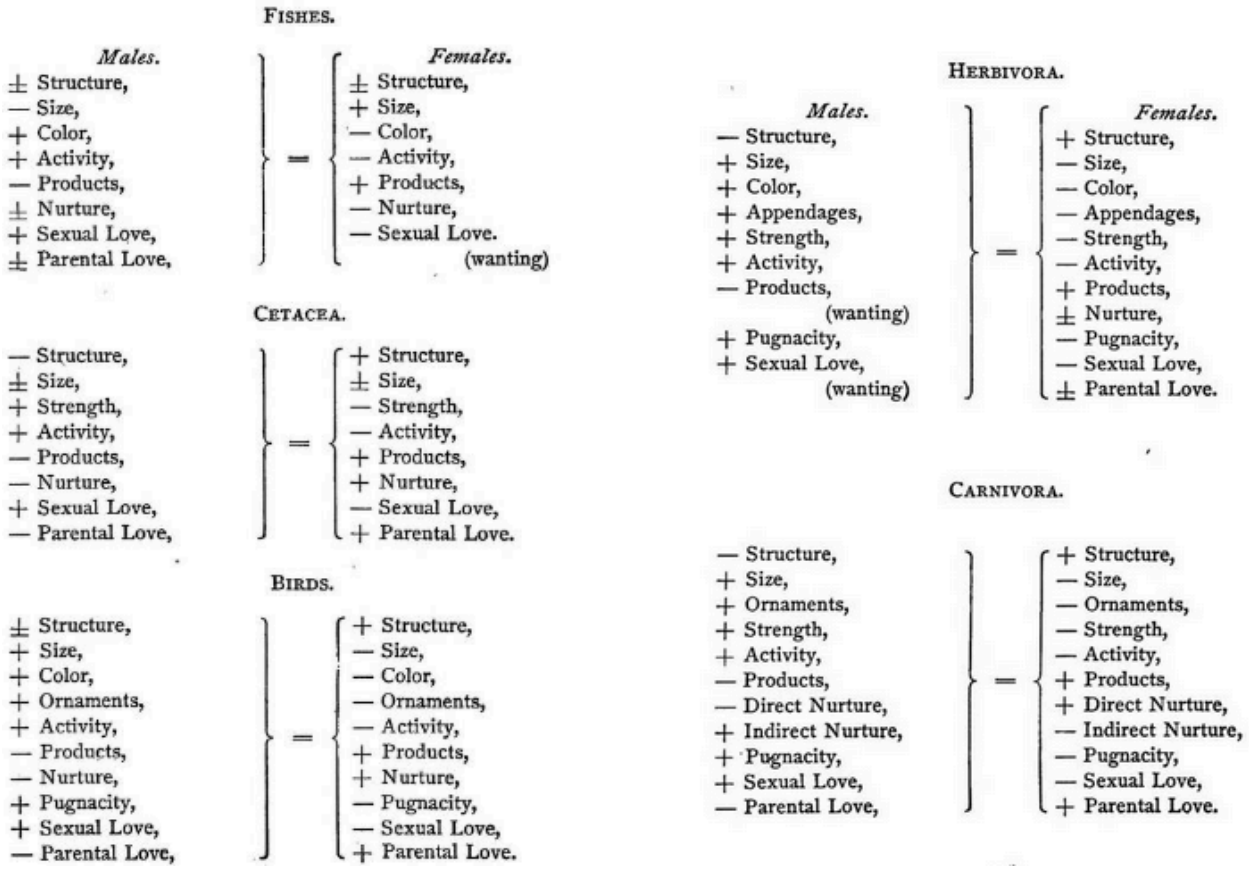
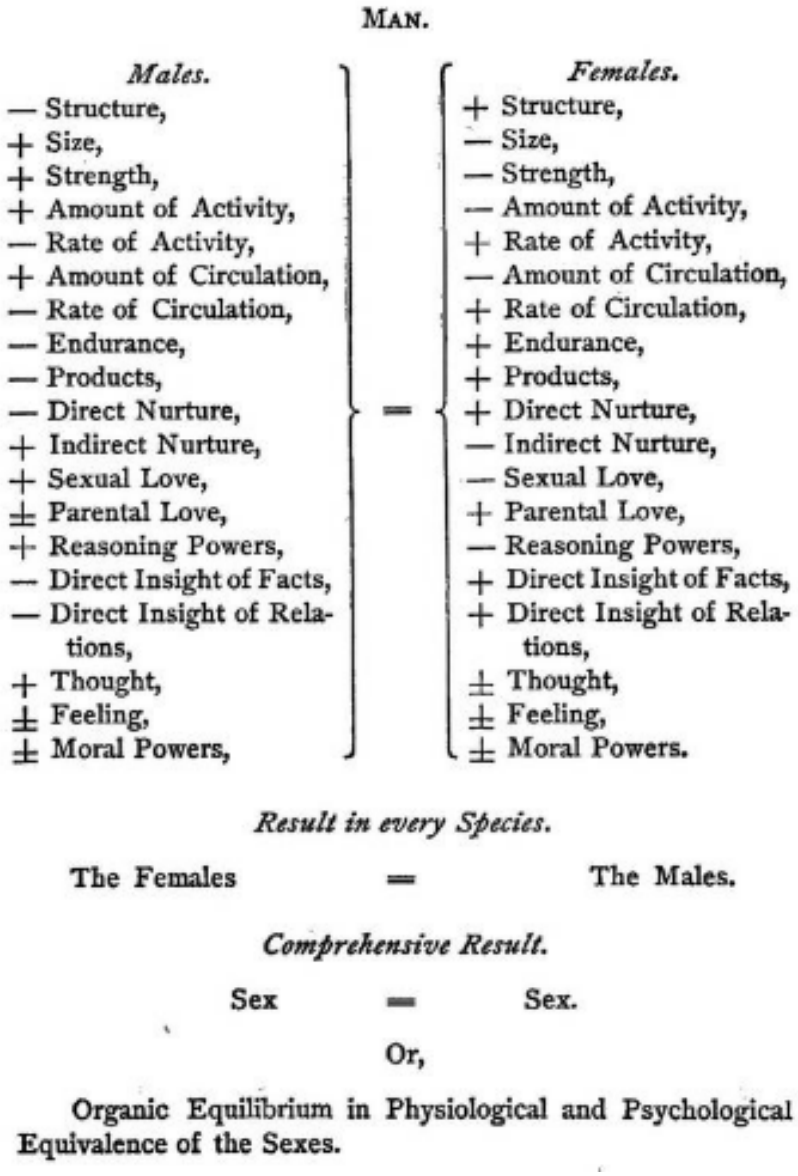


Figure 6.2: *Antoinette Blackwell's "Tabular View of Equations in Organic Nature," continued (1875, 56-57)*



MAN.

Males.		*Females.*
— Structure,		+ Structure,
+ Size,		— Size,
+ Strength,		— Strength,
+ Amount of Activity,		— Amount of Activity,
— Rate of Activity,		+ Rate of Activity,
+ Amount of Circulation,		— Amount of Circulation,
— Rate of Circulation,		+ Rate of Circulation,
— Endurance,		+ Endurance,
— Products,		+ Products,
— Direct Nurture,	=	+ Direct Nurture,
+ Indirect Nurture,		— Indirect Nurture,
+ Sexual Love,		— Sexual Love,
± Parental Love,		+ Parental Love,
+ Reasoning Powers,		— Reasoning Powers,
— Direct Insight of Facts,		+ Direct Insight of Facts,
— Direct Insight of Relations,		+ Direct Insight of Relations,
+ Thought,		± Thought,
± Feeling,		± Feeling,
± Moral Powers,		± Moral Powers.

Result in every Species.

The Females = The Males.

Comprehensive Result.

Sex = Sex.

Or,

Organic Equilibrium in Physiological and Psychological Equivalence of the Sexes.

Figure 6.3: *Antoinette Blackwell's "Tabular View of Equations in Organic Nature," continued (1875, 58)*

Blackwell's goal in rereading evolutionary science through the lens of feminine traits was ultimately meant to serve her greater mission of securing increased respect and rights for women. She warned readers that thinkers like Darwin and Spencer "are now scientifically remanding Woman to a position of permanent mental inferiority" (Ibid., 185), and each in their own distinct

ways: “Mr. Spencer scientifically *subtracts from the female*, and Mr. Darwin as scientifically *adds to the male*” (Ibid., 18-19). This had consequences for every aspect of women’s lives, Blackwell writes. In her chapter “Sex and Work” she laments: “The world has insisted, and still insists, whenever it attempts an estimate, on measuring the woman’s work directly by the man’s standard. If it falls short according to these, it is allowed no other appreciable merit” (Ibid., 184). Understanding that Darwin’s and Spencer’s evolutionary theories helped set the standard of nature, Blackwell pointed out that evolutionary knowledge has negative ramifications, particularly for those who are denigrated by evolutionary accounts. “[T]he great underlying cause of all is a false theory that, because women are to be the mothers of the race, therefore they are not to be the thinkers or the pioneers in enterprise. This ancient dogma enfeebles one class of women and degrades the other” (Ibid., 112). Blackwell’s observation—that the evolutionary value of women’s labor is rendered invisible when it is measured by masculine standards—has a secondary implication. By remaining busy with work dictated by others, we cannot begin work of our own.

Although Blackwell makes almost no mention of voice or music in *The Sexes Throughout Nature,* her critique of Darwin has significant implications for his evolutionary theory of music, which fed directly into his ideas about the place of sexual selection in human evolution. Put differently, if Darwin’s account of sexual selection is limited by his inferences about sexual difference, so too is his music theory, which is reliant on the former. In the next section I want to look more closely at Darwin’s account of music and its position within his account of sexual selection.

What is music?

What is music, for Darwin? In the second edition of *Descent*, he distinguished between a "note" and a "noise":

> A critic has asked how the ears of man, and he ought to have added of other animals, could have been adapted by selection so as to distinguish musical notes. But this question shews some confusion on the subject; a noise is the sensation resulting from the co-existence of several aërial 'simple vibrations' of various periods, each of which intermits so frequently that its separate existence cannot be perceived. It is only in the want of continuity of such vibrations, and in their want of harmony *inter se*, that a noise differs from a musical note. Thus an ear to be capable of discriminating noises – and the high important of this power to all animals is admitted by every one – must be sensitive to musical notes. We have evidence of this capacity even low down in the animal scale. (1874, 568-569)

For Darwin, noises and notes are objective things with specific acoustical properties. Thus animals and humans did not evolve to hear music, per se. Rather Darwin assumes they already possessed the ability to distinguish between noises and notes. In this sense, the ability to hear a sound as musical is not a learned trait but an instinctive one, tied to the physiological ability to differentiate between meaningful sounds (notes) and unmeaningful excess (noise).

Having located the origins of aesthetic perception in the innate ability to distinguish between beautiful tones and mere noise, Darwin presumed that music is an ancient art, developed from older and more generalized behaviors and traits. This contributes to a unique take on musical affects. In brief, Darwin theorizes a transhistorical connection between ancient and contemporary musical feelings. He took care to distinguish himself from Spencer, who had

previously positioned music above language in the proverbial chain of fitness.[97] Darwin saw music as a primitive form of expression—birdsong is his favorite exemplar of animalistic forms. Spencer replied directly to Darwin in an essay for *Mind* in 1890, rejecting Darwin's assumption that music is older than language and reasserting his own position that music is an advanced human behavior. Spencer also rejected Darwin's hypothesis that music has an inherently erotic function; Spencer argues that birdsong is hardly proof of concept, as birds often sing outside of mating season.[98]

Darwin's belief that music is a universal and ancient feature of human behavior and a common behavior in animals helps him to shore up a definition of music that contains a paradox. Darwin claims that music is universal but he only admits to hearing certain natural sounds as musical, e.g., the songs of birds and mice. In this way, his criteria for music is set in advance, and is created from his own experiences listening to music with specific formal constraints, that is, Western pitch and rhythmic structures. This partially extends to his views on music and race. For instance, he observes that "Hottentots and Negroes" will "readily become excellent musicians, although they do not practise in their native countries anything that we should esteem as music" [1871, vol. 2, 334]. While he is satisfied to refer to birdsong as "music" he senses that his reader will not be as persuaded by the sonic stylings of non-European cultures. Darwin here acts not simply as evolutionary theorist but as music ontologist, implicitly leveraging a definition of music that reflects the sorts of music he himself is able to recognize as music. Occasionally

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[97] Remember that for Spencer music arises from impassioned speech and thus represents a more developed and uniquely human form of expressive communication (1857).

[98] Spencer writes, "…I have made memoranda concerning various songbirds dating back to 1883. On February 7 of that year I heard a lark singing several times; and still more remarkable, during the mild winter of 1884 I saw one soar and hear it sing on January 10. Yet the lark does not pair till March" (1890, 452).

his implicit evocation of Western music as the ground of music in general becomes explicit enough to warrant notation in the classical style:

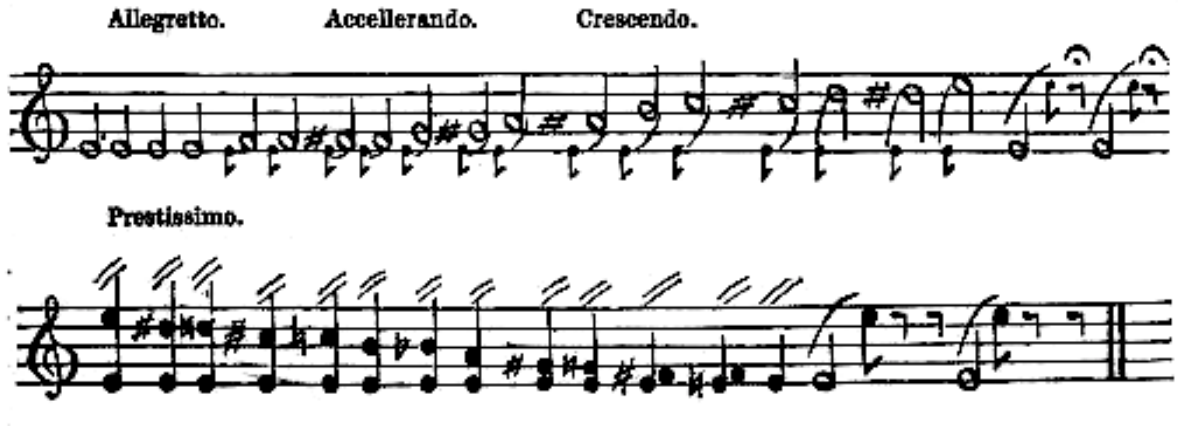

Figure 6.4: *Mr. Waterhouse's notation of gibbon's whooping, copied in Martin 1841, 432, cited by Darwin in his discussion of man's musical powers (1871 332-33)*

The primitive nature of music in Darwin's account reflects his beliefs about the purposes of music. For Darwin, music is tethered equally to basic perceptual instincts and the higher apprehension of beauty. Darwin began thinking about music as a kind of bridge between sonic instinct and aesthetic perception in the early stages of his career as a naturalist. In one of his early notebooks—colloquially termed his *N Notebook*—Darwin jotted down his reflections on the aesthetic apprehension of beauty, specifically how it differs from the more basic expression of sexual desire:

> Old man at Cambridge observed the ignorant merely looked at picture as works of imitation. –Hence pleasure in the beautiful (distinct from sexual beauty) is

> acquired taste. –Whilst music extremely primitive. –Almost like tastes of mouth & smell. (1980, 74)[99]

Darwin's early musings on "merely looking" vs. "taking pleasure in the beautiful" already suggests a sharp division between sexual instinct, on the one hand, and elevated aesthetic sensibility on the other; here he finds music firmly on the instinctual side of things. However, Darwin's distinction between *innate pleasures* (which are sexual) and *learned pleasures* (which are involved in the apprehension of art), grew increasingly complicated for him. The question of personal preference is important here.

Oftentimes evolutionary accounts of music serve to underscore a mythology of music as a "universal language." Darwin's position is that music is present in all human cultures but that each will have its own distinct "tastes": "[Musical notes] are present, though in a very rude and, as it appears, almost latent condition, in men of all races, even the most savage; but so different is the taste of the different races, that our music gives not the least pleasure to savages, and their music is to us hideous and unmeaning" (1871, vol. 2, 333). At the same time, shared biology is what reassured him of the universality of music. According to Darwin's theory of "inherited associations," modern music is an inherited trait that makes reference to the primal passions common to all of humanity, and indeed all forms of life. Musical experiences recall in us distant memories of ancient species-being, specifically to the physiological states associated with animalistic sexual conquest and competition. The "impassioned orator, bard, or musician" stirs the "ardent passions" of his listener in much the same way that early humans did, or that

[99] Paul Barrett notes that the words "Descent of Man" are written in crayon above this paragraph of the N Notebook (Barrett 1980, 93).

songbirds do, although he may not be aware that he draws on the same strategies as his ancestors (1871, vol. 2, 336-337).

Darwin asks how we can explain traits that are universal, yet that possess "the least direct use to man in reference to his ordinary habits of life."[100] Having observed that animals of all types exhibit a certain erotic magnetism with their sonic stylings—"Their chief, and in some cases exclusive use appears to be either to call or to charm the opposite sex" (1871, vol. 2, 331)—and that certain mammals "use their voices as a love-call" (Ibid., 332), he extrapolates the same powers to early human sonic expressions. Interestingly, Darwin acknowledges that music tends *not* to be associated with sex in human culture: "The capacity and love for singing or music, *though not a sexual character in man*, must not here be passed over" (Ibid., 330, emphasis added). Still, he offers the best solution he can think of, claiming that the voice was originally used as a mating call. "Although the sounds emitted by animals of all kinds serve many purposes, a strong case can be made out, that the vocal organs were primarily used and perfected in relation to the propagation of the species" (Ibid., 330). This is the crux of his argument in *The Descent of Man.*

In *The Expression of the Emotions in Man and Animals* (1872), Darwin defines sonic utterances as one form of expression "*involuntarily* used by man and the lower animals, under the influence of various emotions and sensations" (27, emphasis added).[101] For Darwin, these types of sonic expressions are still transhistorical and universal, thus "the young and the old of

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[100] The full passage: "As neither the enjoyment nor the capacity of producing musical notes are faculties of the least direct use to man in reference to his ordinary habits of life, they must be ranked amongst the most mysterious with which he is endowed" (1871, vol. 2, 333).

[101] On this point, Darwin cites Spencer, who has "drawn a clear distinction between emotions and sensations, the latter being 'generated by our corporeal framework.' He classes as Feelings both emotions and sensations" (1872, 27).

widely different races, both with man and animals, express the same state of mind by the same movements" (Ibid., 352). In positing a direct connection between emotion and muscular movement, and by extending that principle to humans and animals alike, Darwin aligns himself with Spencer. Together the two can be seen as departing from the "surprising nonsense" (Darwin's words; Ibid., 5) that had previously been published on the subject.

One of the targets of Darwin's charge is Sir Charles Bell. Bell had argued that human feelings are distinct from those of animals. Through his synoptic aphorism—"Expression is to the passions as language is to thought" (1806)—he suggested that language is an accurate translation of mental processes, and thus an indication of relative advancement. In this way, Bell juxtaposes the primitive passions of animals with the rationality and precision of human language and thought. Darwin, on the other hand, suggests that "the force of language is much aided by the expressive movements of the face and body," suggesting an equally close connection between language and expression, and between thought and embodied sensation. Furthermore, because man and animals are not "independent creations" (1872, 12), language too has ties to animal emotion and expression. Darwin also critiqued Bell for claiming that specific emotions are tied to their corresponding muscles but failing to demonstrate how different muscles are brought into action under their respective emotion. Darwin wonders, "why for instance, the inner ends of the eyebrows are raised, and the corners of the mouth depressed, by a person suffering from grief or anxiety" (1872, 2-3). Darwin advances the theory of emotional expression as being primarily about muscular movements of the face and body. In service of this hypothesis, he offers Three General Principles of Expression:

1. *"The principle of serviceable associated Habits."* For Darwin, the force of habit helps to fuse certain movements to a certain states of mind. If something is done enough times, a conventional form of signifying builds up.
2. *"The principle of Antithesis."* This principle implies that certain states of mind naturally lead to certain habitual actions.
3. *"The principle of actions due to the constitution of the Nervous System, independently from the first of the Will, and independently to a certain extent of Habit."* This principle is concerned with the actions of the nervous system that do not fall easily under the headers of Will or Habit; for instance, Darwin tells us that a great deal of nerve force is generated when the sensorium is excited. (Ibid., 28-29)

These principles imply an approach to *reading for emotion* that treats emotion's physical manifestations (on the face, in bodily movements, or in vocal expressions) as forms to be read. This implies that music, like all of the forms of emotive expression that Darwin addresses, enact meaningful symbols that must be interpreted. His theory of emotion's universality implies that these feelingful symbols will be read meaningfully and equally to all human beings, regardless of time and place. Emotion's universal legibility is a product of all things' mutual entwinement in matter, where all forms of expression find a shared natural origin in the three simple principles quoted above. Thus Darwin naturalizes the meanings of music: Music means erotic instinct, which should be audible to anyone with an ordinary perceptual apparatus. Because sexual selection drives human diversity and difference, in Darwin, the proper apprehension of musical beauty implies one's fitness for survival.

Does Music Play a Role in Adaptation?

In *The Origin of Species* (1859), Darwin began to outline the ways that his theory of sexual selection differs from his theory of natural selection. He explains that a concept of sexual selection was necessary to explain adaptations not directly related to survival. By distinguishing between natural selection and sexual selection, he worked to account for aspects of life that natural selection appeared not to favor, while still affirming that both forms of selection are involved in adaptive processes.[102]

For a present-day reader, the Darwinian musical hypothesis can be situated within debates about *adaptationism*. Adaptationism has become a fraught term and it is worth parsing slowly. In its most general sense, adaptationism is the assumption that an individual organism possesses distinct features, each of which is the result of evolutionary adaptation for a specific function. A strong form of adaptationism holds that biological variation is *primarily* explained by processes of natural and/or sexual selection for fitness. Some versions of adaptationism hold that it is possible to explain or even predict evolutionary processes by attending to the role of selection.[103]

The idea that an organism can be divided into distinct traits, each of which is acted upon individually by evolutionary forces, has long been the subject of critique. In an influential challenge to adaptationist paradigms, Stephen Jay Gould and Richard Lewontin argued that adaptationism erroneously implies that specific traits can be individually selected for fitness

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[102] Darwin's theory of natural selection has three components: 1) variation among individuals, 2) transmission of variance across generations, and 3) competition and selection of certain variants (Darwin 1859).

[103] My descriptions of strong and weaker forms of adaptationism are drawn from philosopher Peter Godfrey-Smith's definition of "Empirical Adaptationism" (2001, 336).

(1979).[104] In the wake of critiques like Gould and Lewontin's, adaptationist paradigms have reappeared in various forms, including as an approach to the study of music.

Aniruddh Patel notably introduced the terms "adaptationism" and "nonadaptationism" for evolutionary musicology in order to distinguish between music-evolutionary theories that treat music as a product of natural selection, on the one hand, or as a human invention that offers no adaptive advantage, on the other.[105] Patel described Darwin as the original adaptationist, and Spencer as the original nonadaptationist.[106] Prior to Patel's critical account of the adaptationist/nonadaptationist dichotomy, Steven Pinker famously ignited debate about the utility of music (or lack thereof) by arguing that music represents useless cultural excess—music is a nonadaptational, even decadent, human invention or "cheesecake." Pinker is a common straw man for evolutionary musicologists and Patel too quickly swats down the idea that "music is useless" (Pinker 1997, 528).

The mystery of whether music plays an adaptive role in human development has tended to involve a theoretical process of identifying and explaining what the basic elements of musical instinct might be. Recent theories of musical adaptationism have attempted to account for the adaptive nature of behaviors like infant-directed singing, musical improvisation, beat entrainment (the ability to synchronize with an external rhythm), and social dancing. Each of

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[104] See also Lewontin 1979 and Lewontin *et al.* (1984).

[105] Patel claims that evolutionary questions about music "originate with Darwin's discussion of the topic in *The Descent of Man* (1871)" (2010, 91). Spencer of course beat him to the punch, as did thinkers like Joseph Goddard and Erasmus Darwin with their proto-evolutionary theories of music (see my chapters 1, 2, and 3).

[106] In William James' *The Principles of Psychology* (1890) he speculates that the emergence of music is "a mere incidental peculiarity of the nervous system" (Vol. 2, p.419). He writes, "It has no zoological utility...it is a pure *incident* of having a hearing organ...it has entered the mind by the back stairs, as it were, or rather [has] not entered the mind at all, but got surreptitiously born in the house" (Vol. 2, p. 627). Quoted in Patel 2010, 101.

these has, at one time or another, been purported to hold a fundamental place in human musical behavior.[107] Within these studies, there are three common strands of musical adaptationism: 1) those based on sexual selection, 2) those based on parental care, and/or 3) those based on group cohesion. Some thinkers, such as Steven Mithen, invoke all three (2006). Here I want to focus on adaptationist theories based on sexual selection, which, according to Patel, originated with Darwin (2010, 98). Patel appreciates the adaptationist tradition for admitting the biological, rather than strictly cultural, dimensions of musical behaviors, but ultimately rejects it as an organizing paradigm. His own evolutionary theory of music treats music as a "transformative technology of the mind" and falls somewhere in between adaptationism and nonadaptationism.

Patel's problem with the sexual selection theory is that it does not account for the ways that music can influence the structure and functions of the brain over the course of an individual's lifetime, as opposed to over the course of multiple generations (2010, 121-128). In Patel's view, the Darwinian musical hypothesis does not go far enough to explain what he sees as music's unique adaptive potentials. One could alternately argue that the Darwinian musical hypothesis goes too far. By isolating one musical behavior and elevating it to the status of origin and purpose of all musicking, it reinforces a misleading view of evolution as an agentive force that separates and selects for specific features. This is Gary Tomlinson's critique of musical adaptationisms.

Tomlinson finds musical adaptationisms wholly untenable: "Alone or together, these hypotheses fail as explanations," Tomlinson argues, "and always for the same reason: Each seeks a unilateral explanation for a manifold phenomenon" (2015, 33). For Tomlinson, "the full range of capacities recruited in modern musicking will not be explained—in principle *cannot* be

[107] For a critical overview, see van der Schyff and Schiavio 2017.

explained—as music-induced evolutionary developments" (2015, 32). He writes, "Evolutionary biologists deride such global imprecise and teleological accounts as 'just-so' stories—in this case, How the Human got His Music" (2015, 33-34). Thus, the question "Is music an adaptation?" is to Tomlinson "in a basic way meaningless" (2015, 34).

If strong forms of adaptationism are deemed unviable, one alternate approach to the question of music's place in evolutionary history is to clarify the meaning of an adaptation. Thinkers like Gould, Lewontin, and Elisabeth Vrba distinguish between *adaptations* (specific traits selected for a specific function) and *exaptations* (traits selected for one function but used for a different one). For theorists of exaptation, the relevant dichotomy is not between adaptationism and nonadaptationism, but between theories of music *as adaptation* and theories of music *as exaptation*.[108]

Any theory that tries to explain the evolution of a complex human activity like music will have two prerequisites: 1) it must be inclusive of relevant cognitive and behavioral capacities that are not domain-specific, and 2) it must possess a long enough chronological reach. Otherwise "evolutionary" accounts of musical development are more accurately viewed as metaphors for general processes of change. But if both are present, the ability to make specific claims about music in the present is drastically reduced. Thus, musical adaptationists find themselves in a conceptual bind, unable to make specific claims about music or about evolutionary processes.

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[108] In Tomlinson's account, Steven Pinker again appears in the role of straw man, this time as the misguided proponent of a reductive exaptationist view (Tomlinson 2015, 32). For the coining of "exaptation" see Stephen Jay Gould and Elisabeth S. Vrba's "Exaptation—A Missing Term in the Science of Form" (1982).

Centrality of Aesthetics and Preference

Evolutionary accounts of music have arguably always been adaptationist by design, simply by virtue of cordoning off music as a distinct acquired trait. But adaptationist accounts of music also tend to sharpen their focus even further, zeroing in on specific musical behaviors. For instance, evolutionary musicologists have argued alternately that music arose from an array of highly specified behaviors: 1) as a courtship display, 2) from imitations of animal cries, 3) as a vocal learning strategy, 4) as a form of group formation and social bonding, and/or 5) as Infant Directed Speech, or "Motherese," or combinations of the above.[109] Each of the above hypotheses indulges in a problematic "adaptationist fundamentalism," to borrow a term from Jonathan Kramnick (2012, 443).[110]

Such adaptationist fundamentalisms share similarities with a controversial area of research known as "evolutionary aesthetics." Proponents of evolutionary aesthetics argue that aesthetic experiences, such as color or food preference, can be taken as evolved responses to selection pressures (see, for instance, Dutton 2003). In these theories, ideas about what is aesthetically pleasing inform theories of human psychology and behavior. Human aesthetic preferences are understood to be evolved to enhance survival or sexual reproduction, and thus are explained by the principles of natural and/or sexual selection. Evolutionary aesthetics is purported to provide an alternative to the idea of the mind as a "blank slate" upon which cultural attitudes and knowledges are inscribed, replacing it with a "Swiss army knife" model, where the

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[109] Falk 2004 is one example of a study of "motherese" that takes an evolutionary perspective. For an overview of musical adaptationisms see David Huron's "Is Music an Evolutionary Adaptation?" (2003). Ian Cross and Iain Morley's "The Evolution of Music: Theories, Definitions, and the Nature of the Evidence" (2009) offers helpful complications of adaptationist paradigms. For further literature review and discussion, see Tomlinson 2015, 30-37.

[110] See also Jonathan Kramnick 2011, as well as discussion of the above in Tomlinson 2015, 34.

mind comes equipped with innate tools and traits adapted long ago, in response to selection pressures in the Pleistocene era.[111] Studies that take the idea of evolutionary aesthetics seriously (such as the examples with which I opened this chapter) are inherently adaptationist because they begin with the assumption that aesthetic preferences are evolved adaptations.

An important feature of Darwin's ideas about sexual selection (and by extension his ideas about music's role in sexual selection) is his insistence on the importance of female preference. In addition to distinguishing between natural selection and sexual selection, Darwin distinguished between sexual selection mediated by male-male combat and sexual selection mediated by female preference. He placed a great deal of emphasis on the latter, providing examples from various animals: a female mallard duck, for instances, can experience love at first sight. A concept of female preference had been percolating in his mind as early as 1844. In an early essay, Darwin described birdsong's role in male songbirds' competition for females: "These struggles are generally decided by the law of battle; but in the case of birds, apparently, by the charms of their song, by their beauty or their power of courtship."[112]

Contemporary scholars have found fault with Darwin's invocation of preference. For Jones and Ratterman, Darwin's argument for female preference is "one of the largest shortcomings in his treatment of sexual selection" because it gives the impression that animals must employ "a human-like sense of aesthetics" in order for sexual selection to work (2009, 10002). Jones and Ratterman explain that Darwin went to "great lengths" to argue that certain animals "possess sufficient intelligence to appreciate beauty" (Ibid., 10002). This raises several

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[111] See Dutton 2003, Barkow *et al.* 1992, Mithen 1996, Pinker 1997.
[112] ("Essay of 1844" in Francis Darwin (ed.), *The Foundations of the Origin of Species: Two Essays Written in 1842 and 1844 by Charles Darwin.* Cambridge: Cambridge University Press, 1909, 92-93.

questions: Is sexual attraction a kind of aesthetic judgment? If yes, how similar is it to the kinds of judgments that define musical experiences? Most importantly: How useful is it to compare a human sense of aesthetics to that of animals?

In *The Universe of Things* (2014), Steven Shaviro mentions an "inverted" anthropocentrism, where "we take it for granted that a world without us, a world from which *our own* values have been subtracted, is therefore a world devoid of values altogether" (91). Darwin seemed to understand this well when he insisted that those aspects of nature we find "abhorrent to our ideas of fitness" are not evidence against natural selection. Darwin explains,

> We need not marvel at the sting of the bee causing the bee's own death; at drones being produced in such vast numbers for one single act, and being then slaughtered by their sterile sisters; at the astonishing waste of pollen by our fir-trees; at the instinctive hatred of the queen bee for her own fertile daughters; at ichneumonidae feeding within the live bodies of caterpillars; and at other such cases. (1871, 472).

He continues: "The wonder indeed is, on the theory of natural selection, that more cases of the want of absolute perfection have not been observed" (472). If the things we judge to be aesthetically or morally displeasing provide no evidence against natural selection, there can be no causal link between aesthetic judgments and evolutionary processes. In moments like this, Darwin seems to realize that his account of evolution is much broader than his own understanding of human morals.

Toward an Alternative Reading of the Darwinian Musical Hypothesis

One conclusion to be drawn here is that Darwin's theory is more open-minded than he is. Although his personally held views about things like the relations between the sexes ultimately led him to a reductive account of sex differences, as expertly deconstructed by Blackwell, he seemed to sense that nature was more open and eccentric than his own projections of human nature. While Darwin himself was not the most useful authority on matters of sexual difference, music, or aesthetic preference, his theory of evolution nevertheless leaves space for radical readings of nature that depart from the kinds of "strict" readings with which I opened this chapter.

Music psychologist Elizabeth Margulis has rightly noted that "the [evolutionary] theories in vogue at a particular moment can reveal much about cultural attitudes to the subject under inquiry" (2013, 3). Strict invocations of the Darwinian musical hypothesis, in the vein of Charlton or Miller, reveal enculturated beliefs about the forms and functions of music, and its utility to human survival and reproduction. These strict readings of the Darwinian musical hypothesis thus run two distinct risks: 1) the risk of oversimplifying evolutionary principles in service of tired cultural stereotypes about musical expression, and 2) the risk of drawing on the authority of science to prescribe or reinforce a norm.

The deeper implication advanced by strict invocations of the Darwinian musical hypothesis is that the modern musical mind evolved in response to selection pressures from a bygone environment. Music evolved because of events long past, and will continue to bend to the will of this lost sonic paradise. These nostalgic readings of the Darwinian musical hypothesis constrain evolutionary musicologists from saying anything specific about music in the present. Their "Darwinian" interpretations ultimately tell us little that is novel about the meanings of

music or sexuality. At best, they can only reinforce trivial truths, like "the mind is product of evolution" or "music possesses aesthetic and emotional power." At worst, they reduce music to amatory noise and musicians like Hendrix to a reified bundle of "selfish genes."[113]

Evolutionary theories of music are ontologies of music, in the sense that they implicitly assert an idea of "what music is." Strict readings of the Darwinian musical hypothesis suggest a musical ontology where musical traits and behaviors become meaningful as tools for the propagation of the species, specifically to attract opposite sex mates. In this way the Darwinian musical hypothesis—as a musical ontology—has the power to naturalize music's special connection to sex as a basic element of human life in categorically reductive ways. Toward this end, I want to emphasize that strict readings of the Darwinian musical hypothesis are not just problematic because they are gendered and heteronormative.[114] There are at least three further issues. These same issues are present to a greater or lesser extent in any attempt to explain music's deep evolutionary history that treats itself as apolitical.

First, studies like Charlton's and Millers' are limited in their explanatory potential because they rely on narrowly adaptationist models of Darwinian selection and variation. By this I mean that they begin with the assumption that music plays a role in the survival and propagation of the human species. By suggesting that any instantiation of musical meaning is ultimately "about" species propagation, strict readings of the Darwinian musical hypothesis effectively subsume all musical meaning under the umbrella of sexual selection.

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[113] *The Selfish Gene* is a 1976 book by Richard Dawkins that advances a controversial gene-centered view of evolution. According to this view, heritable information is passed primarily or exclusively by genes. Natural selection and evolution are thus approached from a proverbial gene's eye view, rather than focusing on organisms or groups.

[114] At the same time, misreadings of Darwin on music are not strictly the province of male-centered worldviews. Elizabeth Grosz's (2004) feminist recuperation of the Darwinian musical hypothesis is also on shaky conceptual ground, as Robin James has demonstrated (2014).

The second problem with contemporary invocations of the Darwinian musical hypothesis is that they invoke an evolutionary scale of inquiry for a comparatively microscopic thing—see for instance the deeply flawed study "Statistical Universals Reveal the Structures and Functions of Human Music" (2015), where conclusions drawn from a study of 304 recordings are treated as conclusions about "human music." Such a colossal mismatch between the scale of the method and the scale of the object exemplifies a hubristic scientism. As does the implication that something as nuanced as musical meaning can find a clear causal origin, such as in primal scenes of courtship. To return then to the example of Charlton's ambitious empirical study of women's sexual preferences for composers of more complex music, we find that this is more so a reflection of the author's own rather mechanistic conceptions of sexual attraction and musical taste. Similarly, Miller's detour into 1960s American rock 'n' roll is more so a refraction of specific cultural fantasies about what "Hendrix," "Clapton," and "Garcia" represent than it is a properly evolutionary argument. Darwin's argument too is part and parcel of his quintessentially Victorian-scientistic attitude toward gender and sexuality. While these men's conclusions ultimately tell us very little about the nature and purpose of music, they reveal a great deal about how music is understood and valued by a given individual or community.

The third problem with strict readings of the Darwinian musical hypothesis has to do with the ways that contemporary scholars appeal to Darwin rhetorically. In extreme cases, they are too narrowly focused on speculative comments about musical origins that Darwin himself would later complicate. When present-day scholars cite Darwin as an authority on musical origins, they imply that his impressionistic writings on music validly support an evolutionary account of human cultural expression. But if music scholars want to cite Darwin as a legitimate culture

critic, they must do additional historical and critical labor to contextualize these citations—it cannot simply be "because Darwin said so."

Although I believe that a Darwinian account can be effective for developing long histories of human cultural evolution, in the vein of Gary Tomlinson or Antonio Damasio, it does not follow that evolution can help explain every aspect of musical style, aesthetic preferences, or musically-mediated forms of social attraction. Utilitarian views of human cultural practice account for only a minute range of what music might do interpersonally. Yet they are peddled as universal truths, verified by "scientific" methods, and endorsed by retro-fashionable figures like Darwin.

That the Darwinian musical hypothesis has become relevant again has implications for academic music studies, broadly construed. The idea that there is a special connection between music and sex is closely tied to ideas about the ground of music perception; as well as the separation of, or continuity between, humans and nonhumans; the relationship between music and language; the possibility of correspondence between mind and body; the distinction between represented emotion and felt emotion; the biological and cultural aspects of aesthetic judgments; and, more recently, the place and function of verbal and nonverbal forms of consent. The Darwinian musical hypothesis has been revitalized because it appears to explain traits that possess no adaptive function but nevertheless appear to be evolutionarily powerful, such as in the case of music's power to aide erotic encounters. Within this utilitarian views, music and sex become meaningful only for their contributions to the transfer of genetic material, to heterosexual forms of sociality, and to species propagation. This sort of reductivism is unfortunate because it excludes or denigrates a vast array of musical meanings that are

apparently useless for species propagation, and because it refuses to allow practitioners to articulate the meanings of their music on their own terms.

In the next chapter I depart from strict readings of the Darwinian musical hypothesis in order to explore a version of the Darwinian musical hypothesis that preserves Darwin's metaphorical equation of music with sex—but that does not reduce sex to reproductive instinct.

CHAPTER SEVEN

ANALYSIS II – Music As Sex

Content warning: In this chapter I examine sexually explicit music in some detail and I quote from sources that use graphic language to describe sexual acts.

This chapter explores an alternate interpretation of the Darwinian musical hypothesis. I extend Darwin's speculation in *The Descent of Man* (1871) that "musical tones became firmly associated with some of the strongest passions an animal is capable of feeling" (vol. 2, 336, fn. 33) while denying the enculturated beliefs about gender and sex that overfocused him on the reproductive aspect of musical eroticism. In other words, I develop an analytical program that emphasizes Darwin's metaphor of "music as sex" without his adaptationism. With recourse to recent feminist and queer theories, I authorize a Darwinian analogy between music and sex, within which sex is not reducible to reproductive instinct. I focus my analytical attention on a collection of descriptions of listening to a track that is explicitly evocative of sex: Jeremih's "All The Time" (featuring Lil Wayne and Natasha Mosley, produced by FKi). By reflecting on a specific archive of phenomenologies of listening to this track, I demonstrate ways that our understandings of music can be enriched by a metaphorical equation of music with sex. This approach to Darwin's theory of music does not represent an evolutionary argument in a strong sense. I maintain that the evolutionary power of musical-erotic experiences is unclear, due to ontological instability of "the musical" and "the sexual."

As we have seen, strict applications of the Darwinian musical hypothesis reduce the richness of music's erotic affordances to biological impulses that point toward procreative

achievement. Differently, I get at the question by highlighting musical-erotic listening practices that are not connected to sexual reproduction. I draw attention to instances of musical sexuality that are instead about things like queerness, friendship, unrequited attraction, danger, obsessiveness, virtual connectivity, and autoeroticism, as well as culturally-specific forms of curiosity, intrigue, excitement, anticipation, mystery, boredom, loneliness, jealousy, disappointment, shame, alienation, and resentment. I argue that treating sexuality primarily as a means to an end for reproducing one's genes—and, by extension, treating non-reproductive sexual behaviors as subsidiary or deviant—is a massively reductive interpretation of human behavior as it actually exists in the world, and thus a misuse of evolutionary science. Exploring non-reproductive sexual behaviors is valuable to evolutionary musicology because doing so helps us complicate our understandings of what is "normal" sexuality. My ultimate goal is to discourage others from using evolutionary science to rationalize cultural stereotypes.

Terms

For the purposes of my analysis, I use the words "eroticism" and "sexuality" interchangeably. Both signify a motivational state toward an object of desire. These can include motivations toward things that make us feel good, or toward things that are bad for us (Berlant 2011a and 2011b). I leave this definition open, in the spirit of interdisciplinary research like Anne Bolin and Patricia Whelehin's *Human Sexuality: Biological, Psychological, and Cultural Perspectives* (2009). Bolin and Whelehin write: "It is impossible to set narrow boundaries for what is included within the category we call sex" (2009, 32).

Sexuality here is distinguished from but closely related to gender expression, while not being necessarily dependent upon gender. Following gender theorists like Judith Butler (1999), I

define gender not as a set of biological characteristics but as a set of norms that only become legible in conjunction with socially encoded roles and behaviors, and which co-assemble with other categories of identity like race and class (Crenshaw 1991).

Because my analysis looks for the ways that musical sensations can be experienced as erotic, it is necessary to clarify what I mean by "sensation." I treat musical sensations and erotic sensations both as *tactile* forms of feeling (e.g., genital, manual, ear-tickling, or spine-tingling) as well as *communal* ones (e.g., the pleasures of listening and moving together). Music can literally touch you. It can stroke your outer ear, bristle your basilar membrane, tickle your skin, and rattle your bones.[115] Music can also "make you move"—it has a "mobilizing capacity," to borrow a term from Marie Thompson and Ian Biddle (2013, 5). This can promote a sense of *feeling with others*; my conceptualization of the communal forms of music-erotic feeling draws on and contributes to Mari Riess Jones' theory of dynamic attending.[116] Musical eroticism can have a kind of *groove*; indeed, lovers of dance music have long understood that an analogy between music and sex is not far-fetched.[117]

In keeping with the music theoretical tradition of exploring one's own phenomenology of listening, I will spend a portion of my analysis recounting my own experiences listening to music with sexual connotations ("All The Time"). I secondarily explore how other people listen similarly and differently than I do. To this end, I sample my analysis from comments posted on

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[115] Blood & Zatorre 2001, Jasen 2016, Stainsby & Cross 2009.
[116] Jones 1976, Jones & Boltz 1989, Jones *et al.* 2002.
[117] Luis-Manuel Garcia, for one, points to electronic dance music as a genre that prizes references to the body and body parts, dancing, and sex (2015); Garcia also names *repetition* as a feature of EDM that is specifically selected and designed to maximize embodied pleasure (2005). See also discussions of groove in Berliner 1994, Butler 2014, Bradby 1993, Csikszentmihalyi 1997, Gadir 2018, Janata *et al.* 2012, Jasen 2016. See Margulis 2014 for a review of literature (112).

YouTube, where users write expressively about the erotic meanings of "All The Time." I note references to structural features (e.g., tempo, instrumentation, form, performance style) and references to atmospheric elements such as "vibe" or "mood." I direct my analytical focus toward the things these users mention in their comments, in order to get a sense for what they mean when they say this song *is* erotic or *makes them feel* erotic sensations. By drawing on my own feelings about this track, combined with the diverse insights of strangers on the internet, my analysis works to subvert expectations established by strict Darwinian readings.

Using the internet to guide my analysis reflects ordinary ways that YouTube listeners develop and share interpretations of musical meaning. I reflect on the style and syntax of YouTube comments themselves and I speculate about the significance of these virtual collaborations to our understandings of these specific instances of musical eroticism. This prompts me to develop a novel music-analytical tool that reflects ways that these listeners communicate about music's more atmospheric affordances in ordinary language. I draw on commenters' references to the track's "vibe" or "mood," which I understand to mean "the feeling of the whole song" or "the atmosphere or pervading tone of the track." I offer a term—*mood*—that reflects the common desire to capture the total affective aura or impact of a piece of music, as in the colloquialisms "this puts me in the mood," "this sets the mood," "this is such a mood," or "big mood."

In this conception, *sexiness* is a moody quality of sound that captures listeners' desire to abstract the total aura of a track in language that communicates how strong the mood of the track feels, but without tracing that mood to particular musical structures. Mood, in this usage, is a specifically diffuse mode of musical experience that remains highly communicable. Mood thus

points to shared experiences of music as a vibey thing. Erotically vibing with music is one way that sexuality gets expressed where reproduction is not a possibility.

Reading Sexuality and Ambiguity in "All The Time"

"All The Time" is Lil Wayne's remix of an earlier collaboration between Jeremih and Natasha Mosley called "F**k You All The Time" (2012) from Jeremih's *Late Nights With Jeremih* mixtape (2012). The song was featured in *Magic Mike XXL* (2015), a commercial film about male erotic dancers starring Channing Tatum. Jeremih put "F**k You All The Time" on his "bedroom success playlist" in a feature for *GQ* (Phili 2015). The track is usually categorized as Rhythm & Blues (R&B), a style innovated by African American musicians who moved to urban areas in the 1940s during the Great Migration.

I chose this track in part because its potential for sexually-charged listening experiences is overdetermined. The refrain—"I, I, I, I could f**k you all the time"—establishes its undeniably erotic premise. I also chose this track because I like it, which means I am driven to give it a great deal of attention. My attention comes in the form of repeated listenings, close analysis, internet searches, discussions with friends, and other modes of devotion that themselves recall romantic investment. When I first heard this song in winter 2017, I listened to it repeatedly for several days—a common occurrence for me with songs I like.

My interest in "All The Time" also lies in the complexity of its erotic promise and the intersectional tensions that emerge from that complexity. I am a music analyst, a white middle-class secular Jew, university educated, and self-identified as queer and non-binary (she/they pronouns). Jeremih is a black American man, an R&B singer, songwriter, rapper, and record producer. He was born and raised in Chicago, began playing drums at age three, and eventually

attended Columbia College before releasing his breakout hit "Birthday Sex" in 2009. The overt sexuality of Jeremih's identity as a recording artist has been key to his success, as well as his controversy.[118] The musical eroticisms I describe below capture what Kobena Mercer calls "the ambivalence of the identifications we actually inhabit in living with difference" (2003, 143). Like musicologist Kyle Kaplan, I argue that this kind of ambivalence need not lead to "political aloofness" on behalf of listeners, but rather invites careful engagement with the specific locations and historical circumstances of our musical-erotic experiences (Kaplan 2018, 93). As we have seen, evolutionary accounts of music often preclude this kind of specificity because they are generalizing by design. Again, this analysis chapter is meant to complicate overly simplistic evolutionary ontologies of music or sexuality by exploring a specific, situated archive of listening experiences.

This track reliably gives me chills, a physiological sensation that music psychologists Anne Blood and Robert Zatorre have compared to sexual arousal (2001). I feel these electric currents all over my body, running up and down my torso and scalp, concentrated in the front of my body. As I listen I am propelled into memories and fantasies. I involuntarily flex and point my feet. A few structural aspects of the song's sound strike me as especially alluring: Slow tempo, low volume, the sound of breathing, wincing, stammering, and performance style—the way the vocal rhythm drags but never strays completely off the beat.

[118] In August 2009, Jeremih was selected by representatives of the Chicago Public Schools (CPS) to assist with a campaign to bring kids back to school. A protest again Jeremih by community activists claimed that Jeremih's music was "not appropriate for students" and "promotes teen sex" (ABC7 2009).

The refrain "I could f**k you all the time" is sung by Natasha Mosley with audible vocal distortion. Her voice is doubled and processed to a metallic finish.[119] She seems to be singing right into the microphone—her voice is loud in the mix—but the effect is distancing. At times her singing sounds arousing to me. She seems to be on the far end of a telephone, missing me. Other times I think she sounds a bit dead behind the eyes. The repetitiveness of the refrain is both palliative and unnerving. I know she is not talking to me.

Vocal timbre is a notoriously tricky thing to analyze. In "A System for Describing Vocal Timbre in Popular Song" (2016), Kate Heidemann offers an embodied phenomenological approach to analyzing vocal timbre that can be summarized as a mimetic account of musical perception. Heidemann prompts us to analyze vocal timbre by asking ourselves what it would be like to sing that way. "How do the vocal folds seem to be vibrating?" (2016, 3.4). "What is the apparent degree of breath support and muscular anchoring?" (Ibid., 3.27). For instance, the sound of Aretha Franklin's voice evokes for Heidemann "a visceral sense of what it is like to be the wistful or powerful personae in these songs" (2016, 4.6). Imaginatively reconstructing a vocalist's muscular exertion is one way of accessing the emotional meanings of the performance.

When I listen to Mosley sing the phrase "I could f**k you all the time" in the frame of mind of Heidemann's system, I come up a bit empty-handed—I am unsure how she feels and I sense that that is the point. Because of the audible vocal processing, the muscular effort that supports Mosley's performance is disguised, making it harder to imagine what it would feel like to sing that way myself. I assume the degree of vocal exertion is minimal—it sounds soft, like a whisper. But the vocal effects make it harder to intuit her character's state of mind. Her voice is

[119] Catherine Provenzano's "Auto-tune, Labor, and the Pop-Music Voice" (2018) offers a helpful introduction to the aesthetics of auto-tune.

saying "I could f**k you all the time." But the quality of her voice has changed, along with her sentiment. I feel suspicious; or rather, I understand this could be a mere *representation* of sexuality rather than a *seduction*. But still, the physical effect it has on me says something else.

"All The Time"

[Chorus: Natasha Mosley]
Early in the mornings when I think about you
Yeah – I hit you like "what you sayin'?"
In the mornings when I wanna fuck you
Yeah – I hit you like "what you sayin'?"
I could fuck you all the time
I could fuck you all the time

[Verse 1: Jeremih]
M-O-Ë-T, that's the fuck we sippin'
That's the fuck we drippin',
trap house still tippin'
Facetime when I'm gone,
she give me dome from a distance
And she love to climb on top,
she love to walk off limpin'
Pimps up, hoes down, legs up or toes down
Why she jock me?
'Cause she knocked knees and we got trees,
so Mary go around
Gotta know I ate it, she so sweet, now and later
I want that all the time, all the time
I'mma give you all of mine
when it's

[Chorus: Natasha Mosley]

[Verse 2: Lil Wayne]
Uhh, p-p-p-pussy for breakfast, that's how I start my day
My dick is a pen, it's written all over her face
I put my tongue in her mouth, I make them pussy lips drool
She got that junk in her trunk, you know I like junk food
I tell her like this, life is good, your pussy better
I put on a magnum, like a gold medal
And if it's sweet then I'mma eat it
'til I get sugar diabetes
I'm a blood and she anemic, we perfect
Tenuchi, oh year, I make her say
Young Mula Baby

[Chorus: Natasha Mosley]

[Verse 3: Jeremih]
Damn, damn lil' mama, you're sticky, icky, icky
Got a n*gga out here feelin' picky, icky, icky
Every time you put it on, man, it leave me real trippy
Every time we on it we keep it 50-50, uh
Don't let the time ticky, icky, icky
While I'm snappin' off your bra, and bitin' on your Vickie's
Head shots, feeling' real tipsy
Getting' real freaky and it's getting real frisky
She never say, "no," damn, she's so cold
Up and down, that pole, she go, go
Fuck me like you hate me, kiss my like you miss me
Anything I want to, that what she always lets me[120]

[120] Lyrics checked against those posted to genius.com.

I know all the words by heart. Sometimes when I listen I mouth my favorite lines, embody the sound, pretend I am the one singing. Other times the sense of separation between me and the music is frustrating. I feel lonely, unwanted. This song is less sexy when I feel this way, and more irritating. I alternate between feeling desirous and feeling alienated, between attraction and repulsion. "All The Time" can be too much, *too often*. I only register and reflect on these oscillations in interest after many listens, only after I have gone deep into the song—too close for comfort. But there are times when it is exceptionally unobtrusive. Listening on repeat can yield a decidedly calm effect, which for me translates to a non-sexual atmosphere, suitable for activities like studying. I go back and forth, affirming Elizabeth Margulis' sense that a defining feature of musical pleasure is that it "works one way at first, and then another way later" (2015, 95).

The track comes equipped with the visual symbol of graphic music, the Parental Advisory Label (PAL). Because my own parents would not let me purchase music with the PAL until I was 13, I find the icon's musical promise to be alluring in a subversive way. Though initially pioneered in response to anxieties about music that describes or depicts sexual activity, the PAL also scans for violence and other types of graphic content. Significantly, it can be treated as a badge of honor. Different from film ratings, which are more or less mandatory, the PAL is added on a voluntary basis (Cole 2010). First introduced by the Recording Industry Association of America (RIAA) in 1985 and then adopted by the British Phonographic Industry (BPI) in 2011, the PAL makes explicit content iconic, in two senses. First, by depicting music through the medium of a visual icon. Second, by denoting an audacious choice by an artist-as-icon. What the PAL suggests to the buyer is shamelessness, a disregard for taboos. In this way, it can add a dimension of eroticism before the music is even heard, in the form of an *expectation* of explicit content.

"All The Time" is interesting because it comes stamped with the PAL but it also censors itself—the word "fuck" in the refrain is bleeped out. This apparent paradox is especially interesting, not just in light of the presence of the PAL, but because other explicit lyrics remain uncensored in this track. Bleeping the word "fuck" when it need not be bleeped draws even more attention to the track's overall candor, amplifying and exaggerating the sense that Parents need be Advised. This suggests another affordance for the PAL. Although it usually screens for explicit *lyrics*, in the case of "All The Time" the most significant curse word is censored, suggesting that the PAL can warn us about more than just the lyrics—it can also tell us something about the track's vibe as a whole.

Harmonically the song is comprised of a two-chord shuttle between e minor and F major chords. Chord shuttles like this often have ambiguous tonal hierarchies since it matters less which chord is the tonic.[121] But that is not the case here. The tonic chord feels like e minor because the vocal line tends to rest on the pitch "E," creating a semitone dissonance with the F major chord. This creates a gentle and predictable feeling of tension and release. The more I listen to the chords the more I feel lulled into a kind of meditative relaxation. At this stage of my analysis I am no longer certain that this song sounds sexy to me at all. It seems darker now; more melancholy, aimless, and unresolved. There are times when "All The Time" sounds more depressing than arousing. In these cases I feel ambivalent—sex seems irrelevant.

If *reading against the grain* means going against the dominant interpretation of a given text, *listening against the grain* means hearing a song in this same unconventional way. When I listen to "All The Time" over and over, I cannot help but listen against the grain because what I

[121] For further reflection on absent or emergent tonics in recent popular music, see Tagg 2014 and Spicer 2017.

bring to the song differs each time I listen. Even if I usually find it axiomatic that "All The Time" sounds sexy, I sometimes find it unsexy.

Over the course of listening to "All The Time" again and again, I grapple with the question of whether it *sounds* sexy, *makes me feel sexy*, *represents sexiness*, all of the above, or something else. These are classic music theoretical problems: 1) whether musical emotion is *represented* by the music or *evoked* in the listener, and 2) the differences between a first and second listen (or a thousandth listen). The "representation vs. arousal" dichotomy raises a host of questions about the nature of emotional expression through music, similar to those that Darwin and Spencer were grappling with. Is musical emotion similar to or different from ordinary emotion? Is music-listening a cognitive enterprise or is it more in the body? Does emotion "come from" the music or do I supply all of the meaning myself? I sense I am losing track of sexuality in my analysis. The sexiness of "All The Time" now seems a bit to the side. The more closely I analyze the gentle movements between e minor and F major, the less eroticism I feel.

The musical eroticism of "All The Time" seems to be in multiple places at once, initiated simultaneously by my own listening tendencies and by the music itself, and sometimes not there at all. This semiotic ambiguity recalls a feature of Spencerian psychology that Rei Terada might have called "the mystery of emotive cause" (2001, 99). It captures an abstruseness that is common to musically emotional experiences, such as those that edge onto erotic territory. And it is partially what draws me to wonder how others hear this song differently than I do.

Collaborative Readings of Sexuality and Ambiguity in "All The Time"

One place where listeners go to share information about their experiences listening to "All The Time" is to the comment sections of YouTube videos. There, the sexiness of "All The

Time" is the main topic of conversation. I recommend readers take a pause from my analysis to listen to this song on YouTube and read some of the comments. Even a quick scan will find a significant portion of commenters speaking directly to the track's explicit content. They talk about sexual experiences they have had or would like to have, mention lovers and crushes, and write about aspects of the song that they find sexy. Self-pleasure is a common theme. Many reflect on how sexually explicit the comment section itself is:

> **"I'm just here for the comments.."** (Anna shagrath 2018).[122]
> **"these comments are so awesome lmao"** (Hailey King 2017).
> **"I was scrolling down trough the comments reading how everyone's inner hoe came out i don't know why tho,then I listened to the song really closely and literally jaw dropped."** (Bobatea 2019).
> **"Dang all these people in the comments are freaky. I'm just here because the beat is amazing."** (Melanie Celaya 2018).
> **"You all nasty [2 laughing/crying emoji]"** (Terri Martin 2018).

To give a clearer portrait of prevalent themes in these comments,[123] I conducted some light quantitative analysis. The protocol for analysis is as follows. I randomly selected 100

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[122] A note about citation style: There is no standard practice for citing YouTube comments in Chicago Style. The Chicago Manual of Style provides guidelines for citing YouTube *videos* but not comments. I use APA guidelines for citing YouTube comments, with modifications drawn from Chicago Style. Specifically I choose to include the channel name and video duration. I place the text of each comment in boldface, in order to set them off from the main text visually.

[123] The comment section I focus on belongs to the most-watched upload of "All The Time" on YouTube as of June 19, 2019. This video was posted to the channel TGM DaPrince on March 9, 2013. As of May 4, 2019 it had been viewed about 38,300,000 times. It had been upvoted approximately 408,000 times and downvoted about 11,000 times. As of May 4, 2019 it had over 6,500 comments.

comments posted to this video[124] and I coded these comments by content, sorting them into the following categories:

(1) I am listening	
(a) I came here because of…	4
(b) I am listening on a certain date / in a certain year	26
(c) Who else is listening?	3
(2) Sexual content	
(a) Sexual innuendo (implicit sexual content)	9
(b) Graphic commentary (explicit sexual content)	39
(c) Mentions of a lover or crush	7
(3) Social parlaying and meta-reflection on the comment section	
(a) "This comment section is so dirty"	4
(b) Compliments/criticisms of other commenters	1
(4) Mentions of musical elements	
(a) mood, vibe, etc.	2
(b) tempo	1
(c) vocal style	3
(d) beat	1
(e) quotations of lyrics	9
(6) General commentary	
(a) I like this song	7
(b) other	2

More than half of these comments contain sexual content. About a third are simply meant to register their authors' presence on the comment roll. 16% mention musical elements or lyrics. A skim of available comments discovers frequent uses of the following words: Sexy, sex, catchy,

[124] I chose the first 100 comments posted on May 4, 2019. I did not include commented responses to other comments.

high, autotune, baby-making, pregnant, Magic Mike, dance, pole dance, stripper, strip club, porn, party, freak, freaky, lit, slaps, bangs, beat, fuck, mood, vibe. Some sample comments:

> **"this is the best sex song ever"** (ISAAC JAMES TORRES 2017).
> **"Best sex song ever !!!!!!"** (Celestdeanna Barrera 2019).
> **"Anddd I just got pregnant"** (Ashlee Marie 2019).
> **"Damn!!!!!! I wanna get somebody pregnant"** (james freeman 2018).
> **"It will make you into a freak lmao"** (Amanda Holbrook 2019).
> **"I heard this song from a porn video and now I love it <3"** (KingZade 2017).

Commenters regularly quote lyrics from the song.

> **"Early in the morning!"** (Keke Aiken 2019).
> **"In morning I think about you yeah"** (Meow Meow 2018).
> **"I put that magnum on like a GOLD [gold medal emoji] MEDAL"** (Darnell Williams 2019).

Commenters routinely describe this song as having a kind of agency over them. They explain that the music *makes them feel* a certain way. It *takes hold* of their bodies, *moves them* in time:

> **"omg does anyone else just become the most sexual person ever when this song comes on [hearteyes, sparkles, halo smiley]"** (Hadley Carter 2018).
> **"Who else is a different person when they listen to this song"** (Kya Sattler 2018).
> **"Started clappn and grinding"** (AMORETT Washington 2018).
> **"Ikd what it is about this song but this is my S**t. Its does something to my body on the inside!!!....."** (Dark& Lovely 2018).

> **"Why do I feel like stripping to this song?????"** (Lil Mae Foxx 2018).
> **"If i heard this song in public i'd start dancing sexy immediately, the music is just so sexy [2 heart-eyes emoji]"** (Jinan B 2019).

Some commenters compare "All The Time" to other songs or artists:

> **"Sounds like that russ song williy wonka"** (Taaliyah S 2019).
> **"Jeremih sounds like the weekend"** (Faith Decker 2018).
> **"is it me or does this song lowkey sound as "let me love you" by ariana grande ft. lil wayne"** (Jessica Vásquez 2018).
> **"Doesn't this song sound like let me love you by Ariana Grande."** (Matthew Ryan 2018).[125]

Sometimes commenters mention details of the song's sound and how they relate to its sexiness:

> **"It's a calm song but damn it brings out our inner wild side [flame emoji, five winking smiley face emojis]"** (Michelle Hatake 2018).
> **"Gives me chills"** (Daisies and Lillies 2019).

A few recommend slowing the song down even further to maximize its erotic effects.

> **"If youre in the mood, Put it on speed .75 and thank me later ;)"** (tesla rose 2019).
> **"Slow this song down to 0.75 and [screaming/squinting smiley emoji]!!"** (Jay Michelle 2019).

[125] Ariana Grande and Lil Wayne's "Let Me Love You" samples "All The Time."

But for the most part commenters seem satisfied to call the song sexy as a whole, and to stop there. A smaller number of commenters mention complicated feelings:

> **"Anyone else over here twerking in the bed ready to get your freak on, only to roll over to be alone."** (Bailey Hartman 2018).
> **"Who else just got rejected crying right now and listening to this"** (MIA BLEEP 2019).

And some do not find it sexy.

> **"…am i the only one that DOESN'T become a stripper when listening to this?"** (Marzia Arts 2018).
> **"this song is overrated bro"** (Daniel Wheeler 2018).
> **"this song used to legitimately scare me as a kid."** (Luigi Lito 2019).
> **"oh no I don't get down with this song I am a more a country girl sorry this is not my type I am not sure how I got it it's too much for me"** (love is hard to find who cares love is not real 2018).

Listening for Mood

Commenters use words like "vibe" or "mood" to describe the total experience of listening to "All The Time":

> **"this song put u inna mood [side eyes smiley, water spray, breath emoji]"** (mya burwell, 2019).
> **"this is a VIBE"** (Roselyn R.K 2019)
> **"This song makes me feel that vibee……"** (Dio Crespo 2018).

"Puts me in the mood every time. Damn I just wanna make love right now" (Tiffany Rouse 2018).

"Now this song will get you in one of your moods like fr [crying laughing, 100, sparkle heart emoji]" (Leetonya Hunter 2019).

"Nice song to get that mood going ASAP" (Steve English 2019).

"It's just something about this song i swear. Definitely a classic mood setter." (dphence 2018).

"this the type of song ii need to set the mood man i need a gf*smug face*" (ALONE4EVER_SAD 2018).

"I listen to this when I'm in my moods [drooling emoji]" (Catarina Gonzales 2018).

"2019 mood [light-skinned praise hands emoji]" (Cinthya Ibarra 2019).

"Mood…" (Sonnia Murray 2016).

I interpret these colloquial uses of the term "mood" as encapsulating the overall experience of listening, or the overall emotional tenor of the track. "Mood" represents listeners' efforts to abstract the total feeling of this piece of music. Notice in particular that idioms like "in a mood" and "such a mood" register in their syntax the singularity of "a mood" through the invocation of the determiner *a*. These are not moods-plural; the song evokes a unified mood. Speaking of a mood in this way dimly recalls notions of a classical work-concept, the nineteenth-century idea that a piece can be captured as a totality, spoken about as an object, and placed in an imaginary museum (Goehr 1992). But a phrase like "a mood" is meant to capture the musical work not just as a formal object but as an *emotional* object.

When YouTube commenters describe the mood of the piece, they are accomplishing a special kind of rhetorical work, reifying both music *and* emotion, while refusing to name exactly what "the mood" is. They say "mood" instead of *what the piece's mood is* because the fact that

the song "is a mood" is legible information for them. By drawing attention to the ways that mood can be a quality of listening, it is necessary to affirm that the emotional aspects of aesthetic experience are fundamentally historical and social. In "Reading for Mood" (2017), Jonathan Flatley responds critically to W. K. Wimsatt and Monroe Beardsley's essay on the "Affective Fallacy," where they warn that evaluating a work of art (in their case, a poem) in terms of the feelings it conjures rather than, say, its rhythm or word choice, "is a confusion between the poem and its *results* (what it *is* and what it *does*)" (1954, 21). For Flatley, "mood" is something that troubles the distinction between an artwork's form and its effects in a particularly illuminating way. He encourages us to move beyond our suspicions of "impressionism and relativism" that haunt readings of atmospheric things like mood (2017, 137). By accessing and reflecting on ways that a term like "mood" addresses itself to a particular collective of listeners, we gain a theory about those listeners, as well as about the historical terrain in which they find themselves.

I see YouTube music-listeners' uses of the word "mood" being comprised of their apprehensions of a constellation of emotive impressions, including but not limited to: 1) the music's capacity to *represent* a feeling, 2) the piece's evocations of *emotion-laden memories*, 3) the listener's own capacity to *feel* or *imitate* emotions posed by the piece, 4) the listener's experiences of feelings that have accompanied hearings of sounds like these before, i.e., *conditioning*, 5) the *physical impact* of acoustical signals on the listener's brain and body, and 6) the *real or imagined multisensory information* conjured alongside the piece, such as how the music sounds in conjunction with the way the performers look.[126] By tapping into all of these very different ways that music can induce emotion, the term sidesteps treatments of musical

[126] I borrow these six ways that music can induce emotion from Patrik Juslin and Daniel Vastfjall's paper "Emotional Responses to Music: The Need to Consider Underlying Mechanisms" (2008, 563-568).

emotion as simple cognitive appraisal ("this song sounds happy / makes make me feel happy"). In Jenefer Robinson's terms, musical moods are specifically produced by non-cognitive mechanisms (2008, 592). "Mood" as a quality of "All The Time" sometimes shares this notion with Robinson, but differs because it captures a colloquial sense of mood as *everything emotional* about the piece, including the impulse to describe it in language as "a mood."

This recalls conceptions of *the feeling of the whole work* proffered by Susanne K. Langer (her term for the phenomenon is "significant form," adapted from Clive Bell's aesthetic theory), Otto Baensch (Baensch partially inspired Langer's turn to significant form with his term "objective feeling"), William Empson (his word is also "mood"), Walter Benjamin ("aura"), Mikel Dufrenne ("atmosphere"), Steve Goodman ("vibe"), and Sianne Ngai (her concept of "tone" is drawn in part from Langer's "significant form"). Each of these concepts in some way addresses an artwork's all-encompassing impact on or attitude toward its audience.[127] I want to reflect briefly on Ngai's tone, which is closest to what I offer here with mood.

Ngai reworks Langer's concept of significant form through the lens of affect theory. Ngai sheds Langer's organicism but retains her dissatisfaction with analyses of art that limit themselves to assessments of emotional *responses* to art or to treatments of emotion supposedly *expressed* by the artist. In Ngai's demonstrative reading of Herman Melville's novel *The Confidence-Man,* she uses musical metaphors to investigate "tone," which is the artwork's "affective bearing, orientation, or 'set toward' its audience and world" (2005, 43). For Ngai, tone is the formal aspect that allows the emotional elements of reading to become significant to the listener's understanding of the art object (Ibid., 43). Her approach to "affect" reflects a Deleuzian

[127] Langer 1953. Langer takes the term 'significant form' from Bell 1914. Benjamin 1999, Dufrenne 1973, Empson 1989 (these are quoted and discussed in Ngai 2005). Baensch is quoted and discussed in Langer 1953, 19-23.

branch of thought about the nature of emotive life; in *A Thousand Plateaus* (1987 [1980]) Gilles Deleuze and Felix Guattari treat affect as non-conscious, nonsubjective, asignifying, abstract, and unqualified intensity. Teresa Brennan (2004) similarly emphasizes the interpersonal and contagious nature of affect. Following Silvan Tomkins (1995) in particular, Ngai too treats affect as distinct from but integrated with mechanisms like emotion, thought, drive, and motor function (2005, 53).[128] Rather than insist that tone inheres in the object itself, Ngai treats tone more like a process through which the work's formal features aggregate with emotion, thought, drive, and motor function, all co-assembled with and through affect. The primary takeaway here is that emotional aspects of musical experiences move dynamically between listener and music, between listeners, and between listens.

"All The Time" creates and is created by different moods for different people at different times. This subverts the "representation vs. arousal" dichotomy by vivifying a "shared but different" reality among listeners and in its across-listening dynamism. Furthermore, the ways that listeners talk about this song *as a mood* speak to a particularly musical way of being emotional about aesthetic experience. Music often acts upon us outside of or beyond our reflexive capacities (Thompson and Biddle 2013, 11) and terms like "mood" allow listeners to affirm these preconscious experiences in dialogue with others. In this way, we can speak about "All The Time" *as a mood* in a way that explicitly evokes its atmosphere of sex, without having to be too clear about what we are feeling. This peculiar blend of specificity and ambiguity is what allows listeners to affirm that this track exists on a spectrum of moods within and beyond

[128] Tomkins stresses that emotions are not simply located in a subject but move between subjects. Sara Ahmed explores how emotions move through objects, which "become sticky, or saturated with affect, as sites of personal and social tension" (2014, 11). See also: Grossberg 1992, Massumi 2002, Thompson & Biddle 2013.

"sexy." There is no clear evolutionary claim to be made here about how music can facilitate sexual reproduction. Rather, these musical-erotic experiences are valuable in and of themselves, as instances in the complex fabric of human sexuality and musicality.

Opportunities for Critical Engagement with Music as Sex

The Darwinian musical hypothesis has long been marginal to academic music theory, and to evolutionary studies more broadly. But its revitalization invites us back to foundational questions about the role of the body in music, as well as toward new ways of thinking about the fact of embodiment in musical experiences. A strict reading of the Darwinian musical hypothesis would suggest that music has the potential to sound erotic because it expresses sexual instinct, thereby affirming "the absolute value of reproductive futurism," to borrow Lee Edelman's pejorative phrase (2004, 3). My alternate reading of Darwin limits itself to his evocative equation of music with sex. By engaging positively with Darwinian evolutionary science in this chapter, I have explored musical-erotic terrain otherwise absent from music-evolutionary thought, while avoiding the narrow presumptions about music and sex that have limited its stricter interpretants.

In these concluding remarks, I want to reflect on recent turns to the body in music studies in order to contextualize the above analysis within recent scholarship. Doing so will help me make a final point about musical eroticism, or any kind of eroticism for that matter: it is not always a desirable goal.

Prior to the 1980s there was a tendency among academic music scholars to discount or denigrate the role of the body in music. Musical practices that were seen as closer to the body were excluded from academic research due to their associations with the young, exotic, feminine, or sexualized other. Playful and erotic activities were considered unworthy of serious study.

Judith Hanna explained that practices like social dancing were avoided in the academy because of a combination of "Puritan ethics, social stratification, concepts of masculinity and a sense of detachment from nonverbal behavior" (1987, 9). Ben Malbon pointed to the West's rationalizing impulse as one reason why research on musical activities like social dancing had long been scarce (1999). Scholars like Suzanne Cusick (1994), Marion Guck (1997), Vijay Iyer (2002), Susan McClary (1991), and Fred Maus (1993) described the absence of discussion of the body in academic music theory as a reflection of aesthetic ideologies that are modernist, masculinist, and white Eurocentric.

In the 1980s and 1990s, scholars sought to revive the study of embodied musical knowledges without treating them as primitive or unthinking. Musicological and music theoretical engagements with the body now span a wide range of topics and methodologies, from analyses of performances, to critical histories of listening subjects, to embodied phenomenologies.[129] Among music psychologists, studies of musical embodiment and musical space have boomed in the last few decades, leading to the publication of numerous books and articles, topic-specific conferences, and a special issues of journals like *Music Perception*.[130] Fisher and Lochhead's program of "analysis from the body" (2002) has become commonplace; and Suzanne Cusick's imagined embodied music theory (1994) has been realized.

These turns toward the body are concomitant with increased interest in the gendered and sexed aspects of musical experiences. One historic contribution therein is the collection

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[129] See Kozak 2015 for a review of recent scholarship on music and the body, as well as McMullen 2006 and collections edited by Bloechel, Lowe & Kallberg (2015) and Jensen-Moulton, Straus & Lerner (2015).

[130] The beginnings of a bibliography on the body in music cognition might include Godoy & Leman 2010, Leman 2007, Naveda & Leman 2010, Phillips-Silver & Trainor 2007, Stevens & McKechnie 2000, Toiviainen, Luck & Thompson 2009a, Toiviainen, Luck & Thompson 2009b. The special issue of *Music Perception* is Volume 28: Spatiotemporal Music Cognition (2010).

Queering the Pitch, edited by Philip Brett, Elizabeth Wood, and Gary C. Thomas, and first published in 1994. In Brett's essay therein, he gestures briefly toward a long history of philosophical reflection on music's power to "ravish" the soul. "A study of this metaphor is long overdue," Brett notes (Ibid., 10-12). I have picked up the thread where Brett left it off by extending Darwin's analogy between music and sex in an explicitly queer way.

To this same end, I also want to think with Suzanne Cusick's research on the pleasurable and the painful dimensions of musical life. Cusick has given us powerful conceptual tools for conceiving of music as a realm of erotic pleasure *and* a realm of violence. In Cusick's essay "On A Lesbian Relationships With Music," she reflects on the imbrication of her identity as a lesbian, on the one hand, and her identity as a musician on the other, in order to theorize their radical imbrication:

> If sex is free of the association with reproduction enforced by the so-called phallic economy (and it is remember, exactly so for people called homosexual, as it has become in the last thirty years for people called heterosexual who practice contraception), if it is then *only* (only!) a means of negotiating power and intimacy through the circulation of pleasure, what's to prevent music from *being* sex, and thus an ancient, half-sanctioned form of escape from the constraints of the phallic economy? (2012 [1991], 78-79)

Through an analogy between lesbianism and music-listening, Cusick elaborated a critical account of music as erotic power beyond patriarchal constraints. If hands can be sex organs, as they are for many, why not ears? Why not hips that sway to the beat? Why not the chills I feel when I listen? Cusick's imaginative equation of music with sex offers a crucial conceptual

disruption to heteronormative assumptions about the nature of musical eroticism. In the process of describing the use of the hands to arouse pleasure, Cusick implicitly invokes ways that engagements with music too can be a form of sex. She innovates a listening attitude: "the art of being music's beloved" (Ibid., 74).[131]

In her reflections on lesbian relationships with music, Cusick specifically encourages others to move beyond any anxieties they might have about music's erotic force: "I am driven, always and everywhere to get people to associate pleasure with joy instead of with danger and guilt" (Ibid., 75). But Cusick is also the music scholar who has done the most to demonstrate music's power to evoke pain and suffering. She has warned us that music can be a weapon of war (2008, 2013). In the aftermath of Cusick's work on sonic terrorism, it is instructive to return to her original injunction: "If music isn't [itself] sexuality, for most of us it is psychically right next door" (2012 [1991], 71). This is where I want to pick things up.

Scholars like William Cheng have shown us that when music is essentialized as a thing that everyone wants and needs, its destructive potentials easily go unscrutinized (2016). Sex too invites closer examination whenever it is portrayed as automatically *good*, and *good for us*. The idea of sex's inherent goodness under late-capitalist heteropatriarchy is the target of critique by author C.E. in the radical manifesto "Undoing Sex" (2012). C.E. cites the oppressive corporeal realities of sex as the most obvious examples of the badness of sex, and reason enough to push back against a compulsory sexual optimism, that is, the idea that sex is always already a force of good:

[131] Marion Guck later expanded on Cusick's account of music listening as sexuality by conducting an analysis of a beloved piece of music and what it "does to [her]" (1996, 22).

> … for all that such optimism may aspire to, it exists seamlessly with the brutal realities of gendered life. Rape goes on unabated; the lives of so many remain consumed in domestic and reproductive labor… If it was once radical and marginal to assert an essential, or simply available, goodness to sex, it is now central, institutional. Far from the domain of some radical set, it is at once an ideology of patriarchy and of the majority of its opponents, a disparate, heterogeneous collection of discourses united in common aim. It is the optimism that insistently, cruelly returns us to the work of fucking. (2012, 16)

The point here is not to wage a prohibition on sex but rather to discount the degree to which sex can be *inherently* positive or pleasurable. Sexuality is not just a pre-existing fact of the body, but something brought into existence through elaborate and complex mechanisms of culture and sociality. Because of its eroticism, music too has the power to do harm; music can be sexual violence.

One unfortunate outcome of the "music as sex" equation is the one suggested by strict readings of the Darwinian musical hypothesis. If we treat musical judgments as unmediated indications of reproductive fitness, then any time any individual loves a piece of music their love can be understood as expressing sexual desire and procreative instinct. If sexuality is the human essence, consent can be seen as predetermined or unimportant. This is not a musical-erotic world I want to live in. Like C.E., I insist: *"If there is something of a species-being that remains in me, it seems irretrievably lost"* (2012, 31).

My effort in this chapter has been to retrieve Darwin's sense of a sexual dimension for music and a musical dimension for sex, without recourse to biological essentialisms, and without passing over specific lived experiences of musical sexuality. My post-Darwinian foray into musical eroticism is only one part of a celebration of the full spectrum of ways that eroticism that

can be experienced in relation with music. It is also a warning. If we limit music's sexuality to strictly reproductive impulses, we lose the chance to reflect on the diverse ways that music and sex are constructed and construed, including constructions that could be different.

CHAPTER EIGHT

Edmund Gurney's Darwinian Music Formalism

> [I]t is well worth noting that at every stage which comes under our observation, Music seems capable of stirring up the strongest excitement that a being who musically typifies that stage can experience. This enjoyment to the utmost of the best that can be got is exemplified equally in the case of singing-birds, and of the gibbon, moved with rapture at his own performance of the chromatic scale, and of the savage repeating over for hours his few monotonous strains and maddened by the rhythmic beat of the drum, and of the ancient Greek spellbound by performances for the like of which we should probably tell a street-performer to pass on, and of a circle of Arabs sobbing and laughing by turns in ecstasies of passion at the sound of their native melodies, and of the English child to whom some simple tune of Mozart's reveals the unguessed springs of musical feeling, or of the adult in his loftiest communings with the most inspired utterances of Beethoven. (Gurney 1880, 315)

This final chapter critically examines the evolutionary music theory of Victorian music theorist and paranormal psychologist Edmund Gurney. Like Spencer's and Darwin's music-evolutionary ideas, Gurney's theory serves as an example of what Charles Mills calls "ideal theory-as idealized-model," that is, a representation of what Gurney believes reality *should* be like that is problematically based in the ideals of a specific culture or group (2005, 166). In Gurney's case, he generalizes about the ideal nature of human cognition by elevating and naturalizing ideals associated with a Western classical tradition, such as the primacy of pitch over rhythm and the proverbial superiority of Western bourgeois art music over non-Western

musical traditions.[132] While Mills is primarily concerned with instances of *moral theory* as ideal theory, Gurney's theory (like Spencer's or Darwin's) serves as a clear example of *music evolutionism* as ideal theory.

Gurney primarily sought to explain the forms and functions of music perception from a scientific perspective, and secondarily to explain the special sense of enjoyment that is afforded by listening to "impressive" music (music with a powerful emotional effect). He drew explicitly on Darwin's theory that music's origins are in sexual selection, developing them into a unique brand of music formalism. What is unique about his formalism is twofold: 1) its incorporation of Darwinian evolutionary theory and 2) its treatment of emotion as "inside" the musical work. Quoting Darwin's *Descent of Man*, he writes:

> From its employment 'during the season of courtship, when animals of all kinds are excited by the strongest passions,' what was primarily a simple ultimate pleasure which the organism was adapted to receive, might well become in time capable of opening the floodgates to mighty emotions, which, by the very extent to which they baffle analysis, might lead us to suspect their connection with the earliest and most universal of instincts. (1880, 121)

By taking up Darwin's evolutionary frame, Gurney offered an idealized account of how music perception works, as well as an accompanying set of formalist analytical tools for reflecting on one's own listening experiences. For Gurney, when a listener hears "impressive" music, they are inspired into a state of innate emotionality that reflects primal scenes of erotic courtship. By his

[132] Although Mills' focus is on problematic instances of ideal theory ("ideal-as-model") in ethics, he notes that such instances are "not at all peculiar to ethics, but can be found in other branches of philosophy, and is indeed shared more generally (if not usually in quite the same way) with both natural and social science" (2005, 166).

account, music can be called impressive when it inspires a distinct kind of feeling, that is, when it recalls a "simple ultimate pleasure" (Ibid., 121). Unlike contemporary stereotypes about music formalism as cold, emotionless treatments of musical structure, Gurney treats emotion as a quality of musical sound.

Gurney's evolutionary theory of music can be interrogated as an instance of ideal theory in that he develops an account of music perception that privileges the listening practices and aesthetic preferences associated with a specific musical tradition, while claiming to model the nature of "music perception" writ large. "What distinguishes ideal theory is the reliance on idealization to the exclusion, or at least marginalization, of the actual," Mills writes (Ibid., 168). Gurney's evolutionary music theory is a clear example of what Mills terms "idealized capacities" in that it positions certain ways of listening as natural and ideal, while implicitly treating other listening capacities as disabled.

At the same time, Gurney's account represents an interesting development within continental aesthetic theory, specifically with its Darwinian brand of music formalism. By drawing on the Darwinian musical hypothesis, Gurney argues that music arouses a distinctly aesthetic emotionality that dimly recalls primal scenes of courtship and domination. No specific knowledge of music is required to appreciate music in this aesthetic way; one need only attend to the musical surface. By Gurney's account, "pleasure in the whole has no meaning except as expressing the sum of our enjoyments from moment to moment" (1880, 214). Thus, judging the quality of a piece of music by its total structure "involves a contradiction in terms—to enjoy something the essence of which is a *succession* of impressions by a *simultaneous* review of all the impressions" (1880, 214-215). In this way, Gurney departs from views of musical quality that rely on the "proper" arrangement of parts into an idealized whole. A pleasing musical

surface is all that is required to make a piece of music impressive, and only the individual listener is capable of determining what is pleasing to them—there is no objectively "good" music.[133]

On the one hand, Gurney's account is liberatory in the way it places power in the hands of the individual listener to assess what constitutes good music *for them*. On the other hand, the broader apparatus that Gurney constructs privileges the kinds of listening practices he himself is most familiar with. In pointing out both the productive and the oppressive aspects of Gurney's evolutionary music theory, I adopt two lines of questioning, one critical and one historical. My critical line of questioning focalizes his tendency toward ideal theory. My historical line of questioning explores his place in nineteenth-century continental aesthetics and asks what relevance his music formalism continues to hold, if any.

Gurnian Evolutionary Music Theory as Ideal Theory

With *The Power of Sound*, Gurney promised a rigorous treatment of music through an interdisciplinary lens comprised of acoustics, physiology, psychology, and Darwinian evolutionary theory. The first sentence of this text captures its ambition and density:

[133] My critical engagement with Gurney's music theory is indebted to earlier readings by Jerrold Levinson (1997), Rollo Myers (1972), and Malcolm Budd (1985). Levinson's retrieval of Gurney is constructive; his *Music in the Moment* develops a Gurnian theory of music perception that highlights the ways that listeners, regardless of skill level or experience, derive enjoyment simply from listening closely to the moment-to-moment unfolding of musical forms—a "concatenationist" listening praxis (1997, 13-21). Myers and Budd are more critical. Myers finds Gurney's whole enterprise less scientific than Gurney insists. Budd's main problem with Gurney is his tendency to separate musical emotion from non-musical emotion, and aesthetic modes of listening from non-aesthetic ones.

> It is now generally admitted that our organs of special sense, the channels by which we keep up our constant and various intercourse with what we call the external world, have been formed in past ages by gradual processes in correspondence with stimuli which that external world supplied; and that as the physical organs themselves are the highly modified descendants of undifferentiated and comparatively simple tissues, so the embryonic stage of evolution, by something analogous to those modes of feeling which we find in ourselves to be the simplest, the least differentiated, and the most crudely suggestive of actual bodily affection. (Gurney 1880, 1)

With this muscular description, Gurney introduces his evolutionary account of aesthetic perception, which is centered on the emotional affordances of the so-called higher senses (vision and hearing). Having deemed prior metaphysical accounts of musical aesthetics to be too speculative, Gurney offered what he saw as a rare scientific treatment of music and its effects. Like Herman von Helmholtz in Germany, he established a physiological basis for musical expression.[134] Like Darwin, he treated the meanings of musical experiences as functions of their place in biological life. His work amounts to what Mills has termed an "idealized cognitive sphere" (2005, 169) for the realm of music perception, meaning he is more interested in theorizing a unified mode of aesthetic perception than he is in exploring actual experiences of listeners in the world.

At the same time, Gurney tries to account for listener difference with his concept of "impressive" music. For Gurney, listening to one's favorite music arouses a special aesthetic mode of feeling, distinct from the feelings associated with everyday life. This special aesthetic mode of feeling defines the experience of impressive music. Note the distinction he makes

[134] Gurney mentions that he and Helmholtz differ in their approaches to aesthetics (1880, vi).

between music as *impressive* and music as *expressive*. Whereas the former designates an ineffable state of arousal, the latter designates the "means of expression, of creating in us a consciousness of images, or of ideas, or of feelings, which are known to us in regions outside Music" (1880, 312). In other words, the *impressive* nature of music comes down to a personal, ineffable experience of primal pleasure, while the *expressive* nature of music refers to representations of things we experience in other parts of our lives, such as strength, humor, romance, vigor, simplicity, or melancholy (Ibid., 312-348). Because expressive music is generalizable and impressive music is personal, he treats the latter as unanalyzable. Closely analyzing Gurney's treatment of the ineffability of impressive music can help us understand why it functions so insidiously as ideal theory. Rather than attempt to explore the ways that music perception may actually differ between listeners or populations, Gurney sweeps all differences together under the umbrella of ineffability.[135]

But before we turn to the more challenging aspects of Gurney's idealized account of music perception, let us begin with the basics. In *The Power of Sound*, the principle element of music is melodic detail, rather than large-scale form—Gurney appears to see this as the only relevant dichotomy, thereby continuing a long tradition in the West of denigrating musical elements like rhythm, timbre, and performance style. Gurney writes, "In Music the notion of a larger and *more* essential design, in reference to which shorter individual strains are *details* in the sense of being *less* essential, has no applications. The scheme has no value apart from the bits" (1880, 216). For Gurney, these "bits" are successions of tones in a specific temporal arrangement. Although Gurney sees melody as the principle musical element, rhythm and

[135] For an extended philosophical engagement with concepts of ineffability in music, see Gallope 2017.

melody are inseparably united in his account of melodic form. He "proves" this by presenting a series of familiar melodies with their rhythms altered, pointing out that no reader would mistake these recomposed melodies for their more famous originals.

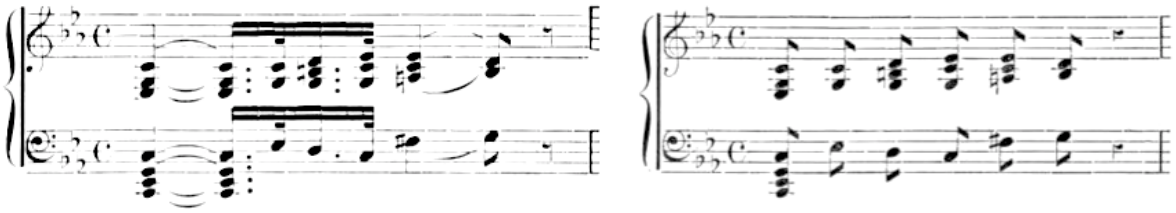

Figure 8.1: *The primary theme of Beethoven's "Pathetique" sonata (left) and Gurney's recomposition of it (right) (1880, 152)*

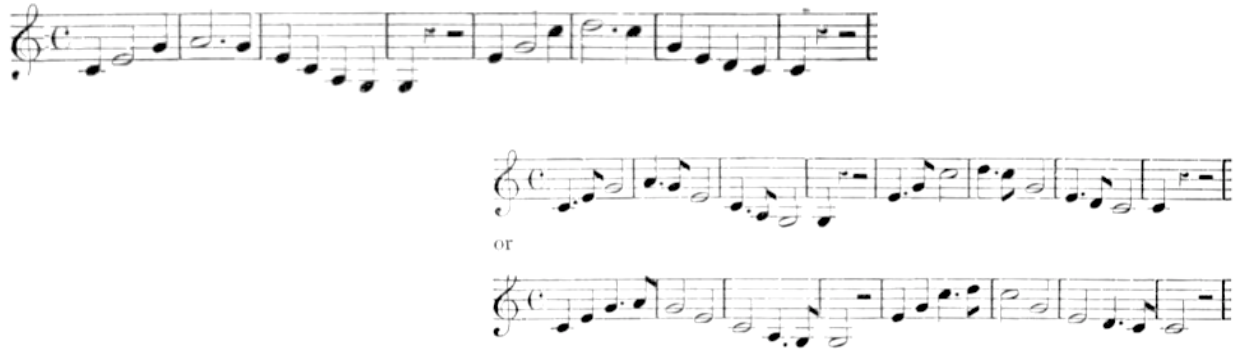

Figure 8.2: *The theme of the Leonora overture (top) Gurney's two recompositions of it (bottom) (1880, 152)*

Gurney recomposes a series of well-known musical examples, trading slow rhythms for quick and lively ones, and vice versa. For instance, "few would recognize in this wretched jig… the fascinating opening of the rondo in G major concerto" (Ibid., 153).

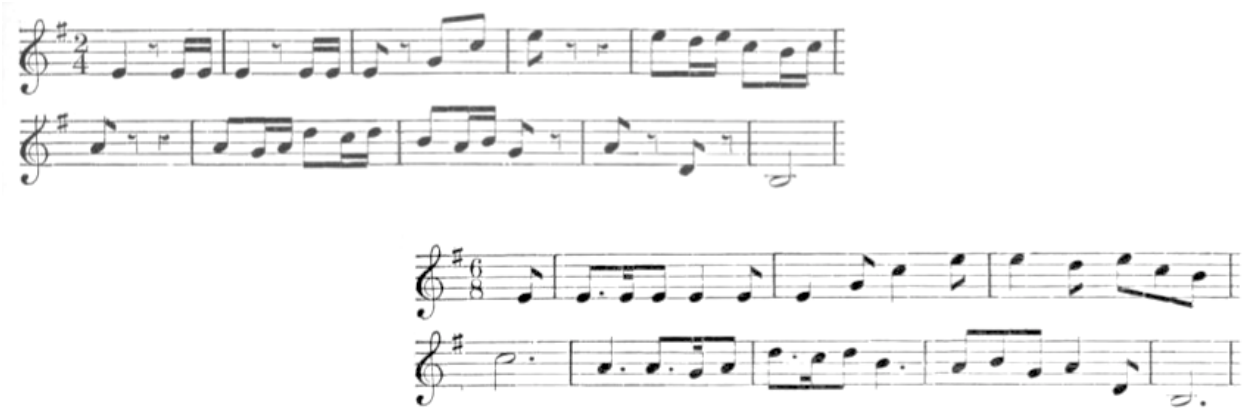

Figure 8.3: *The opening of Beethoven's Piano Concerto No. 4 in G major, Mvt. III (top) and Gurney's recomposition of if (bottom) (1880, 153)*

In another sample recomposition, he replaces a 3/4 time signature with 6/8.

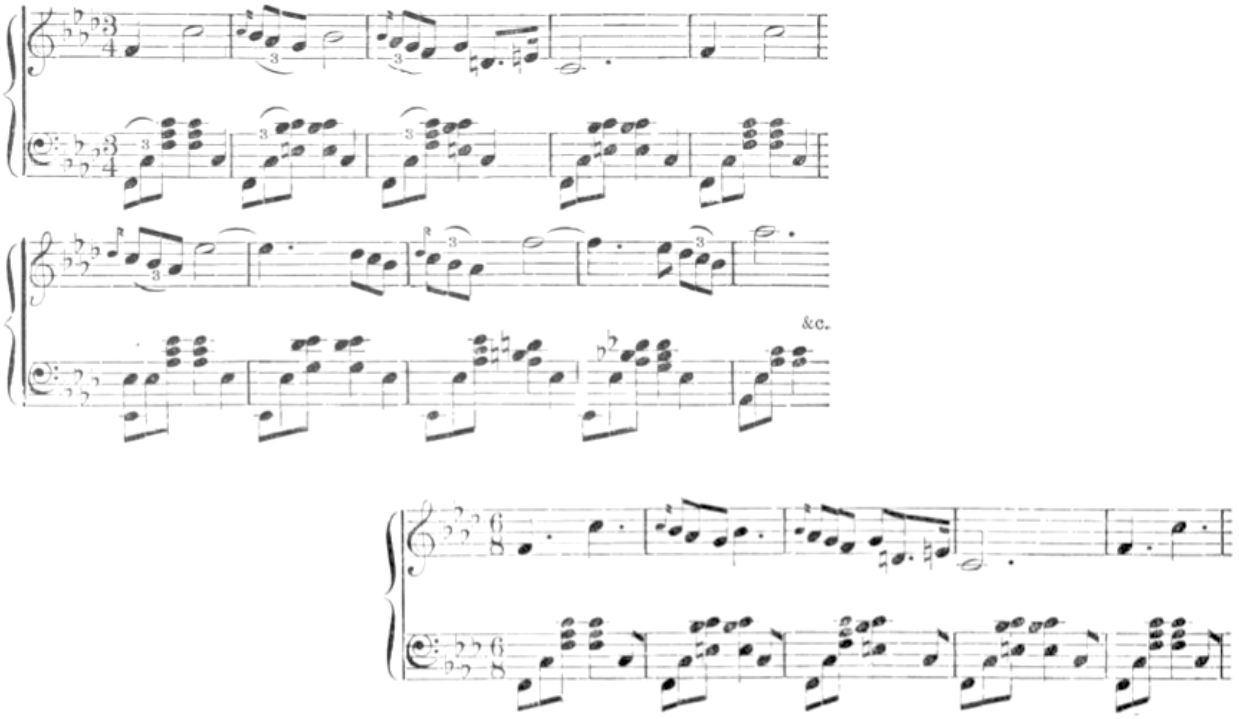

Figure 8.4: *The opening of Barcarole by Rubinstein (top) and Gurney's recomposition of it into 6/8 time (bottom) (1880, 154)*

Gurney means for these examples to demonstrate the importance of rhythm for the apprehension of impressive music. He explains that musical pleasure is never ascribed solely to the apprehension of a concatenation of pitches:

> For all vivid pleasure, for any individual and possessing motive of whatever sort, this definiteness of time is (save in the most exceptional cases) as truly essential as variety of pitch; it is present in nine hundred and ninety-nine parts out of a thousand of the Music which on any given day gives delight to the human race; and without it a prolonged succession of the most beautiful sounds is no more melody than a block of Parian marble is a statue. (Ibid., 155)

In this sense Gurney goes against thinkers like Richard Wagner, whom Gurney insists "shows again and again in his writings how little he recognizes the deeply-seated nature and artistic place of the rhythmic impulse" (Ibid., 159). And yet Gurney himself does not consider whether rhythmic detail might be more salient than pitch. For instance, he does not reverse the exercise by altering the pitches in a well-known melody and retaining its rhythms.

Gurney explains that when a listener experiences a given melodic form as impressive, they are responding to the ways that a particular combination of melody and rhythm yields a special kind of embodied impulse, which he terms "Ideal Motion." He writes, "Melodic form and the motion in question are aspects of the same phenomenon; and no confusion need attend the use of the two sets of terms, as long as it is recognised that our sense of the characteristics of melodic forms cannot be abstracted from the continuous process by which alone we perceive them, or rather which constitutes our perception of them" (Ibid., 165). Given that his work serves as an example of Mill's account of ideal theory, is ironic that Gurney distinguishes his use of the

term “ideal” from a painterly sense of idealization. He insists that his usage refers to the Greek sense of *idea*, “ideal as yielding a *form*” (Ibid., 165), which thus “lends itself to terms of physical motion” (Ibid., 166). He writes,

> There is one characteristic of melody which attention to its aspect as motion brings out with special clearness; and that is our sense of entire oneness with it, of its being as it were a mode of our own life. We feel in it, indeed, an objective character, inasmuch as we instinctively recognise that it has for others the same permanent possibilities of impression as for ourselves; but our sense of it nevertheless is not of an external presentation, but of something evolved within ourselves by a special activity of our own. (Ibid., 166).

Gurney sees Ideal Motion as “essentially indescribable” (Ibid., 165). Although Ideal Motion is a universal category of musical experience, each listener will only experience it when listening to certain melodies—those they find uniquely impressive.

Gurney argues that what is special about impressive music is that it makes no reference to things beyond itself—it is an entirely “aesthetic” form of pleasure. In order to justify the psycho-physiological distinction between aesthetic and non-aesthetic forms of sensation, Gurney spends a great deal of time working through the basics of sensory perception, with reference to the leading theories of physiology. He devotes early chapters to establishing the terms of sense perceptions, the nature of “unformed sounds,” and the basic elements of a work of art. For Gurney, all bodily sensations are alike in kind, if not in degree—“the region of sensation which has aesthetic possibilities is also the region of variety of taste” (Ibid., 3)—but only those highly

specialized senses like sight and hearing are elevated to the level of aesthetic sensibility.[136] He ranks the senses in order from high to low: sight and hearing at the top, touch in the middle, smell and taste at the bottom (Ibid., 2-3). Although these senses are meaningfully differentiated from one another in his account, he is careful to point out ways that they each possess unique ways of mixing with the broader categories of Pain and Pleasure. Works of art, for instance, call the so-called higher senses into action in a special way.

In Gurney, works of art uniquely "*appeal to a sense*." "This they can only do by dint of *form*," he writes (Ibid., 49). Their appeal to the higher senses is a "direct appeal" rather than a "mere calling into activity" (Ibid., 49). Music appeals directly to the emotions in part by recalling the motions needed to produce those sounds: "Sound is the result of motion, usually of visible motion, and even when the same series of sounds is repeated and is familiar to us, we still are conscious of its dependence on movements in its source, movements which lay within the option of ourselves or of another to make or not to make" (Ibid., 13). When we feel that a piece of music has risen to the level of Ideal Motion, it evokes a special form of pleasure:

> Pleasure, in a distinct and positive form, appears on the scene, and also where varieties and modifications of likes and dislikes become prominent facts; and in these more differentiated regions we begin to be able to mark off certain feelings and sets of feelings by the word *aesthetic*, and to reason or dogmatise about higher and lower and more or less cultivated tastes. (Ibid., 3)

[136] Gurney hedges a bit regarding the aesthetic potentials of touch. He eludes to a blind boy who "found it the height of luxury to stroke velvet" (1880, 3, fn. 1). He similarly mentions that many "lower" animals differ from humans in their variety of touch organs; "but whether this involves superior specialisation and variety in their tactile sensations we cannot tell" (1880, 3, fn. 1).

This pleasure itself is an aesthetic form of pleasure, available only to the higher senses.

Gurney's Application of the Darwinian Musical Hypothesis

Gurney introduces the Darwinian aspect of his thinking in the opening chapter ("The Higher Senses") where he discusses the eye's sensitivity to colors. He next turns to Darwin in the chapter "Abstract Form as Addressed to the Eye," to explain the impressive nature of architecture, which at times "may rival even that of Nature's vaster handiwork" (1880, 75). Gurney notes that Darwin suggested that the "sense of sublimity excited by a grand cathedral may have some connection with the dim feelings of terror and superstition, experienced by our savage ancestors when they entered a great cavern or gloomy forest" (Ibid., 75). Gurney emphasizes that the impressive nature of these architectural wonders is not merely a product of their size, detail, weight, or other formal qualities. Rather, the emotional aspect of experiencing the work is also paramount. He writes, "a peculiar emotional force profoundly affect[s] the whole nature of our admiration and delight" (Ibid., 76).

It is in Gurney's chapter "Association" that he delves most deeply into the Darwinian musical hypothesis. "Association" is Gurney's term for the connection between an object's form and the pleasure we take in it. Association is "the main source of the pleasurable feeling"; it is the special ability to combine past experiences of pleasure with the formal features of a given aesthetic object. Gurney explains that this special aesthetic form of association is often confused with the more general category of "habit" (Ibid., 113). While associations often resemble habits, specifically aesthetic forms of association require a measure of "self-consciousness" and are notably exclusive to the human species:

> The sort of habit, on the one hand, which is truly associational in nature, involves ideal elements and a large amount of self-consciousness; for the enjoyment in its case is not merely a faint mental revivification of the various events and feelings which have stood out as enjoyable on a background of the general sensuous impression, colour or sound, or whatever it may be, but seems to involve in varying degrees a much more abstract and *recherché* element, a vague suffusive conception of existence as on the whole good. It follows that this latter sort of effect must be a matter of very late and refined development; for we certainly do not conceive brutes to have any idea of existence as a whole, or any suffusive sense of enjoyment. (1880, 114).

Aesthetic association is, for Gurney, an exclusively human trait, requiring as it does an appropriate amount of "self-consciousness" that "brutes" appear to lack. This implies that anyone who does not experience the impressiveness of music is somehow a brute, less than human. Darwin's ideas are relevant here because they help Gurney to account for the development of the ability to discern differences in aesthetic forms. By Darwin's account, learning what excites the senses of others was a crucial element in the struggle for survival. Gurney sees it as a given that there are no objectively beautiful forms; rather the creature must develop sensitivity to *others'* experiences of pleasure through association. This is especially important in courtship displays. Needing to announce one's fitness in an active way, sexual rivals used their voices. Gurney writes,

> A mode of such active display is provided in the *voice*: and the fact, noticed by Mr. Darwin, that almost all male animals use their voices more under the influence of sexual emotion than in any other circumstances, leads up naturally to his important theory as to the origin of vocal, and so of musical, phenomena…

> Mr. Darwin suggests as probable that the frequent use of the voice under the strong excitement of love, jealousy, and rage, continued during many generations, may at last have produced an inherited effect on the vocal organs… So that, apart from any pleasurable abilities, we might expect that any voluntary production of striking sound, especially by a single individual, would reap the benefit of the exciting emotions with which in past ages such a mode of manifestation has been perpetually connected. (Ibid., 116-117).

In this way, music arouses pleasure through its "association" with earlier forms of embodied passion, aroused in primal scenes of erotic courtship. This arouses the "indescribable and infinitely deeper emotional effect of certain ordered successions of sounds" that distinguishes aesthetic experiences with music from more ordinary listening experiences (Ibid., 121).

Although Gurney's account of musical pleasure is explicitly Darwinian, his thinking differs from Darwin's in significant ways. For instance, Gurney argues that the higher senses are unlike other realms of sensation because they do not directly contribute to the survival of the organism. "[T]he pleasures of sight and hearing are unconnected with any directly life-serving function, and that in the outlet to nervous force which they give without being clogged by prosaic utilitarian aims, they partake of the nature of play," he writes (1880, 7). Absent the burden of "life-serving functions," vision and hearing are free to indulge in playful activities. Darwin's theory, as we have seen, is adaptationist, in that he argues that music's purpose was *specifically* life-serving, due to its direct participation in the courtship rituals that lead to sexual reproduction. Gurney's account has a disturbing moral imperative. If the ability to discern aesthetic from non-aesthetic experiences maps with the distinction between the sophisticate and

the brute, the ability to experience music as impressive becomes a litmus test for one's more general cognitive capacity.

For Gurney, the value of a given musical work can be determined by the amount of pleasure it arouses. "The prime characteristic of Music," Gurney writes, "the *alpha* and *omega* of its essential effect [is] its perpetual production in us of an emotional excitement of a very intense kind, which yet cannot be defined under any known head of emotion" (1880, 120). This implies a method for assessing the quality of musical works. "[T]he word *bad* may be fairly used (absolutely or relatively) of music (1) which gives no pleasure, (2) which gives extremely slight and transitory pleasure, (3) which gives pleasure superior in these respects, but shown by experience to be incompatible with more deep and lasting pleasure given by other music" (1880, 530). Bad music is whatever one fails to find pleasing, or finds only slightly so. Gurney does not insist that a given piece of music can be objectively bad. Badness is an expression of personal preference. Listeners need not possess any special traits or expertise in order to assess the value of a given musical work. They need only a passive emotional sense of abstract proportion. For this reason, musical pleasure is not analyzable in itself, in Gurney's account. "Music is perpetually felt as strongly emotional while defying all attempts to analyse the experience or to define it even in the most general way in terms of definite emotions" (1880, 316). While this apparent admittance of the individuality of listening experience may read as empowering to the listener, in the context of Gurney's broader account of music perception it ultimately reinforces his idealization of certain Western bourgeois listening practices. Gurney's spares no energy for the ways that listeners may differ in their experiences with music. Rather he treats their differences as ultimately ineffable.

To further clarify the terms of Gurnian musical aesthetics, compare his evolutionary theory of musical pleasure to Spencer's theory of emotive expression. They differ in three key ways. (1) First, Gurney works to distinguish musical emotion from all other forms of emotion (including emotions aroused by vision and the visual arts), whereas Spencer demonstrates a physio-psychological continuity to all emotional experience. (2) Second, Gurney does not treat music with the same ethical injunctions that Spencer does. Spencer lauded music as "the chief media of sympathy" (1857, 407), the art form that "more than any other, ministers to human welfare" (1857, 408). And he had very specific ideas about which musical styles were best suited for the cultivation of civilized sensibilities (recall his love of Meyerbeer). Gurney's discussion of "vulgar" music refers only to music that does not satisfy one's personal sense of please—in other words, music one does not personally find "impressive" (1880, 378).[137] (3) Third, Gurney—like Darwin—rejects Spencer's theory that music arises from impassioned speech.

Gurney explicitly criticized Spencer's ideas about music in an article entitled "On Some Disputed Points in Music" (1876) and again in *The Power of Sound* (1880, 476-497). Recall that Spencer identified five characteristics of song that distinguish it from emotional speech (loudness, timbre, pitch, interval distance, and rate of variation). Each of these five characteristics helps to highlight ways that song elaborates and intensifies the properties of language. For Gurney, none of these five characteristics is essential to song, nor are they different enough from speech to explain the kinds of direct connections between the two domains posited by Spencer. Gurney criticized Spencer for treating recitative as a middling stage between speech and song. If a greater degree of pitch variation constitutes a higher level of evolution in

[137] Budd's description of Gurney's music aesthetics: "Ethics and aesthetics are here two, not one" (1985, 181).

song, Gurney argues, then how can Spencer explain the fact that many recitatives actually display *less* pitch variation than speech? Spencer replies to this and other similar critiques thus:

> But Mr. Gurney overlooks the fact that while, in recitative, some traits of developed emotional utterance are not present, two of its traits are present. One is that greater resonance of tone, caused by greater contraction of the vocal chords, which distinguishes it from ordinary speech. The other is the relative elevation of pitch, or divergence from the medium tones of voice: a trait similarly implying greater strain of certain vocal muscles, resulting from stronger feeling. (Spencer 1890, 459-460)[138]

Spencer's and Gurney's disagreement highlights a key difference between the two regarding the ways they hear music as evocative of evolutionary processes. Spencer hears the style of music itself as evidence of evolutionary advance. Gurney is less concerned with specifying the literal sound of progress and more interested in describing general perceptual phenomena.

In Malcolm Budd's chapter "Sexual Emotion in Ideal Motion" (1985), he recounts the Darwinian influence in Gurney's musical aesthetics and critiques the various conceptual knots that Gurney gets himself into in his effort to prove Darwin right. "Gurney wished to make use of Darwin's theory to explain the characteristic pleasurable emotion, the distinctive but indefinable emotional excitement, of impressive music," Budd explains (1985, 57). In Budd's reconstruction of Gurney's aesthetics, music literally recalls the inarticulate sound of the voice during sexual arousal. Budd finds Gurney's aesthetics to be untenable due to its separation of aesthetic and nonaesthetic sense perceptions, writing, "the experience of a specifically musical emotion would

[138] Quoted in Kivy 1962, 322. See also 319-322 for further discussion.

not be secured by the existence of a specifically aesthetic manner of deriving pleasure from a musical work by attending to it in a certain way" (Ibid., 61-62).

It is not just Gurney's separation of aesthetic and non-aesthetic perception that Budd finds problematic. He also criticizes Gurney for being inconsistent in his descriptions of *how* music expresses emotion. At times Gurney claims that music is emotional when it *arouses* emotion in the listener. At other times he claims that music is emotional when it *represents* an emotion. Budd is right to find fault with Gurney for these reasons. But rather than rehash Budd's critique I would like to examine more closely what emotion *is* and *does* in Gurney's account, specifically how emotive ineffability is built into *The Power of Sound.* Examining the role of the ineffable in Gurney's work will help me explain more clearly what is interesting about his approach to formalism.

Gurney the Formalist

For Gurney, there is no unilateral criteria that can explain why a particular listener enjoys the music they do. Their taste is neither definable nor generalizable. This ineffable quality of musical pleasure is guaranteed by music's unique status among the arts. For Gurney, music's power to "express" extra-musical things is merely a metaphor. Music makes no recourse to the extra-musical world, since its forms and meanings are contained entirely within itself: "[T]o say what Music expresses except in music is essentially impossible" (1880, 125). This formalist position lends rhetorical force to Gurney's sense that musical pleasure is separate from everyday emotional experiences. The philosopher Peter Kivy famously aligned Gurnian aesthetics with the formalisms of critics like Eduard Hanslick and Clive Bell (1962, 320). "[T]he world of Beauty is

preeminently the world of Form" (Gurney 1880, 14). If Gurney's ideas amount to a Darwinian brand of music formalism, I want to parse this characterization slowly.

In the wake of New Musicological critiques, the term "formalism" tends to be associated with hegemonic accounts of idealized musical works, or with analytical programs that separate musical structures from their cultural contexts. Sometimes formalism is treated as a synonym for "music analysis," or for the even broader term "music theory." A tentative critique of formalism as music analysis was launched by Joseph Kerman in "A Profile for American Musicology" (1965), and then sharpened in his polemical essay "How We Got Into Analysis, and How to Get Out" (1985). Kerman initially argues: "Analysis seems too occupied with its own inner techniques, too fascinated by its own 'logic,' and too sorely tempted by its own private pedantries, to confront the work of art in its proper aesthetic terms" (1965, 65). In his later essay, the problem with music analysis is threefold: 1) it cleaves musical form from its socio-historical contexts, 2) it has overinvested itself in a privileged canon of mostly German composers, and 3) it problematically aspires to "the objective status and hence the authority of scientific inquiry" (1980, 313).

Gurney has been called a "formalist" or "purist" because he works to exclude the extra-musical from his analyses. In Kivy's description, Gurney is a formalist because he "attempts as much as possible to exclude 'life-values' from the work of art, emphasizing its formal self-contained character" (Kivy 1962, 320). To some this will read automatically as a criticism.[139] Consider again Joseph Kerman's critique of music analysis. "Analysis seems too occupied with its own inner techniques, too fascinated by its own 'logic,' and too sorely tempted by its own

[139] Kivy himself was a defender of formalism; see, for instance, his *Music Alone: Philosophical Reflections on the Purely Musical Experience* (1991). Carlo Caballero critiques Kivy's formalism in "Dancing Out of Formalism: On Peter Kivy's Theory and Its Limits" (2013).

private pedantries, to confront the work of art in its proper aesthetic terms" (1965, 65). Kerman's critique offers a useful access point for the types of anxieties that have recently led to what I term an anti-formalist attitude in music studies. If music analysis is deemed preoccupied with technique, fanatical about "masterworks" composed by a few German composer-geniuses, lifeless in its methodological investments, obsessed with frivolous details, and selfish in its avoidance of crucial realms of meaning, it is no wonder it has gained new controversy.[140] Patrick McCreless helpfully summarizes the state of the field:

> Briefly, what happened in North American musical scholarship of the late 1970's and 1980's was that many teachers of music theory found themselves ill-served by both the work of the American Society of University Composers and the American Musicological Society. Composers were interested in their own new music, and musicologists were interested in archival research, biography, and musical style, while theorists were interested in analyzing musical works *as* music. The establishment of the Society for Music Theory and of professional journals in music theory signaled the beginning of a vital period of theory and analysis in the academic musical community. Analytical publications flourished, with enormous interest in Schenkerian analysis of tonal works, set-theoretical and other formal methods of analysis for post-tonal works. All this set the stage for the revolt of the so-called New Musicologists of the late 1980's and the 1990's—musicologists who took music theory to task precisely for its formalism, for its studied exclusion of social, political, and historical meaning from its considerations. (2013, paragraph 1.14)

[140] "In music and the other arts, perhaps the most striking feature of formalism, in the 150 or so years of the word's existence, is the conflict and controversy that it inevitably stirs up" (McCreless 2013). A demonstrative exchange can be found in Joseph Kerman's polemical essay "How We Got Into Analysis, and How We Can Get out" (1980) and Kofi Agawu's "How We Got Out of Analysis, and How We Can Get Back In Again" (2004).

Gurney's aesthetic formalism differs meaningfully from the stereotyped formalisms that were the targets of New Musicological condemnation, but nevertheless has its own issues. Reviewing recent debates over music formalism will help me to sharpen my account of Gurney's Darwinian formalist account of musical pleasure. In what follows, I do not attempt to draft a complete account of formalism's history, theories, or practices, nor do I mount a defense of formalism. I instead outline the logic and current context of formalism in music studies in order to examine what Gurnian formalism might mean to music scholars in the present.

In "Formalism, Fair and Foul" (2013), McCreless offers a comparative study of formalisms, recounting six prominent examples of formalist paradigms. He tentatively offers the following super-definition: "*formalism* is the claim that the essence of any art resides in relationships of elements within an artistic work itself, not in relationships to anything outside the work" (3.2). A key question here, one that will later become relevant to my investigations of Gurney, is what constitutes the "outside" of a musical work. For some critics, formalism has an automatic hypocrisy because it fails to recognize that there is no outside-text. For others, formalism is the mistaken assumption that analyzing a piece of music's form is equal to unpacking its meanings. For still others, the problem with formalism lies in its emphasis on proverbially lifeless musical forms over human meaning. The anxiety here is that if music analysts are only interested in structure they are implicitly failing to engage with other, more important dimensions of musical experience. And if music is only form, it has no vitality, no life.

But for Gurney—"one of organicism's greatest exponents" (Zon 2017, 68)—musical sensation is directly tied to embodied life, and the category of emotion is said to occupy the *inside* of the work. Although someone like Suzanne Cusick might find fault with music formalisms that enact metaphors of a disembodied "mind-mind" game between composer and

listener (1994), in Gurney's account it is not paradoxical to treat music's embodied and emotional affordances as *essentially* musical and therefore inside the work. Because Gurney treats certain musical emotions (those associated with impressive music) as distinct from ordinary feelings and sensations, he is free to analyze these emotional and ineffable elements *as qualities of music*. This is significantly different from the cold, emotionless, science-aspirational accounts of formalism described by thinkers like Kerman or Taruskin. By capturing emotion as a kind of musical element—one that sometimes remains beyond the realm of analysis—Gurney helps us register a specific subtype of musical formalisms: those that include a concept of emotional ineffability as a musical element.

Anti-formalism is not limited to music studies; indeed it has tended to come in and out of fashion in the humanities more generally (see Marjorie Levinson's incisive account of "New Formalism" in literary studies [2007]). In the "Overture" to Lauren Berlant's *The Female Complaint* (2008), Berlant responds to readers who have read into her work "a decision to advance formalism over historicism," writing:

> Often, debates about formalism versus historicism locate politically good work in historical contextualization while casting formalism as merely a quietus or precious fantasy of the artwork's specialness or autonomy: but both sets of association underdescribe the dynamics of contextualization and exemplification that shape the analytic work a critical text can do. The question should not be *whether* or not formalism can advance the analysis of history or power, as a realist analytic can do, but whether or not it is possible *not* to be formalist. (2008, 265, emphasis in original).

Berlant prompts us to consider the ways that the forms of an object already act like contextualizing machines in the ways that they consolidate details from their own time and place. Roland Barthes too stressed the usefulness of formalism, if only critics could feel unafraid of it. "Less terrorized by the spectre of 'formalism,' historical criticism might have been less sterile; it would have understood that the specific study of forms does not in any way contradict the necessary principles of totality and History," Barthes writes (1972, 110-111). Berlant's and Barthes' injunctions can help us see why Gurney's sense that musical pleasure is entirely unique to the individual could actually be an indictment of historicism.

Any self-consciously formalist enterprise is arguably already a cultural and historical practice, grounded as it is in the epistemologies and techniques of its own place and social milieu, and driven as it is by the emotional and cultural investments of its practitioners. Although we may not like the history that Gurney gathers into his account of formalism (that is, his account of the history of music's place in sexual selection) he nevertheless is fulfilling the new musicological demand to be historical. Yet in anti-formalist critiques, there often is a dissociation that occurs between *form* and *meaning*, which leads to the sense that form itself cannot be seen as meaningful unless it is properly contextualized. James Currie identifies the logical fallacies implicit in this line of thinking: 1) If music only becomes demystified through contextualization, there can be no transhistorical claims, including no transhistorical claims about music's need to be defined by context. 2) If postmodern musicology can reject formalism for being an ideology of exclusion, its own indulgence in transhistorical claims about music must themselves be understood as ideological, used transparently to further a different kind of politics of exclusion (2012, x).

For Martin Scherzinger, formalism emphasizes the "self-referential aesthetic autonomy of music and its independence from other forms of social discourse" (2004, 252). Although Scherzinger is deeply concerned with the social and political issues raised by the New Musicology, he nevertheless questions the axiomatic subordination of the musical text beneath social context. Scherzinger argues that it is only possible to privilege context (or the musical work) as the end-all ground of musical meaning when context and musical work are oppositionally construed. "In this construal," he writes, "the dialectical relations between them dwindle and musical 'formalism' becomes falsely understood as… a 'self-identical' repressive practice" (2004, 254). Scherzinger demonstrates that Jameson's oft-cited adage, *always historicize,* is less straightforward than its six declamatory syllables reveal on their own:

> "Just as Fredric Jameson's call to 'Always historicize!' is menaced by his observation that history 'is inaccessible to us except in textual form, and... our approach to it and to the Real itself necessarily passes through its prior textualization' (1981, 35), so too is the rush to historicize (or socially contextualize) musicological inquiry substantially complicated by the fact that *historical and social content too is patterned by an aesthetic form*. In short, getting rid of formalism in music studies does not get rid of the problem of form" (2004, 254, my emphasis).

In other words, historical content itself has a form that must be read; historical-cultural meaning is only accessible through form. To borrow a joke from Eve Sedgwick, "What could have less to do with historicizing than the commanding atemporal verb 'always'?"[141] It is clear that

[141] This often-quoted witticism is from Sedwick's chapter "Paranoid Reading and Reparative Reading" in *Touching Feeling,* co-written with Adam Frank (2002, 125).

formalism and anti-formalism alike can devolve into de-politicized speech if they presume no political opposition to their claims. But this does not get Gurney's formalism off the hook.

Conclusions

For Gurney, musical experiences of pleasure cannot be reduced to specific musical features, such as relative pitch heights, or the amount of variation. But they can be partially explained by a deep historical account of human nature. This helps him to describe why he believes the pleasure associated with music listening is *ineffable* in the sense of being *unanalyzable*. This constitutes an interesting iteration of musical formalism, as something that examines "the music itself" but that refuses to reduce music analysis entirely to the elucidation of sonic forms. At the same time, it introduces a catch-all that allows Gurney to avoid theorizing anyone's listening experience but his own. That catch-all is the ineffability of musical pleasure, which comprises the core of his formalist account of music.

For present-day music scholars, formalism has come to signal an overassertion of structural meaning, which appears to automatically reinforce an illicit canon. For thinkers like Kerman and Taruskin, formalism implies a destabilization of the unspoken balance that music scholars are expected to strike when speaking about music. Formalism is often said to reinforce the "masterpiece status" of canonical works by "lavish[ing] its whole attention on the demonstration of inner coherence" (Kerman 1980, 313). But in Gurney's *The Power of Sound*, the sense of inner coherence is irrelevant. All that matters is the perceived impressiveness of the musical surface. The sense of what is impressive is specific to each individual listener and thus not generalizable. For Gurney *the most important aspect of music*—the pleasure an individual derives in listening—is not analyzable. But while Gurney may offer a take on formalism where

aspects of individual experience need not (or perhaps *should* not) be subject to scientific weighing and measuring, he nevertheless affirms the anxieties of anti-formalists. Gurney is a clear example of an evolutionary thinker who treats his own aesthetic preferences and experiences as natural laws. What makes his work particularly insidious is the way it leverages emotional ineffability. Instead of exploring ways that listening practices can differ between listeners, and between cultures, he collapses those differences into ineffability and thus avoids theorizing them directly. From there, he generalizes from his own listening practices, letting his own tastes stand in for the whole of human experience.

In reconstructing Gurney's evolutionary account of music perception, I have explored ways that his work stood out from the broader field of Victorian and continental music aesthetics. I have also pointed out ways that his ideas tend toward an ideal-as-idealized-model, in Mills' sense of prescribing how things *should* be. The consequences of this figuration are serious because Gurney is speaking at the evolutionary level, with an evolutionary degree of explanatory power. Like all evolutionary theories of music, his theory implicitly makes a case for *what music is*, as well as *who is capable of perceiving it in an advanced way*. In his cases, the socio-political consequences are dire. For those who do not experience music in the way that Gurney idealizes, the implication is not just that they are poor listeners but that they are less evolved.

CONCLUSIONS

Post-Darwinian Music Theory

In this dissertation I have explored how evolutionary theorists like Darwin, Spencer, and Gurney thought about music, and what role music played in their evolutionary theories. Secondarily I have used this history to contextualize and reflect upon the recent revival of evolutionary musicology. In this way, I have begun to explore a "post-Darwinian" impulse in music studies, that is, an impulse to (re-)incorporate evolutionary science into music studies. Close readers of this dissertation may wonder why I choose to say "post-Darwinian" instead of "post-Spencerian." I mentioned at the beginning of this dissertation that rather than call Spencer a "social Darwinist," it is more accurate to call Darwin a "naturalist Spencerian," because Spencer was the one who popularized the idea of biological evolution. My work *is* post-Spencerian in that it works to acknowledge Spencer's place in the history of evolutionary ideas about music. But evolutionary musicology is arguably "post-Darwinian" because in the post-Darwinian age, everything became Darwinian—even Spencer.

The retroactive ascendance of Darwin over Spencer in the history of music evolutionism had to do with the fact that Spencer ultimately was wrong about a great deal more than Darwin. It also had to do with the cultural legacies of these two thinkers. In the popular imagination, Darwin personifies Science as an adventure toward discovery, while Spencer's reputation is messier. Spencer may have ignited an evolutionary craze but Darwin still became the proverbial father of evolution. Quickly, Darwin began to exert his influence not only over understandings of nature but over understandings of history.

Fast forward to now. Being in the post-Darwinian within music studies means our theories of music must be consistent with the fact of evolution. It does not follow, however, that evolutionary theory can tell us everything interesting or important about the specifics of music, now or in earlier times. It does not follow that evolutionary theory can help us understand the cultural legacies of musical practitioners that know nothing or care nothing for Darwin and his milieu. What evolutionary science purports to tell us about music has often already been adequately or better explained using methods like music pedagogy, philosophy, score analysis, archive research, ethnography, or personal experience. Evolution might very well be a useful tool for analyzing music, but it is neither the best nor the only tool, even when it promises to explain the very ground of "human music."

The limits of evolutionary science's explanatory power over music are exhibited in part by the range of ways that musical meaning is generated *without* recourse to evolutionary theories, and in part by the ways that historical evolutionary theories are themselves inscribed in histories. In my work, I have shown ways that historical evolutionary theories could not help but invoke ontologies of music that reflected their own very limited understandings of what music is or might be. By inscribing music in their evolutionary theories—and by positing essential connections between music and emotion—thinkers like Darwin, Spencer, and Gurney musically naturalized *what they believed it felt like* to be "properly" human.

I have also worked to display the problems with evolutionary musicology's historical legacy by pointing out ways that the field's founders naturalized the musical practices of (mostly) white bourgeois men, while calling what they did a science of Music in the broadest sense of the term. The limits of their explanatory power become clear when considered alongside critiques leveraged by thinkers like Antoinette Blackwell, Charles Mills, and Sylvia Wynter. I

have also exhibited the explanatory limits of music evolutionism through analytical forays into auxiliary ideas forged by Darwin, Spencer, and Gurney—ideas about music's relationship with our sense of self, about the mutually enfolded sensual worlds of music and sex, and about the analytically resistant dimensions of musical pleasure. Rather than recuperate their ideas, I have worked to show how they appear to align with recent liberatory ideas about affect and emotion, but with very different political and social ends. Doing music theory after the advent of evolutionary science, then, means seeing music as an emergent property of evolution, while also recognizing that evolutionary theory is an imperfect (or perhaps even uniquely flawed) lens for viewing music.

One of the most concerning features of Spencer's, Darwin's, and Gurney's work on music is that they uncritically enlist evolutionary theory to authorize their own tastes. Unfortunately, this continues to be a risk for evolutionary musicology. Even in the present, scholars regularly classify what they see as relative degrees of evolutionary advance according to narrow musical standards. This tendency is most apparent when scholars treat non-Western musical traditions as examples of "less-evolved" music. By treating present-day musical practices as evolutionary time capsules, scholars run two distinct risks: misrepresenting evolutionary science and misrepresenting musical difference. Because this problematic tendency has been common throughout the history of music evolutionism, I see it as especially important for present-day evolutionary musicologists to become knowledgeable of the history of their discipline, and to critically situate their own work within that history. Ideally, they would also use their work to confront the history of oppression that is built into it the study of music as an evolutionary phenomenon. Interested readers can get a sense for the degree to which a given author has taken up the challenge I outline above by asking critical questions like these:

Question 1: Is the author knowledgeable of the history of music evolutionism and its challenges? Are they aware of the ways that evolutionary science has been enrolled to authorize the superiority of specific musical traditions? Do they confront prior critiques of music evolutionism?

Question 2: How does the author define music? What kinds of phenomena are included in this definition of music? What kinds are excluded? Does the author ask whether their conclusions would be different if they adopt another definition of music? Does the author argue (implicitly or explicitly) for how music or music perception *should* be, rather than how it actually appears in the world?

Question 3: How does the author define a musical being? What kinds of bodies or behaviors are included within this definition? What kinds are excluded, or rendered disabled if they do not conform to the definition at hand? Does the author argue (implicitly or explicitly) for what musical beings *should* be, or how they *should* behave, rather than how they actually are?

Question 4: Do they treat evolutionary claims as politically neutral? Do they work to confront the history of oppression built into music-evolutionism on the basis of false political neutrality? Do they work to account for oppression's legacy in the present?

Asking questions like these can help readers get a feel for whether an author is aware of the socio-political consequences that music evolutionism has had, and continues to have. If the author appears unaware of those consequences, it is possible that they are more interested in drawing on the power and prestige associated with making an evolutionary argument than they are with advancing human knowledge in a responsible way.

Usually when we say we are "post-" something, we mean *after*. Later, following, subsequent, behind, because of, at the close. We are referring to an *end*, as well as to a *successor*.

To use the term "post-" is to ascend to the leading edge, to move ahead or beyond. Lauren Berlant calls "Beyonding" a rhetoric we use when we do not want to be stuck (2011b, 80). My own attempt to get caught up in a post-Darwinian process should be clear in the subtitle of these concluding remarks. Having shown in this dissertation that Victorian evolutionists took up music in their efforts to reestablish the borders between human and non-human, and having shown that this often involved the de-humanization of anyone who was not a straight white European male with a modicum of income and education, I have tried to get past music evolutionism—to get over it—precisely by evacuating it of any remaining aspirations to comprehensiveness or political neutrality.

How should music be interpreted in the post-Darwinian age, when the division between the arts and sciences is widening, and yet the *science of music* is a scene more lively than ever? What does it mean to be post-Darwinian *with regard to music*? What place did Darwin's own (often misguided) attempts at music theorizing hold to his predecessors? What relevance do non-Darwinian ideas about music continue to hold, for that matter? These are the questions I have approached in this dissertation and that I will pursue further in future work.

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