

events involving a setup, confrontation, and resolution. According to Dukic, these impressions follow active and passive exchanges (tension and release) suggested in specific features of music. Pianist Graziana Presicce gives a summary of performers' experiences with visual imagery, offering three categories of visual imagery during music performances: spontaneous, heuristic, and strategic. She argues that these forms of imagery can enhance the expressiveness of a performance (or preparation for a performance). Anri Herbst and Silvia van Zyl, of the University of Cape Town, focus their study on four visually impaired pianists. The authors discuss how the pianists' internal experience, such as the use of metaphors and occurrences of mind-wandering, can compensate for their visual impairment, and shift attention to embodied cognition and dynamic system theories. Singer, lecturer, and conductor Mary T. Black examines how choral conductors use verbalized imagery—metaphors, similes, descriptive imagery, and other figurative language—to bring out or alter singers' vocal responses.

The book's conclusion, presented as Part V, has a single chapter by Tuomas Eerola (Durham University). He ends on an instructive note:

The real-world applications of music and mental imagery already exist. There are applications in music therapy and education that rely on imagery as part of a therapy process...or as a part of rehearsal and performance process...One of the possible ways to feed the basic research and promote the insights from this area is to campaign for featuring this topic more prominently in the teaching of music theory, musicology, and music performance, since these are the areas with the widest reach for people who are likely to be the music professionals in the future (286).

For the reasons Eerola outlines, this book is a valuable anthology of essays that, taken together, advocate for a deeper appreciation and broader applications of music and mental imagery.

JONATHAN L. FRIEDMANN
Academy for Jewish Religion California, USA

MUSIC IN HUMAN EXPERIENCE: PERSPECTIVES ON A MUSICAL SPECIES. By Jonathan L. Friedmann (Ed.). Newcastle upon Tyne, UK: Cambridge Scholars Publishing, 2022. 345 pp.

This book consists of sixteen individual essays, each an independent argument attempting to move forward the knowledge of various fields, including anthropology, linguistics, neuroscience, history, ethnomusicology, cultural studies, and musical philosophy. Yet each chapter builds on the others in terms of a narrative stream, building arguments of the complex relationship of humans to music. The book attempts to answer questions such as “What is the relationship between speech and music, and which came first?,” or “Why do all cultures have music?,” or “What does music symbolize?,” or “What is the different aesthetic experienced by music when performed or heard?,” or “What is the purpose of music in a society?” Each writer investigates an aspect of the evolution of music along with humanity's development and attempts to understand the dynamic that gives meaning to this fact in human existence. Each chapter stands alone and can be read as an example of research in that field in its own right. Each contains significant references to the current literature in its field, along with an extensive bibliography, making them easily considered for use in teaching and learning in a college curriculum. Each chapter advances its field in interesting ways, yet some may be considered as an outlier to current thinking on those topics. Taken as a whole, this book is neither simplistic in approach nor straightforward, but rather complex. The book is not broken into subsections that acknowledge similarities between disciplines, but rather approaches the questions at hand as one of dialogue with each other as well as the current literature. It is intrinsically intersectional in its approach, and therefore to most fully comprehend the arguments, it must be apprehended as a whole — as each chapter contributes a building block in understanding the overall

argument that human musical expression is intrinsic as well as complex, is innate as well as learned, and is characteristic as well as unique.

The book opens with a reprint of an article by Bruno Nettl, addressing the great discoveries of ethnomusicology by pointing out that ethnomusicology has given the Western world a different way of seeing and understanding “music” as actually a world of musics. Music is not, in fact, a “universal” language and it functions differently in different cultures and societies. Ethnomusicology, Nettl argued, demonstrates music is on a continuum from improvisational to composed, that geographic boundaries are not useful, and that no one determinant is operational in musical style. Rather, Nettl argued, ethnomusicologists have recognized the changing nature of musical culture and the domains it occupies in the lives of people. Nettl’s argument, “contradicting and correcting conventional wisdom and accepted knowledge” (11) is that there is no one way of defining music and its roles in society. His essay lays the very foundation of the philosophical premise for the book. Each succeeding chapter attempts to explain at least one aspect of that ever-elusive definition.

Beginning at the very beginning of humanity, John Collins attempts to track down the origins of music to prehistoric hominin and prove that they had forms of vocal-gesturing, and that musical tones were likely an ingredient of their communication or early language. His argument is that this occurred in both small-brained predecessors as well as the later, larger-brained Homo genus. He draws these conclusions with nine pro-music evidence claims, by combining disciplines of linguistics, archaeology, human infant studies, evolutionary theory, primatology, and ethnomusicology. Alejandra Wah’s chapter follows immediately, attempting to understand what underlies the ability to experience music, basing her study on the field of biomusicology, and focusing on the cognitive processes of interoceptive perception during hominin evolution. She argues that the universality of singing, the capacity to synchronize with others in dance, and the fossil record of instruments at least 44,000 years old, all strongly suggest early development of music in human history. She concludes that preverbal and nonverbal stories told through music, song and dance, were a capacity possibly available as early as the hominins.

Victor Grauer also looks backward in time to try to discover additional relationships between music and language. His approach uses genetics to trace back population groups to attempt to show possible early relationships among different musical style families. His graphic “tree” is a provisional model, which offers intriguing possible “historical channels through which these various styles developed” (81) attempting to explain how distinctive affinities of style, such as ballads or strophic solo songs, exist among so many widely dispersed indigenous peoples. Various possible migration theories are presented, along with correlations following tonal languages around the world. Grauer suggests a reexamination of tonal versus non-tonal language origins may be needed. Chapter 5 by Simha Arom, observes traditional musics and examines the idea that musical theory is idiomatic and is understood in various cultures without the users having consciously expressed specific rules. Following further along the lines of whether music is part of language or an art, Piotr Podlipniak, also examines the communication function of music in hopes of redefining music.

In a different direction for understanding the origins of a subset of music, Nino Tsitsihvili, looks beyond current theories of sexual selection for creating love songs, toward a model that suggests that humans living under more cultural constraints may have been compelled to create romantic song as a way of compensation for the lack of sexual freedoms. Tsitsihvili observes that there are more love songs in traditional societies with fewer permitted sexual liberties, and that love songs are scarcer in those societies with more individual freedoms. While sexual taboos are universal in human culture, their degrees vary widely and so too, the human musical responses to them.

Thinking “out of the box,” is clearly part of Joseph Jordania’s world view. He argues that music must be linked to evolutionary theory, and posits the idea that music may be a part of predator avoidance strategies, a known major asset for survival for any person or animal. Jordania suggests that music was part of a defense strategy by humans, and names six major observations to support his theory. For example, traditional societies used music and dance before hunting and fighting, and this

may have been to change the psychological makeup of those undertaking such missions. He also observes that western militaries all employ communal singing and orchestras and that historically such practices were woven into military traditions. He goes on to list homosexuality and cannibalism as other predator avoidance strategies, and suggests further research to find additional human behaviors that may be tied to predator avoidance strategies.

While this book is not broken into subsections, the last half of the book seems to be more about the music itself, and less on theories that intersect with other far-flung disciplines.

Ellen Dissanayake investigates human behaviors that strengthen bonding using ritualized expression, such as between mothers and infants, and the roles of various forms of mourning and laments. She understands mother interactions with infants, such as use of voice, facial expressions, and body movements with their child, as a form of ritualized interaction. Dissanayake defines a lament as “a narrative expression of feeling grief and loss in a ritualized form... whose primary function appears to be externalization or expression of the emotion and at least temporary relief from that emotion.” (164) She sees the lament itself existing in a state between nature and culture, part emotion and part art. She surveyed mourning rituals and laments in various indigenous cultures, providing a detailed chart of the findings, and seeing lament as a form both ancient and adaptive, but one that increases social bonds.

Other indigenous practices, such as animal story songs, serve not only to preserve culture in oral traditions, but also to encode ecological knowledge and practices, observes Michelle Scalise Sugiyama. Animal story songs have long been understood as part of Native American cultures, but further research has determined that the practice is global to hunter-gatherer societies, thus suggesting a far more important survival strategy embedded in this stylistic choice.

Other cultural practices, such as the apotropaic sounds, images and objects of ancient cultures are examined by Jonathan Friedmann. Apotropaic phenomena were intended to be any gesture, sound (including noise, music, or speech), object (including instruments or utensils), or device that could avert evil or turn away bad luck, demons, ghosts, evil spirits, diseases, and so on. Such “magical” qualities were performed or experienced in various practices, such as divinations, conjurations, exorcisms, incantations, ablutions or invocations. Friedmann relies heavily on textual and archaeological evidence. He links ancient healing practices of music to modern ideas of musical therapy.

Michael Naylor explores the difficult topic of reversing ingrained teachings and historical narratives of oppressive or dominant cultures. He posits that interventions can change these historical patterns by repudiating dehumanization and stereotyping, whether religious or political, and fully appreciating and respecting repressed groups.

Following this idea of reexamining world music and not relying on the established western narrative, Elizabeth Phillips and Steven Brown delve more deeply into musical structures, developing a vocal-melodic theory of the origin of musical scales. Vocal music had been traditionally seen as the vehicle for expressing emotions whereas harmony, or “harmonicity” was seen as based on mathematical ratios and science, and the dominant view of scales for hundreds of years. This view claimed that humans “innately prefer harmonic intervals,” but this view is questioned by the authors in observing that most intervals of scales are small and step-like. Harmonicity theory requires accurate and precise pitch, which is something most singing in indigenous and traditional cultures does not achieve. The authors propose an Interval Spacing theory of scale structure that “accounts for the empirical evidence regarding the physiology and cognition of musical scales and that draws from a wide variety of global musical traditions.” (258) The main point is they want to account for human physiology and the musical traditions of various cultures that more fully explain developments in world musics, and thus create a “descriptive theory of musical scales”.

Robert Lopez-Hanshaw takes a step back to do a bird’s-eye view and observe musical change in the context of evolution. To help describe the changes, he attempts to explain the patterns of cultural evolutionary change as a chaotic system. Lopez-Hanshaw understands music as in dialogue to various culture-specific forces and demonstrates that seeing music as a response to those forces explains *why* music changes, rather than focus on how or what changed. Using the language of

evolutionary biology, he looks at various evolutionary traits of music with case studies surveying melody, rhythm, and pitch systems. Recognizing that “no single factor influences musical evolutions equally across all cultures,” (287) he suggests careful studies analyzing mutually-influencing trends to create a more informed model. He proposes using a tool called Agent-Based Modeling (ABM), coming from the field of archaeology, to more fully understand the chaotic systems.

Looking at some of the newer trends in musical creativity through the lens of the Schillinger system, John Morton, a well-known composer, trombonist and arranger, expresses some of his philosophy on the construction of music as opposed to a romantic notion of “inspiration” or “creativity” in composition. The chapter sums up some of the pertinent points of the Schillinger system, touching on melody, harmony, counterpoint, melodic configuration, and scales. The Schillinger system he describes is still taught at the Berklee College today, as it has been since the founding of that institution. He explains that Schillinger dismissed atonal music as a revolt against nature, and that twelve-tone music rarely allows a listener to perceive the structures and internal logic of the composition upon hearing and is thus difficult to interpret.

The book ends with an essay outlining an experiment on the aesthetic experience of the singing voice by Maja Vukadinovic and Agota Vitkay-Kucera. The authors examined whether singers perceived their own voices as sounding better while they were singing or when later listening to recorded performances of themselves. The authors concluded that perception of the singing voice is in a relationship to not only one actually hearing their voice, but also to the psychological state of a person and their understanding of the art. This small study may inspire further research, but for now, they recommend teachers to ask their vocal students to frequently record and listen to their own voices. This can be helpful to them in their perception of their own voice and improving their vocal quality and singing techniques.

This book’s series of essays takes the reader through an incredibly dense set of intellectual movements and forays, completely fulfilling its subtitle of “perspectives on a musical species.” The reader will come away with new understandings of the origins, functions and methods of musical production, and benefit from the abstract overviews of the interaction of music and how it helps to define, create, and underpin humanity in all its development. The book’s perspective is that music is intricately linked to many aspects of human development and has been part and parcel of those developments, influenced both by human biology and human cultures. Ultimately, this book asks the question whether by understanding these intersections and diverse studies we can infer any general principles, and whether that is necessary. One may conclude after reading these essays that a grand narrative may not be particularly useful.

JUDITH S. PINNOLIS

Berklee College of Music

Boston Conservatory at Berklee, Boston

THE IMAGINATION OF EXPERIENCES: MUSICAL INVENTION, COLLABORATION, AND THE MAKING OF MEANINGS. By Alan Taylor. London & NY: Routledge, 2021. 114 pp.

In the *Imagination of Experiences*, London-based musician, conductor and musicologist Alan Taylor has provided an engaging synthesis of current academic theories of musical imagination. Taylor is also interested in the practical implications of this synthesis: If this model of the imagination is true, how should that inform musicians’ approach to music? How should it inform listeners? That said, this deceptively short volume covers a lot of ground. Each section is a distinct area of study: The trope of the composer as solitary genius; the theory of imagination; a typology of musical collabora-