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**A case study of professional musicians and their perceptions of
the impact of aural learning experiences in developing
musicianship**

Jonathan Urmenita

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**A case study of professional musicians and their perceptions of the impact of aural learning
experiences in developing musicianship**

by

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Dedication

This work is dedicated to my students past, present, and future, who continually inspire and remind me to be conscious: conscious of myself, conscious of the world around me, and conscious of the power of music to be a force for good. To them, and to all who choose to do good in this world, I dedicate this small contribution.

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Abstract

This narrative case study examines the perceptions of three professional musicians on the impact of focused aural experiences (FAEs) in developing their musicianship. The participants include a professional instrumental performer, the director of a non-profit jazz school, and a retired high school band teacher. Each participant has engaged in performing, teaching, composing, arranging, and/or conducting in some capacity at various stages of their careers. The research explores the roles that focused aural experiences may have had in shaping each individual's musical development by examining their perceptions of the impacts of such experiences on their overall musicianship.

Focused aural experiences (FAEs) are defined here as any formal or informal activities in which the individual learned music by ear, learned to play an instrument by ear, or listened to music with focused intent. Relevant formal activities might include taking formal aural training classes in a school setting, transcribing, and playing music by ear, and studying orchestration or composition through aural transcription. For the purposes of this study, focused aural experiences will be specifically differentiated from musical engagements where notation is more emphasized such as performing music through score reading, sight reading, score analysis, or notation-based music theory.

This study aims to provide a perspective on the complex experiences that shape musical development specifically through the lens of FAEs, describe the nature of those

experiences, and offer another pathway towards understanding the nature of music learning, the development of musicianship, and notions about the multidimensional nature of talent and ability.

Preface

What is talent? Does it exist? Can you explain Mozart? Such questions lie far beyond the purview of this current study. Firstly, I wish to address the very word *talent* itself. In academia, its use seems guarded at best. It is not my aim to perpetuate the notion of talent as a gift, or talent as a means of separating, defining, or identifying perceived superior traits. Here it is only used in the context of its perception amongst musicians, and therefore must be named as such. For the purposes of this research, talent may be better termed *musicianship*, as a generalized definition for the myriad skills developed and demonstrated in the learning, performing, composing, teaching, and engaging in music. Secondly, my aim is only to understand, or, at the very least, to begin to understand the complex nature of human experiences in learning music. Most importantly, I must stress that I only seek to offer specific perspectives, only a glimpse at the rich and complex experiences that are unique to every individual.

A reality exists that, despite our best efforts to explain them, there remain inexplicable anomalies in our human experience that defy explanation. Why do some individuals “get music” and others seemingly do not? Sure, we might say that it is due to a musically rich environment, or other environmental factor. But, what about, say, a young student who comes from a non-musical environment, only to excel at astronomical rates compared to their peers? I believe we have all observed cases across all manner extremes of musical abilities that manifest that are incongruent with our assumptions, observations, or that are illogical.

Perhaps we cannot answer what talent is, nor can we confirm or deny its existence, however, what I may offer in this study is the perspective of individuals in their own experiences and in their own terms, in what they believed shaped their musicianship, their musical development, and in essence, what made them, them. It is through the lens of these experiences that perhaps I may glean some sense of what musicians view as critical elements and experiences in developing musicianship, and if, in fact, FAES play any significant role in these perceptions.

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Chapter 1: Introduction

Background

My interest in aural skill development begins from a simple reality that music is fundamentally a sonic medium, and our primary sensory engagement with it is through sound. Consequently, all musicians, whether consciously or unconsciously, intentionally, or unintentionally, are engaging in music via aural means, using various aural skills. For this reason, the use, application, and development of these skills are a primary concern when discussing the development of musicianship. My research interest aims to look deeper into the exact nature of these aural experiences, how musicians specifically perceive their use and impact, and how musicians place aural experiences within the wider scope of learning music and developing musicianship. For this study, it will be useful to first provide some preliminary contextualization on the why of aural learning, how those definitions fit into a larger framework of musicianship, and how musicianship might be even more broadly be defined along the lines of notions of talent.

I find it useful first to contextualize my research interest within the larger scope of music learning on a historical scale. If only, to remain grounded in the perspective that there are multiple perspectives, of which modern methods of learning music through the Western classical tradition are but one. While various approaches to learning music have existed throughout history, learning music by ear has traditionally been the primary means of learning music in many cultures around the world,

especially prior to the advent of written musical notation in Western Europe in the second millennium (Grout, 2010). Even today, many nonwestern musical traditions, including those of Southern India, Latin America, and the African continent, all continue to stress an emphasis on learning music by ear (Rommen, 2008). In fact, even in Western Europe, learning music by ear remained a common means of studying music until the advent of industrialized printing in the 19th century (Grout, 2010), and the American tradition of jazz music continues to stress the importance of learning by ear (Lowell, 2003; Tomaro, 2009). Additionally, modern rock and roll and other forms of popular music are also genres where learning music by ear remains a prominent part of the musical culture (Johansson, 2004). Many cultures and eras have utilized learning music by ear, and so it is within these historical and sociological contexts that I focus my research on the development of aural skills. It would seem that historically, aural skills development have been and continue to be an important part of the music learning process.

Within the context of this study, aural skills development might then be considered as a component within the larger framework of musicianship. It may prove useful then to also provide contextualization on the definition of musicianship as it will be referred to in this study. Musicianship, in this context, might also be historically referred to as *talent*, *aptitude*, or *ability* (Haroutonian, 2000; Hoffman, 2015; Robertson, 2008; Stollery & McPhee, 2002; Hayward, 2009; Shouldice, 2019; Jaap, 2005). For the purposes of this study, musicianship is the collection of interrelated

skills necessary for the engagement of music at a high level. These skills might be classified according to sensory domain such as aural skills (pitch, volume, and rhythmic discrimination, textural, timbral identification, transcribing melody/ harmony/rhythm), visual skills (sight reading, photographic or otherwise visually driven memory), tactile skills (finger velocity and dexterity, embouchure sensitivity), and conceptual skills (harmonic and theoretical knowledge, compositional skill, improvisational skill) (McPherson, 1995; Hallam, 1998). The sum of these various skills, combined a range of emotional, cognitive, kinesthetic, and social intelligences, could be viewed as parts of a whole that provide an overall concept of *musicianship* that could be applied to the aims of this research.

More broadly, my research interest in aural skills development as a component of musicianship is tied to the concept of talent, a term as it might be more commonly referred to by the general public (Jaap, 2015; Hanson, 2019). As stated earlier, I do not wish to advocate for the existence or nonexistence of talent in the traditional sense. For this reason, I only refer to it in the colloquial sense as a matter of dialogic convenience. It would be more appropriate to qualify the term talent with a less polarizing terminology and more appropriate term: musicianship. This could be applied to describe various musical skills, some of which are acquired through learning and practice, and others that might appear to be inherent, skills that perhaps a student might show natural affinity for or demonstrate high aptitude in with little or no previous learning or practice.

In my personal experience as a teacher, I have observed that different students appear to acquire different musical skills at different rates and with differing levels of depth and quality. Of course, this is a basic observation, however my inquiry begins when I also observe that in some cases, the speed, depth, or quality of skills learned may or may not necessarily follow as a logical result of learning or practice. I have seen the firsthand case of a student who, despite not having significant musical exposure such as having a musical family or significant training such as receiving private lessons or participating in a youth ensemble, develop musical skills superior to his classmates with seemingly little effort. Conversely, in another case another student who had musical parents, was receiving private lessons, and had participated in extra-curricular ensembles in addition to school ensembles, only achieved basic proficiency despite diligent practice.

These observations have led me to taking great interest in the factors that drive learning music. As an educator, it is my personal conviction to attempt to uncover techniques, principles, and concepts that might make learning and achieving music at a high level more accessible to all students. These questions have driven my thinking along the path of aural skill development, as it is my informal impression that aural skill development is the foundation that drives the development of overall musicianship. Thus, the inspiration towards research in this field was born.

Theoretical Framework

This case study examines learning music by ear as part of a complex network of experiences that might shape, develop, and contribute to overall musicianship, as well as individuals' perceptions of such processes. A theoretical framework must address these elements in tandem: the mechanisms of music learning and engagement, and the perceptions of those mechanisms.

It is at this junction of the mechanisms and perceptions of music learning and aural skill development that I examine the theories of Leo Vygotsky in their possible application of music learning as language. Broadly summarized, Vygotsky points to learning as a series of experiences where learning is acquired in a social setting through interactions. Language is a key component of this, where language is acquired through social interactions in group settings. I will examine the application of this theory where music might be considered as language that is acquired through socio-musical interactions. The vehicle by which this learning is accomplished then, is music experienced through playing, performing, listening, creating, and participating in music via aural means.

This theoretical framework is supported by a literature review examining both source texts by Vygotsky himself, as well as texts that analyze and apply Vygotsky's theories to educational settings that may be informative to the way that I am applying them specifically to music learning. At the junction of perception, observation, consciousness, and knowledge, Vygotsky's theories of knowledge acquisition may

become useful in examining the issues stated above. Of primary concern is the question of how individuals assimilate and organize observations and phenomena into knowledge and experiences, essentially the fundamental processes of learning. It is here that Vygotsky has developed the concept of knowledge acquisition through what he calls *signs*, specific stimuli such as speech, reading, writing, and social behaviors (Vygotsky, 1999). The individual acquires knowledge through observations in order to develop perceptions, knowledge, and experience using signs. A primary tenet of this theory too, is that these observations are critically carried out via social mediation, and it is through these settings that the individual develops consciousness of the world around them, and knowledge of concepts and experiences.

For this present study, Vygotsky's theories are examined through the lens of musical skill acquisition through the phenomenon of audiation in the process of aural learning. The premise of this framework is the concept that sound might be thought of as a *sign* and that, when acquired through social mediation (like speech), it allows the individual to assimilate musical knowledge through observations and perceptions. In this way, the individual makes meaning and knowledge for themselves as those sign stimuli are assimilated into the individual's own perceptual framework. Taken together, Vygotsky's theories might apply here in stating that focused aural learning experiences are a part of the individual's learning process as a way to assimilate, relate, construct, and communicate meaning in the same way that language is developed in order to convey knowledge through speech. In other words, music is language assimilated

through social mediation through the pathway of listening and responding to music through aural means.

Similar research has been conducted that examines the use of musical notation to teach song in peer-to-peer settings through a Vygotskian lens (Carroll, 2017). In this study, children demonstrated a use of notation that was contextualized by their environment and the nature of their social interactions. This study demonstrated that even children without prior knowledge of musical notation had the ability to invent innovative and pragmatic notation systems in order to teach their peers. And further, these systems were often informed by the children's intuition to use previously known sounds, shapes, and previous learning to create new learning and meanings. Carroll examined these phenomena through Vygotsky's lens and found that the results reinforced the idea that meanings and learning are constructed in and through social settings and interactions. The present study aims to examine the concepts within Vygotsky's theories in a similar manner by examining the perceptions of how musicianship might be developed through listening and responding to music in social settings. Another study examining the use of indigenous music teaching techniques in the modern musical schooling of Uganda found again that musical learning is critically situated within social and societal contexts (Isabirye, 2021). The Isabirye study found that contextualizing learning within societal and social schema improved the learning experiences of students and enabled the creation of deeper and more meaningful learning for them. These findings further reinforce a constructivist viewpoint in their

findings of socially situated learning. The present study similarly aims to examine learning through listening in social contexts as a vehicle for developing musicianship.

Vygotsky on the Originations of Learning and Development in the Child

On the Formation of Concepts and Perception of Objects. What follows here, firstly, is a basic examination of Vygotsky's concepts of learning and development. In Vygotsky's *Thought and Language* (1962) he describes how the child develops higher psychological processes in regard to the development of concepts. Concepts are, as Vygotsky describes them, the end point in a progression from the unorganized and concrete thought processes of the child to the organized and abstracted thought processes of the mediating individual. He describes this progression through what he terms *complexes*.

Firstly, Vygotsky (1962) describes the first stage of concept developing as "syncretic heaps" (p.119) of roughhewn impressions of objects solely dictated by the child's visual impression of them. The groups are at first completely random, the so-called "trial-and-error" stage, followed by progressively more organized and specific associations between objects, so that various objects may be associated with a word. It is important to note that at this stage, Vygotsky makes clear that the child has not attached meaning to the word, nor correlated the word to the object outside of gross generalizations of the object's association to objects around it occurring within the child's visual field. If I might offer an example, a child may observe a cup, however a plate nearby might also be a cup, since they are both round, and a table might also be

cup because the two share the same color. Note here that with all associations between objects might be applied, none of which correspond to any real meaning for the concept of a cup. Note also, that the child generates these associations independently, in what Vygotsky (1962) terms the “egocentric” (p. 27) stage (a term he introduced as an extension of Jean Piaget’s earlier learning theories), where the child is yet unable to generate associations or concepts of objects outside of their own impressions. Finally, it is critical to remember that at this stage, all associations are merely visual attributions between objects (Vygotsky, 1962), with no correlation to the objects themselves.

Returning to my example, it is not the roundness of cup and plate that the child associates as a shape, it is that they both *look* round, and are therefore the same object.

In the next stages of development, in what Vygotsky (1962) terms *complexes*, the child is able to make real associations between objects based upon progressively more complex and specific groupings and attributions of the characteristics between objects. Over time, these groupings enable the child to leap to the stage of *pseudoconcepts*, which serve as the penultimate step towards the adult versions of concepts (p.127). Vygotsky here defines the child’s version of pseudoconcepts as generalizations of attributes between objects that pave the way towards the abstraction of those objects but remain tied to real and observed impressions of the objects themselves. The progressing specificity of the attributions of these pseudoconcepts lead to *potential concepts* in which the child begins to focus association of the concept of an object to a single, specific attribute, i.e., the roundness of cups. It is at this stage that

Vygotsky observes the child beginning to develop the level of abstraction required to associate the actual word cup with the object as a symbolic place holder for the object itself (p.147), i.e., this is a cup, it is round.

The critical element here is the mediating individual interaction that Vygotsky (1962) mentions in his development of complexes in the child. Through speaking and interacting with the mediating individual, the child receives impressions of objects, associations between objects, and other “prepacked” meanings that are passed down from the mediating individual to the child that enable the child to further develop complexes (p.129). In my example, the child may make up any babbling word or sound for objects it associates as cups. It is not until the mediating individual hands the child a cup and says “cup!” that the child receives a mutually, socio-culturally, linguistically accepted meaning for the object. This is to say, that the social interaction between the mediating individual and child provides the vehicle through which the child is able to make meaning of objects, meanings that eventually evolve into concepts through further levels of abstraction.

The development of meaning making and perception is further elaborated in *Mind and Society* (Vygotsky, 1978). Vygotsky notes that, in addition to the intertwined nature of the development of speech and perception, he goes on to say that the two are co-dependent in certain aspects of their development. This is to say that, at the early stages of the child’s development, the word and the perception of the object are nearly indistinguishable, such that the perception of the object and labeling of the object with a

word occurs only within the limits of that object being in the visual field. He notes here as well that, “The path from object to child and from child to object passes through another person” (p. 30), acknowledging the critical mediated social-interactive component of development.

On the Development of Inner Speech Towards Thought. Vygotsky (1962) considers the word to be the “cell that cannot be further analyzed and that represents the most elementary form of unity between thought and word” (p. 225). He goes on to describe the complex and varied nature of the association between words and meanings. Words, objects, and meanings might evolve and change according to the context in which they exist. To continue with my simple example, cup might at one moment refer to the vessel, and at another describe the action of cupping one’s hands, denoting a similar meaning in the word, but a different object entirely, as well as a different association between word and meaning, where one describes an object, and the other describes an action. Vygotsky summarizes his conceptualization in the following excerpt:

The leading idea in the following discussion can be reduced to this formula: the relation of thought to word is not a thing but a process, a continual development back and forth from thought to word and from word to thought. In that process, the relation of thought to word undergoes changes that themselves may be regarded as development in the functional sense. Thought is not merely expressed in words; it comes into existence through them. Every thought tends

to connect something with something else, to establish a relation between things. Every thought moves, grows, and develops, fulfills a function, solves a problem. (p. 231)

Vygotsky (1962) describes the meaning making of the child as occurring along two planes, the external semantic, phonetic plane, and the inner, abstracted, conceptual inner plane. According to Vygotsky, the young child exhibits no distinction between the two at the early stages of development. Words and meanings are extrinsically tied to their objects. As the child develops, various distinctions are manifesting between the external semantic associations of the words, and inner abstracted meanings of those words. Once this level of abstraction is attained, the child can construct thoughts as well as understand the speech of others.

Vygotsky (1962) introduces the terms *egocentric speech* and *inner speech* as a further basis in the development of thought. The first, egocentric speech, occurs in the early stages of development and is characterized by the incoherent babble of babies. It is completely self-centered and informed only by the associations internal to the child, thus its meanings are unique to the child alone. As the child develops, around school age, egocentric external speech drops and evolves into inner speech. As the child builds in complexity of associations and abstractions the external vocalizations are rendered unnecessary and are replaced by more efficient inner speech that is more deeply rooted in meanings and concepts. Vygotsky also observes that the transition from egocentric

speech to inner speech occurs in social settings. He observes that though children in this stage may not be interactive with each other, their activity of egocentric speech in a group setting are observed to eventually correlate to a reduction in egocentric speech and an increase in inner speech that evolves towards inner speech and the expression of thoughts to others. Though the mechanism of egocentric speech and inner speech are independent and unique, they are observed to lead into one another, suggesting that inner speech is a product or evolution of the activity of egocentric speech.

Vygotsky (1962) is careful to make a distinction between the primordial incoherence of egocentric speech, to the meaningful, coherent, and communicative speech of mediating individuals. To summarize, his conclusions appear to place egocentric speech, inner speech, and speech on a developmental spectrum from concrete to abstract, and from simple and generalized, to complex and specific. Egocentric speech, through a process of progressive abstraction and association, evolves into inner speech. Inner speech, thus further developing in abstraction from objects once the child can create meaning from objects beyond associations, evolves into speech, the physical manifestation of coherent inner speech. Once the child can do this, they can express their thoughts to another. For Vygotsky then, speech is from thought, and thought is from speech. By extension, if thought is a manifestation of consciousness, Vygotsky concludes that “a word is a microcosm of human consciousness” (p.271).

On the Development of Higher Functions, Interactive Speech, Memory, and Learning. In *Mind and Society*, Vygotsky (1978) seeks to examine two phenomena: the differentiation of uniquely human thought process and development, and the development of what he terms *inner speech* in the child. In his observations, the generalized process follows a progression from *egocentric* speech to inner speech via the mediation of a mediating individual, whose dialogue allows the child's speech and thought processing to transfer from an externalized intrapersonal dialogue with themselves, to an interpersonal dialogue in which they no longer need the externalized speech for processing. It is important to note here the subtle but complex interactions in the process. The egocentric speech of the child is not necessarily processing or interacting with the mediating individual, it is merely the child vocalizing their own thought process, in this sense they are not communicating *with* the mediating individual, they are essentially communicating *with themselves*, as guided and prompted by the mediating individual. This social interactive process, however, is what Vygotsky credits as the vehicle by which these externalized vocalizations and processing migrate inwards towards introspective processing.

In the process of the unification of perception, thought, language, and memory, Vygotsky (1978) states that from the development of inner speech, the child also develops concepts of time, concurrent with the development of the preservation of objects apart from the direct visual perception of them. In the development of the preservation of objects, the eventual abstraction of the object as apart from the word

representing the object, the child develops concepts of objects as before and after. According to Vygotsky (1978), this is the development of memory, the ability to abstract objects out of time. To return to my example of the cup, the child now knows what a cup is, having developed the capability to understand the concept of a cup without the aid of physically observing a cup. By this point, we might be able to say that the child can define or describe a cup.

What follows here is a discussion of what Vygotsky (1978) calls *signs and tools* in the further development of higher functions. What may be said of our earlier discussion in the development of concepts through words, labeling, and progressing towards an abstraction of concepts apart from the object, may be a process of mediation using signs and tools. In other words, the child uses words, or signs, as tools of perception in which the words are symbolic meanings for the objects. Through the process of migrating external egocentric speech to inner speech through the perception of objects, the child engages in the sign use of the word as a tool by which make this leap into abstraction.

In this process, Vygotsky (1978) claims that the child learns to internalize concepts, but this process is not carried out in solitude. Through the mediation of an mediating individual, objects lead to perception, perceptions lead to words, words lead to meanings, and meanings lead to thought. Vygotsky notes that the mediation provided by the mediating individual is also a complex socio-cultural and socio-historical process. Through this socio-cultural and socio-historically informed process, the inner

speech and thought process of the child develops until it reaches a point of complexity that it cannot continue. Vygotsky states that with further mediating individual mediation, the child is able to continually fluctuate between object-word-speech-thought dynamics in ways that lead to further and higher levels of processing. This process critically is the process of engaging in language. As the child engages in the socio-culturally and socio-historically significant process of language, the child also is able to develop higher concepts.

As a final note, it is important to acknowledge that Vygotsky (1978) made it clear in his writings that one thing did not necessarily lead to another, especially in the case of learning and development. This speaks to the question of nature versus nurture. What is naturally developed in every child, and what is learned? In his analysis, Vygotsky points out that development is not a result of learning, as in the child learns words and therefore develops complex thoughts. Neither does the opposite universally apply, that the child develops perceptions of objects, and therefore learns words for those objects. Vygotsky strongly emphasizes in both texts that learning and development are informed by each other but are not necessarily linearly linked to one another. Rather, as I might summarize, each undergoes several evolutions and transformations in reaction to the other, where both are neither independent nor interdependent, but truly interactive and intra-active.

Vygotsky's Zone of Proximal Development and Educational Implications

Earlier Thoughts on Learning and Development. Vygotsky's (1962; 1978) writings in *Thought and Language* and *Mind in Society* build towards one of the major developments in his theory of learning and development known as the Zone of Proximal Development, more formally defined in *Mind and Society* (1978): "It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86).

The zone of proximal development (Vygotsky, 1978) may be considered an extension, or perhaps an evolution of earlier theories of nativism, the idea of predetermined hereditary markers of development, and behavioralism, the theory that development is solely the result of environmental influences and conditioning (Karpov, 2014). As Karpov notes, these two theories, influenced by Darwin at one extreme of predetermined genetics, and Pavlov at the other of purely environmental influences, eventually gave way to another theory laid down by Jean Piaget, known as the constructivist approach. This approach provided a more moderate stance, stating that children assimilated learning from their environment and incorporated them into their existing schema. In a way, it was a means to reconcile earlier theories of exclusive nature or nurture into a single theory of nurture interacting with nature, hence the alternative name for the theory, "interactionalism" (Karpov, 2014).

Still, Karpov (2014) points out potential shortcomings in the theoretical assumptions in all three theories, the main assumption being that the child is a static, standardized unit that may be affected in predictable ways. According to Karpov, this manifests as nativism in the theory of genetic characteristics predetermining the characteristics, and by extension the capacity of the child to learn. Karpov continues to state that nativism stipulates that the child's intelligence will manifest according to their predetermined nature, and that this intelligence is unmovable. Karpov continues that it would then be the educator's role to provide a wide variety of opportunities to allow that intelligence to manifest. Alternatively, he states that behaviorism approaches the child from the opposite direction, viewing the child as a static blank slate in which learning takes place as a result of environmental conditions. Karpov concludes that it would be the educator's role in this case to enact the necessary environmental controls to affect learning in the child.

Karpov offers that constructivism attempts to provide an alternative to these two theories, stating that learning takes place amid social groups, and it is this social setting that drives and manifests learning (Karpov, 2014). Karpov is quick to point out, however, that this theory still might prove problematic. Like nativism and behavioralism, constructivism implies that the child is a static unit that might be affected by measured intervention. This assumes that the child develops predictably in a social context due to the social context. As Karpov emphasizes, this, as well as the unmediated social interaction that results from it, do not necessarily equate to learning.

In other words, the child is not static, and therefore learning cannot occur purely from things inherent in the child, or things from the environment, nor the child's unmediated social interactions.

Vygotsky (1962) himself points out these same limitations in *Thought and Language*. For him, the assumption that the child is static points towards a deeper flawed assumption that learning and development in the child were divorced in their progression. In *Thought and Language*, he explains the limitations of Piaget's theory in that learning progressed as a result of socialization. This assumes that socialization occurs and emerges in a predictable way. In assuming this stance, learning occurs as an isolated phenomenon from development, despite the behavioral stance that learning occurs as a result of socialization. The only way this would be possible would be for socialization, or the process of development, to be a static phenomenon that manifests in a predictable way as an assumed precursor to learning. To Vygotsky, this proves problematic.

Vygotsky (1962) seeks to provide a means in which both learning and development could both be accounted for in a single theory, since he views neither as possibly static nor universally affectable constructs. Thus, Vygotsky theorizes that learning and development occur in tandem with each other, neither dependent on one another nor completely independent of one another. To this point, I might now summarize his views thus far as: (1) the child begins the process of learning and development at egocentric speech, (2) egocentric speech allows the child to slowly

assimilate concepts of objects and forms, (3) through the mediation of a mediating individual, egocentric speech progresses to allow the abstraction of concepts, this abstraction of concepts allowing for the development of inner speech, (4) through further mediation, abstract inner speech experiences reintegration into reality as speech itself, (5) speech, and the socialization accompanying it, provides the vehicle by which further abstraction of higher concepts might take place.

Vygotsky (1962) sees development as a necessary component integrated into and interactive with learning. Through mediation of a mediating individual, the child assimilates psychological constructs that concurrently allow them to grasp concepts and forms. Thus, the psychological processes of socialization occur as part of a larger system of which learning and development play parts, but not the whole. For Vygotsky, learning and development occur together as the result of mediation by a mediating individual, not exclusively as a characteristic inherent in the child, nor solely a given series of environmental exposures, nor only a characteristic effect of the child being placed in a social environment, but rather a complex system involving all of these in tandem.

The Zone of Proximal Development as a Learning Theory. To this end, Vygotsky in *Mind in Society* (1978) seeks a mechanism through which egocentric speech could progress to inner speech, and progress further towards speech and learning. This is the mechanism he terms the “zone of proximal development” (p. 84). Vygotsky proposes that, as the child develops psychological processes and intellectual

concepts, there would be a progression of understanding to not understanding. At the stage of understanding, the child would have the necessary tools to be able to assimilate concepts on their own. At this stage, their current assimilation of concepts is suitable to render the assimilation of new concepts. However, at a certain point of complexity, the child's current psychology becomes insufficient to understand the new complexity, and it is at this point that Vygotsky postulates that mediation allows the child to develop further tools to be able to assimilate new concepts. The role of the mediating individual within this model is to aid in the development of psychological tools that allow the child to assimilate further concepts. The continual progression from non-understanding to understanding through the mediation of the mediating individual lies at the center of the ZPD theory.

ZPD thus provides an integrated theory that necessitates the mediation of a mediating individual to operate successfully. An important distinction must be made here that Vygotsky utilizes a more specific definition of socialization in his theory than mere proximity to others. In other words, Vygotsky's theory of ZPD requires a more direct role of the mediating individual in the process of socialization than the broader definitions of earlier theories such as constructivism. As Karpov (2014) points out, this is the theoretical assumption that constructivism makes incorrectly, that the child will develop psychological tools as a result of socialization in itself. Karpov explains that this unmediated stance proves problematic in modern education settings, such as where students are placed into learning groups to "discover" concepts on their own. This

method, following the constructivist concept of socialization leading to learning, may lead to misunderstanding of concepts.

This begs the question, “what are some of the modern perspectives on ZPD?” Rio and Alvarez (2007) elaborate more upon the ZPD in what they characterize as a *bioecopsychological* (p.282) system that fully encompasses the child’s cultural, social, and political environment as one integrated ecosystem of learning and development. This stresses the impact of the context and situated nature of the child in considering the acquisition of new concepts. This is to say, the ZPD exists not only within the child and between the child and mediating individual, but also within the various and manifold contextualized environments the learning is taking place within. To say this then, is to further acknowledge that learning and development take place within the child through the mediation of a mediating individual, and *within* a specific contextualized environment.

These ideas are mirrored and further elaborated in Rio and Alvarez’s (2007) examination of Vygotsky’s principles applied to pedagogy. Some of these are scaffolding, reciprocal teaching, apprenticeship, learning communities, and mediated dialogue. At the heart of these theories is an emphasis on psychologically mediated and socio-culturally situated learning. Rio and Alvarez highlight that even these various modern developments might be proof or an example of Vygotsky’s theory of culturally situated learning and development. It might not be an oversimplification to say that each modern development and evolution of ZPD might be a manifestation of the very

bioecopsychological contexts described within the theory itself. This is to say, that as each new generation or society thinks about Vygotsky's works, new developments emerge as pragmatic solutions to the question of learning and development as situated within that society.

Lantolf (2003) examines Vygotsky's theories in the context of English language learners. For both children and adults, Lantolf finds mediation through imitation and play transformative in the language development of both children and adults learning a second language. These two practices allow for the progressive application of inner speech towards the self-regulation of speech in the second language. This might suggest that the means of language acquisition may share similarities between adult and child learners, albeit at an appropriate level of complexity according to their age development.

In light of these findings, we might conclude that ZPD in the application of language development might have some universal functions shared amongst individuals. This is not to say that these learnings are not still bioecopsychologically (Rio & Alvarez, 2007) situated, but it may point towards commonalities amongst individuals in the way language is developed.

Implications for the Acquisition of Musical Learning via Audition

Musical Sound as Sign and Tool, Audiation as a Means of Development. It is at this point that we may return to examine our original inquiry, is music language? I wish to be clear, that it is not my intent to scientifically, empirically, or otherwise prove

that humans process music the same way we process language. That is far beyond the scope of this writing. However, we might glean some insight if we are able to merely observe possible parallels between Vygotsky's theories, language acquisition, and music learning. If we momentarily consider music truly as language, a number of interesting points emerge.

If we consider music as language, we might then be able to examine the process of learning music through a Vygotskian lens. What we might consider the development of early concepts in the Vygotskian view might be the reproduction of sound through imitation. In this case, the child learns by listening to the mediating individual and repeating after the mediating individual. Through the interaction with a mediating individual, the child may develop first imitative sound concepts. These, like the early stages of development in Vygotsky's theory, would be purely imitative, as the child would not yet have developed the conceptual frameworks behind these sounds. Later, through further mediation, the child might develop what we might consider higher functions of sound such as an understanding of emotive performance, music as a metaphor for concepts (emotions, places, moods, characters, stories etc.), or perhaps improvisation or composition. These skills would be further manifestations of the development of higher musical concepts in the child, perhaps understood within the Vygotskian framework as a progression from objects, to pseudoconcepts, to concepts. Throughout this development, musical sounds might be considered the signs and tools by which the child begins to develop those musical concepts. These signs and tools, and

the means of mediating them, are socio-culturally derived through the interaction with a mediating individual. I might argue here that music culture is as rich and complex as any language.

In the same way that the child develops concepts through the development of complex inner speech, we might say that the child develops musical concepts through the development of the inner ear. This is what we might consider audition, the ability to replicate sound without an external stimulus (Liperote, 2006; Gordon, 2007). I would argue here that the musician develops higher musical concepts along with their ability to imagine the sound that they want to make. Through hearing the abstracted concept of the sound they wish to produce, they are able to manifest that sound through performance, improvisation, composition, or by any other means they wish to express it. The means and vehicle by which this is developed is culturally mediated via a mediating musician, first through imitation, and then by independent and introspective means by the individual. If all this were true, then the development of audition might form a basis for musical development in a socio-culturally informed environment via the mediation of an mediating individual.

Situating Music Learning Within Language Development and Culture.

This writing does not intend to argue that music is in fact language. However, in conducting this thought experiment, certain parallels may be drawn, at least in our observations of how music learning and development may occur. Examinations into the connections between music and language are not new. A meta-analysis conducted by

Jentschke (2011) revealed several historical as well as recent studies that shed light on the question from a variety of perspectives. He proposes that Darwin (date) theorized that music and language originated from a thus far undiscovered “protolanguage” (p.344). In a sense, this thinking might parallel ours, in that music and language may originate from the same psychological space. More contemporary studies from the same meta-analysis show that infants do appear to process sounds within musical terms. In other words, at the early stages of development, infants process words as musical sounds, rather than the meanings behind the words themselves. Moreover, Jentschke also notes that studies in the neurological processes behind speech and language appear to show similar processes of pattern recognition, error detection, and culturally based syntactical development in similar regions of the brain between processing language and processing musical sounds.

Sociologically, music largely develops, evolves, and exists as a means for individuals and societies to express, communicate, develop, and transmit identity (Froelich, 2017). On a variety of levels, from the level of the individual, all the way to the encompassing of a civilization, music might be seen as one component of a multifaceted image of human identity. Like language, the patterns and syntactical mechanics specific to a culture’s language similarly exist in that culture’s music (Jentschke, 2011). Perhaps it is for this reason that we seem to understand music in more universal terms. Like language, we seem to understand the emotional connotations of music before we understand the mechanics of the music itself. Much in the same way that one might be

able to express sadness to another, even though the barrier of differing spoken languages, we might understand music in ways that transcend the divisions between cultures and societies, such that these divisions disappear. Perhaps it is so then, that music might be the crystallization of a culture in the same way that language may be.

What if we treated music as language in the same sense as spoken language? We might observe that the mediating individual is an older musician who enables the progressive abstraction of musical sounds in the child, such that the child may eventually produce sound as an independent voice as a means of communication. It may be then that the ZPD could serve as a model that allows the child to move into a realm of higher musical development via the development of the inner ear. Moreover, this development might be as powerfully culturally situated as spoken language itself. Meaning, perhaps, that music is to a culture as language is to a culture, or even more succinctly, that music is language consisting of many culture-specific musical languages.

Problem Statement

Studies in the field of musical learning and musical development, as will be further described in chapter two of this study, have thus far examined the development of musicianship as being either an inherent set of skills or a result of learning acquired skills in a suitable environment, and have identified some factors for both, but the findings are inconclusive. It might be a more appropriate observation that, taken in summation, these studies appear to qualify the development of musicianship as a

spectrum, with some skills appearing inherent while others are acquired. The perceptions of these skills too, seem to exist along a spectrum, where individuals demonstrate varying views on the existence and the nature of musical ability and its relation to musical development. These conclusions and observations appear to continue into the level of examining aural skills specifically as a subset of developing overall musicianship. In questioning the general perceptions of inherent versus acquired aural skills, the conclusions drawn in examining those perceptions present no more clarity than the conclusions around the mechanisms themselves.

It is my research interest to pursue the line of questioning that occurs as a result of the current observations: that the development of musicianship and the perception of its development appear to exist along a spectrum of inherent and acquired skills that are not fully understood, and that aural skills and their relationship to the development of overall musicianship exist along a spectrum of inherent and acquired skills that are also not fully understood. The literature appears to show that while some correlations exist between aural skills and musicianship, the research appears incomplete in the connections about how aural skills development might contribute to overall musical development. The reality of these current limitations and my observations of a possible way forward leads to the foundation of my motive for specifically examining aural skill development.

As an educator, it is my primary objective to find those elusive experiences for students that make for the highest quality and deepest learning. Music education

research continues to develop in identifying such experiences that impact developing musicianship, but while years of trial and error in the classrooms of dedicated educators have given insight into what might make powerful learning experiences, it seems that there is still much to be discovered, and more specifically, what might be discovered in the factors that drive the development of great musicians. Most importantly, it is my research interest and goal to examine not only what might make great musicians, but what factors might possibly influence making great musicianship accessible to all students, regardless of what inherent or environmental factors may exist. This study will focus on the aural aspect amongst possible factors.

Need for the Study

My research interest is to attempt to provide some insight into identifying and examining musical experiences that might be especially impactful in developing musicianship. I am focusing my research specifically on the role of aural skills development as a contributing factor. For the purpose of this case study, I have developed the term *focused aural experiences* (FAE) to describe specific instances where musicians are learning music through a primarily aural means as opposed to other means such as notation. FAEs are also differentiated from more passive aural experiences such as those encountered in a typical rehearsal or practice setting, in which sound is present but not necessarily a primary focus of the learning process. FAEs specifically describe a targeted use of aural learning and active perception of musical characteristics, such as pitch, intervals, harmonies, rhythms, dynamics,

articulation, or balance of music that is either un-notated or requiring additional detail that is un-notated.

This study will more specifically examine the role of FAEs as a component of musical development and explore the relationships of aural skill development to overall musicianship through examining the ways that aural skills and aural skills development are perceived to contribute to overall musicianship. This is a foundation that may open pathways to larger studies that could further examine the components of musicianship and examine the development of musicianship in the context of music teaching and learning. This study may provide greater perspective on what constitutes impactful learning experiences, effective learning experiences, and overall, more musically rich experiences. As stated above, if music were language, perhaps it is not talent or musicianship we are defining, but merely access to language. So then, if music were in fact language, we might then assume all humans are capable of fully enjoying, engaging, benefiting from, and communicating through music, just as all humans can fully communicate, express, learn, and teach through language.

Purpose Statement

This study aims to further examine the possible factors underlying the development of musicianship, specifically, whether there are perceived impacts of FAEs in the development of overall musicianship. This study might inform thinking on the ways FAEs impact aural skill development and affect overall musicianship, and also provide perspectives on the role of FAEs and their utilization in teaching and learning

music. Research by Slette (2014) found that ensembles use what the researcher calls “aural awareness,” (pg. 7) complex individual and collective ways to achieve practical and artistic results in ensemble rehearsals. This current study could build on a similar line of thinking, examining ways in which FAEs enhance music learning in various contexts. The research findings of this current study might lead to different ways of thinking in utilizing aural skills development in the teaching and learning of music or inform thinking in making decisions about the inclusion of aural activities in music education curriculum.

The findings of this research may also provide foundational evidence for further study into the components and factors driving the development of musicianship. From this starting point, other studies might examine the specific role of alternatively utilizing notation as a means of teaching and learning music. There might be opportunities for comparative studies examining the various ways musicians learn, memorize, perform, or experience music through various means and mediums such as aural, notational, rote, or others. This study only provides a single perspective through the lens of three case studies, from which it is possible to conceive discussions on manifold conceptions of music teaching and learning and the development of musicianship. It is my hope that this work may inspire other studies, such that we may collectively gain a greater understanding of the ways in which we experience, engage in, communicate through, and express ourselves through music.

Research Questions

This current study seeks to answer questions regarding perceptions on the nature of the relationship between aural skills to the development of overall musicianship.

While it cannot nor does it intend to establish causal links between aural skills development and overall musical development, it can shed light on how musicians perceive the contributions and role of aural skills development to the development of overall musicianship.

This study examines the perceptions of three individuals in two ways, how they perceive themselves, and how they perceive their environment. As was demonstrated in the theoretical framework, it may be possible to frame music learning as a process of acquiring language. As such, as it is in the case of developing language, perceptions may be developed in conjunction with concepts towards the outcome of acquiring knowledge. For this reason, this current study seeks to shed light on the specific nature of these perceptions, as their nature may prove significant in the process of learning music and developing musicianship.

This study addresses the following questions:

1. In what ways are developing aural skills perceived to contribute, if at all, to developing overall musicianship?
2. Are aural skills perceived as a natural or developed skill, and in what ways?
3. Is overall musicianship perceived as natural or developed and in what ways?

Research Design

This case study design uses an interview technique (Creswell, 2018), through which the participants are able to describe their experiences through dialogue and storytelling. The interviews focus on the experiences of the individuals with the aim of providing detailed descriptions and insights into their perceptions on the nature of their experiences. The role of the researcher is to interview each participant and attempt to capture as authentic an image of the subjects' experiences as possible.

The first portion of the interview details their earliest musical experiences and first memories of experiencing music in various settings such as at home, in private lessons, or musical ensembles. Following along this narrative, the interview carries each participant through their experiences of music in young life, covering the areas of school music, private lessons, ensembles both in and outside of school, and other musical experiences.

The second portion of the interview discusses their experiences with music in their professional lives, both in the ways they continue to engage in music, as well as the way they continue to learn music. In both sections of the interview, are asked to describe how their processes of learning music may have evolved or changed as a result of their experiences.

The third portion of the interview asks the subjects to describe their experiences with working with other musicians, either as colleagues, students, or teachers. As the first two portions of the interview ask them to describe their own experiences, the third

portion ask them to describe how they observe others, how they might observe the experiences of others in comparison to their own, and how their methodologies may or may not compare in regard to learning music. These observations remain strictly within the perceptual and observational realm, and the subjects are not asked to analyze the methodologies of those they describe.

The fourth and final portion of the interview asks the subjects to describe their overall impression, observations, and perceptions on the role of FAEs in aural skill development, the role of aural skill development in developing musicianship, and the relation of aural skills to general impressions of talent, ability, or aptitude. This final portion asks subjects to summarize their experiences with FAEs, aural skill development, and if they perceive any possible connection between these and general notions of musical talent, ability, or aptitude.

Since responses and stories of these three individuals are studied in order to gather multiple perspectives on the nature of those perceptions, this study is also a collective or multiple case study (Creswell, 2018). There are additional components of narrative inquiry utilized to analyze and interpret the stories of the individuals in order to generate as rich and in-depth of a description of their experiences as possible (Roulston, 2006). Because the subjects are asked to recount their musical experiences throughout their lives, this study also utilizes an autobiographical method in order to uncover emic themes (Roulston, 2006). As this study focuses on the nature and

perception of FAEs among individuals, this study may also be classified as an instrumental study (Denzin, 2003).

It is important to acknowledge the necessity of narrative inquiry and interview techniques here since the subjects recount their unique experiences and perceptions. These experiences are unique to each individual, and it would be impossible to categorize or qualify these experiences outside of the context of the individuals experiencing them. It is not the intention of this research to categorize or generalize these experiences, rather, it is to highlight and authentically capture the uniqueness of each subject's experiences. The uniqueness of these experiences then, are not intended to provide a generalization of those experiences as phenomena, rather, they are intended to provide individual perspectives among many individual, unique human experiences captured in as rich detail as possible.

This study involves two layers of inquiry. The first layer describes the experiences of three professional musicians throughout their musical careers regarding their perceptions of their own development of their overall musicianship in relation to their experiences with FAEs. The study captures those experiences and attempts to paint a detailed picture of how these musicians view themselves and the world around them through the lens of music learning and the development of musicianship. Further analysis of their responses attempts to determine if there are any patterns or meaningful themes that uncover insight into the possible contributions of FAEs to each subject's musical development. Finally, the composite of each subject's responses is compared to

one another, and analysis between the subjects attempts to determine if there are patterns, themes, or commonalities between the subject's responses.

The second layer of inquiry in this design examines the perceptions of the individuals in observing other musicians throughout their careers, such as colleagues, teachers, students, and other fellow musicians. As in the first level of inquiry, where the subjects describe their perceptions of themselves, the second level of inquiry asks those subjects to turn their perceptions to the world around them. If the first level of inquiry were considered a microanalysis, in which the subjects describe their perceptions of themselves, then the process and results of the second layer of inquiry might be considered a macroanalysis, in which the subjects attempt to observe the world around them. This second inquiry seeks to identify what the participants perceptions are in describing the development of musicianship in others they observe, what possibly contributes to that musicianship, and the possible role, if any, that FAEs may have in contributing to that musicianship. As in the first layer of inquiry, the responses of the three individuals are analyzed together comparatively to examine for possible themes, patterns, or commonalities that may emerge between the responses.

Philosophical Assumptions

This being a study in perceptions, there are limits to understanding that should be acknowledged. Of primary concern is the reality that perceptions and experiences are unique to the individual, and that there is no way of truly knowing the experience of another's perceptions. Ontologically, one must acknowledge the presences of multiple

and complex realities, especially given the assumption that one cannot truly know anything outside of one's own perceptions. This assumption may be applied on multiple levels for the current study. One, that I as the researcher cannot truly know the nature of experience of each of the subjects, two, that the subjects cannot know of the nature of experience of any others they describe in their responses, and three, that more broadly speaking, that any findings I may discover must be isolated specifically to this study, and can show no more than one perspective of a highly complex network of interrelated experiences, perceptions and phenomena.

There is also an embedded assumption within the research design that the researcher acknowledges there is not any singular description of the nature of reality or experience (Creswell, 2018). It is then assumed also that the findings of this research, any patterns in the data, and themes uncovered through the research process should be reported organically as the research develops and in a manner that acknowledges the individuality of the participants. For the present study, it is firstly acknowledged at the practical level that the respondents are recounting their own life stories. It would be inappropriate to attempt to categorize or describe those experiences from the perspective of the researcher in a way that disestablishes the subjects as primary storyteller. It is secondly important to acknowledge that the personal experiences of each subject are personal to that individual, and that it is the researcher's responsibility to report those experiences authentically as possible.

Yin (2009) further elaborates on the contextualized nature of inquiry by noting that the investigation of the phenomenon itself may not necessarily or possibly be separated from its context. As such, any inquiry methodology should be uniquely situated within the context of the observed phenomenon or experience. In this case, the perceptions of the individuals should be linked to, and informed by, the environment and context in which those perceptions occur. For this study it is important to paint as rich a picture as possible of the environments in which the subjects describe telling their stories as they recount their experiences as it is to describe the experiences themselves. The environments and contexts in which these stories take place are as inseparable from the stories themselves in describing the experiences of the individuals, and the reporting of these environments are as critical to this analysis as the phenomena of the experiences themselves.

Additionally, just as the participants cannot truly know the perceptions of any individuals outside of themselves, I as the researcher cannot truly know, as a matter of my own experiencing, the perceptions of the participants outside of attempting to capture and describe the nature of their perceptions as they are described to me. Epistemologically then, it is important to experience as much of the participants world as possible as what Creswell (2018) calls the *insider*. The interview questions are designed to give the researcher a chronological description of the subject's experiences through open ended questioning that allows each individual to recount rich details of their experiences. The questions are designed to give the researcher as close to an

authentic description of the subject's experiences as possible in the manner that the subjects experienced those realities. In this way, it is an attempt to experience those perceptions in as close a manner as possible to the way in which the subject experienced them, at least within the limitations of the research design.

It is also acknowledged that it is the researcher's personal bias that formal aural training and informal FAEs are the most impactful aspects of musical development, and this bias, while impossible to eliminate, must be mediated in order to maintain clarity of results. Biases cannot be effectively removed from one's perceptions, but they can be acknowledged in how they might distort the trueness of reality. As such, it is important to allow for a polyphony of voices, rather than a singular narrative to guide one's thinking, and allow themes to emerge in an organic and unfettered way (Allsup, 2017).

Ethics

The subjects in this study participated on a completely voluntary basis. Prior to the study, all three subjects received full disclosure on the nature of the study, the time commitment involved, the use, recording, and analysis of the data, and the possible publication of the data. With Institutional Review Board Human Subjects approval, all participants signed consent forms.

The information about the subjects is presented and generalized in a way that individuals cannot be personally identified through the information they disclose. Descriptive information from the participant responses is redacted to remove any personally identifying information. Information in the form of description of

professional activities, professional associates, and accomplishments that might be attributed to an individual are also redacted or generalized so that no individual in the study can be directly identified through their responses to the interview questions.

Limitations

The results of this study aim to shed light on the experiences of three specific individuals, and the experiences of these individuals only. While these experiences may inform thinking and discourse in ways of thinking about aural skills and aural skill development, the results herein are specific only to these three participants and not generalizable to all possible cases. Each participant is bound to their own experiences in the context of their lifetime, and it is acknowledged that neither the researcher nor the participant can truly provide a truly exhaustive narrative of all experiences (Denzin, 2003). Significant additional studies over a much broader sample range would be required to begin to inform any larger implications. The limitations of self-reporting are also acknowledged, with results being able to extend only as far as participants are skilled in identifying and articulating their perceptions. While these limitations are present, self-reporting remains a valuable and viable tool in supporting research inquiries.

The perceptual limitations of the individual present unique challenges when describing the nature of reality outside of themselves, since it is a necessary assumption that one cannot truly know anything outside of oneself, including perceptual

observations external to one's own consciousness. This limited reality poses two prominent challenges in regard to research in this field.

One is the problem of reporting and observing as a researcher since there is an assumption of perceptual limitation. This issue is addressed through the two fold process of one, attempting to capture the perceptions of a subject on their terms, in other words, to capture those perceptions as a unique artifact without the addition of the researcher's bias, and acknowledge the uniqueness of those perceptions as uncategorical, and two, to acknowledge that the researcher themselves can only relay the perceptions of the subject, but not necessarily relate to those perceptions, and that the perceptions of the subject are uniquely theirs, not generalizable outside of the subject themselves.

The second problem is an issue that the present study attempts to address. It is a natural progression of logic that one questions how any individual can construct knowledge and meaning of phenomenon outside of themselves at all, given that one cannot truly perceive the nature of a subject outside of themselves or their perceptual limitations. What must follow then, is a process by which the individual may observe and assimilate phenomenon outside of themselves such that those external observations become internal perceptions, and thus a part of the individual's own experience. This problem, and its potential solution, are briefly outlined in the theoretical framework of this writing. The theories of Vygotsky provide a pathway, via the mediation of a mediating individual, that allows the student to assimilate in progressive order,

perceptions, concepts, and knowledge, in order to build understanding of themselves and the world around them.

In regard to the philosophical limitations inherent within this research, the theoretical framework dually provides a basis for the research itself, while simultaneously addressing the philosophical assumptions and limitations inherent within. Namely, it is through the interactive process itself that we as individuals may have a pathway towards knowledge of things outside ourselves.

Definitions

Absolute/ Perfect pitch: the ability to identify or generate discrete pitches without the use of a physical reference pitch (Elmer et.al., 2015)

Audiation: the process of manifesting a sound in the mind without physically hearing that sound (Liperote, 2006; Gordon, 2007).

Aural skills: for this study, the various abilities the musician uses to participate in music through listening. This includes but is not limited to learning melodies by ear, transcribing melodies to paper from ear, and discerning pitch, harmony, timbre, rhythm, and arrangement or orchestration through listening.

Aural training: for this study, any formal education in the use of aural transcription, pitch, rhythm, timbre, and harmonic identification, or other aural skills such as through individual private lessons or groups lessons at a university or school of music. This is differentiated from the aural experiences that naturally occur in any musical activity.

Bioecopsychological Context: The contextualized combination of the individual's internal perceptions and the interaction with the external environment through mediation (Rio & Alvarez, 2007 p. 282).

Focused Aural Experiences (FAE): for this study, any informal or formal participation or practice in the directed use of aural transcription, pitch, rhythm, and harmonic identification, or other aural skills used to practice and perform music.

Inner Ear: For the purpose of this study, inner ear, or simply ear, is an alternative term used to describe aural skill, specifically those associated with audiation.

Mediating Individual: For the purpose of this study, this refers to any individual fulfilling the role of mediator, according to Vygotsky's theory. This may be adult parent, or other family member, older sibling or other family members, mentor, teacher, or friend, or other individual fulfilling the role of mediator for the individual learner.

Musicianship: broadly categorized, the skills associated with high level music creation. High performance potential, sight singing skills, composition skill, high technical facility, improvisation skill etc. For this study, it may be alternatively used as a synonymous term for talent, aptitude, or ability.

Sign: The artifacts of experiences and interaction that enable the individual to engage in learning through a mediating individual. These are specific stimuli such as speech, reading, writing, and social behaviors (Vygotsky, 1999).

Synesthesia: The phenomenon in which the individual perceives one sensory object simultaneously with another. For example, sounds as colors, tastes, or shapes (Oxford University Press, n.d.).

Vibrato: A sonic effect producing an oscillating sensation of the sound to the listener created by a variation of pitch (Oxford University Press, n.d.).

Chapter 2: Review of Related Literature

Introduction

This literature review begins with an overview of some historical conceptualizations of talent or the more acceptable scholarly term musicianship. It continues with historical and current perspectives on aural skill development and learning music by ear as opposed to learning music through notation. It concludes with a statement on how these different components lead to my research interest in exploring focused aural experiences (FAEs).

A pathway between ability, talent, learned skills, and acquired Knowledge

Nature vs. nurture and general concepts of talent

My first inquiry within this research comes with the simple question of how talent is defined in academia. As stated previously, talent and its connotations seem to be spurned by those who do not wish to imply negative associations, or perhaps even worse, an elitist or exclusionary attitude in music. These apprehensions are not lost on me, however I found it necessary to, at the very least, paint a broad canvas upon which to begin to lay my frameworks of thinking in this research. I begin with a historical approach, and first acknowledge the historical use of the concept of talent in its use and attempts at identifying and measuring it.

Some of the first attempts at measuring musicianship, alternatively termed *musical ability* or *aptitude*, occurred in the early to middle 20th century and were carried out by researchers such as Carl Stumpf, Carl Seashore, Raleigh Drake, and

Edwin Gordon (Treichler, 2013). Treichler (2013) explains that Stumpf attempted to survey musicians who self-reported their own musical abilities, utilizing metrics such as pitch recognition, pitch retention and chord identifying. The tests themselves were self-administered, and the results were correspondingly unverifiable. In self-selecting, many participants also biased themselves as high aptitude individuals, with Stumpf also counting himself amongst that group. Treichler goes on to describe how, following the completion of his PhD, Carl Seashore established a laboratory at Yale University, where he developed aptitude tests based on an early concept of music psychology, where subjects' aptitude was determined through their discrimination of specific sound frequencies, such as in intervals, chord qualities, or the timbre of specific instruments. While these tests were even used at Eastman school for a time, they were not widely accepted or supported. Following in the pattern of Seashore, Treichler finally discusses how Raleigh Drake and Edwin Gordon devised their own version of a musical aptitude test, however none were immediately conclusive. In fact, as each found, each successive test appeared to paint progressively more complex and less defined notions of what constituted musical aptitude. While each of these researchers provided some evidence of the existence of inherent musical ability through the identification of traits that could be considered precursors to developing musicianship, such as accuracy in pitch and rhythmic discrimination, they could not provide conclusive or repeatable results that accurately or consistently identified musical ability, nor could they reliably predict long-term musical success in a student. These early tests were based on musical

ability or aptitude within a firmly cognitive approach that attempted to emphasize a cognitive basis for musical aptitude or ability. In response to my initial inquiry then, from a historical perspective, early attempts at defining aptitude accomplished the exact opposite, that musical ability was a far more complex phenomenon than a purely cognitive one, and that it was not something that could be defined through a single metric, such as pitch discrimination.

My second inquiry lies within the domain of nature versus nurture. As described earlier in my theoretical framework, there possibly exists a spectrum, one side in which skill and abilities are due to preexisting conditions inherent in the individual, and another in which purely environmental stimuli profoundly affect the individual and dictate their skills and abilities. In the specific question of whether musical ability is acquired or inherent, several researchers have found similarly inconclusive evidence. Several studies had demonstrated some supporting evidence for both inherent musical ability and acquired musical ability, and the possible inherent traits that might predict overall musical ability (Bond, 2011; Hoffman, 2015; Judge, 2009; Stollery, 2002; Poćwierz-Marciniak & Harciarek, 2021). Likewise, the studies of several researchers (Norton, 2005; Segal, 2017, Carlsen, 1969; Kliutchko, 2015; Bond, 2011; Hoffman, 2015; Judge, 2009; Stollery, 2002) who examined the question of whether musical ability might be determined by preexisting or environmental characteristics, again found some evidence for both. Like their earlier 20th century counterparts, these studies struggled to pinpoint a more defined means by which aptitude might be defined or

measured. Rather, they unintentionally contributed to the body of research that paint musical ability as a highly complex phenomena not linked to a specific or defined metric.

Ukkola- Vouti (2013) attempts to take a different approach that examines a genetic basis and did find some evidence for the inclusion or exclusion of specific genes that might influence music aptitude. This study found some links between the presence or absence of certain genes that appeared to correspond with changes in areas of the brain associated with music perception. However, due to the small sample size and the inability of the research to limit external neurological factors, this study found it impossible to conclusively link these specific genes to manifestations of musical ability. Understandably, the limitations of this particular study appeared to overpower the possible conclusions.

Taken together, the majority of these studies, while providing some evidence towards or against the idea of inherent musical ability, do not paint a conclusive picture any clearer than those carried by Seashore, Drake, and Gordon almost a century earlier. What is most apparent is that, currently, as it predicably remains, musical ability is currently too complex of a phenomenon to attempt to define. It resists attempts to compartmentalize it through any notions of observations or tests. As with any other phenomenon of human experience, musical ability proves to be a phenomenon that proves to be more than a simple single definition or set of clearly defined factors.

If one cannot define talent, pinpoint its origin, or predict its manifestations, perhaps it would at least be a productive endeavor to determine what one's perceptions of talent or musicianship are. Rather, if we cannot know what talent or ability is, perhaps we might discuss what we think talent or ability is. Some more contemporary studies have undertaken this inquiry and considered the perceptions of musical ability and how they are perceived by musicians, educators, and non-musicians. Shouldice (2019) finds that in the case of one teacher interviewed, talent was interpreted as a set of acquired skills that could be developed in any person. Shouldice's study also suggests that teacher perceptions of student abilities influenced their actions in the classroom, demonstrating that even perceptions of student ability had real world implications for practice. Similar findings are identified in Jaap (2015), in which several music teachers were interviewed on their perceptions of musical ability. While these teachers avoided using terms of gifted and talented as identifiers, they acknowledged the individual and varying capacities of different students for acquiring musical skills. They also believed that high ability could be achieved by any student given the right environment.

In a qualitative analysis involving 660 individuals about their perceptions of musical ability, Hallam (2010) finds that the respondents identified rhythmic sense and expressive capacity to communicate music as the strongest indicators, while reading ability, improvisational skill, technical skill, and conceptual skills were perceived as less connected with perceived ability. Hallam also finds that the individual's

perceptions of what constituted musical ability seemed to be tied to the musical environment in which they were immersed. For example, non-musicians, who might primarily engage in music through listening, found musical expressiveness to be significant. Meanwhile, professional musicians found reading ability to be significant, and still further, amateur musicians valued aural skills and improvisation. Stabell (2018) finds that when interviewing students about perceptions of talent, they tended towards talent as an absolute value, such that it was a static value that could not be affected by environmental factors, such as amount of practice. The students did also acknowledge, however, the need for practice and effort in order to realize that talent into performance potential. So, while talent was perceived as a static element, it still required some measure of action and mediation in order for it to manifest. The students in this study perceived talent as an innate characteristic, and along with skillful teachers, rich musical experiences, and strong work ethic, were components of a larger ecosystem that enabled musical success.

These collections of these studies point towards varying perceptions of ability that exist along a spectrum from inherent to acquired ability. There is some consensus among these findings that at least the perception of some form of natural ability is acknowledged and observed by individuals. This is combined with the reassertion that along with some observed ability, environmental factors and practice are also present factors in developing musicianship.

To conclude, the findings of this first inquiry indicate that musical ability, predictably so, exists within a highly complex network or phenomena and perceptions, such that it, thus far, has defied attempts at either quantitatively or qualitatively defining, measuring it, describing, or even observing it. As follows, I find I must narrow my research focus towards a more specific element of musical ability as it relates to the development of musicianship: the development of musicianship through aural means.

Development of Aural Skills as a Component of Musicianship

My second inquiry delves further into the development of musicianship through a specific aural means. If it were the case that musical skills are acquired via aural means through the mediation of an mediating individual, and that these skills are possibly acquired in a similar manner through which language is developed, it would stand to logic that the development of musical skills via an aural means may be a significant contributor to the development of overall musicianship. If this were the case, what follows is an examination of whether musical skill acquired through aural means contribute towards overall musicianship.

Within the overarching concept of developing musicianship, aural skills present themselves as a specific skill that warrants further examination. Similarly, as in the examinations presented earlier, the question may be asked whether they are a developed skill or an inherent characteristic to an individual. This is differentiated from my initial inquiry in that here we examine specifically those skills centered around aural skill

development, rather than general categorizations and definitions of talent. While my previous inquiry dealt with definitions of talent, of which aural skills might play a part, this present examination deals specifically with the dimension of aural skill development itself, as a specific attribute either inherited or influenced by environmental factors.

As it was in my initial examination of the general definitions of talent and attempts at measuring talent, several studies that have that been conducted to examine the question of inherent versus inherited aural ability (Norton 2005, Segal, 2017, Carlsen, 1969; Kliutchko, 2015) have found evidence in the literature for both inherited as well as environmental factors in developing aural skill. This bears resemblance to the findings of researchers examining the development of overall musicianship, accomplishing little more than establishing that, like general notions of talent, aural ability appears to be a highly complex network of interrelated skills and environmental factors that are ill suited to strict definition and categorization. Aural skill development, and any resulting aural ability, also appear to be connected to the musicians' background, with musicians having greater aural ability when they had more experience using aural skills (Woody, 2010). These findings are understandably predictable, however what is more important to note is that similarly, as in the case of studies more broadly examining talent, aural skills, aural skill development, and aural ability appear to be highly contextualized within their specific uses and environments.

On the topic of the perceptions of aural ability, a narrative study of three music majors suggests that, while a variety and range of abilities and self-perceptions of aural efficacy are present in college music majors, once initial perceptions of aural proficiency are established through their first semester, those perceptions stay with the student later in their musical career (Bounviri, 2015). Shouldice (2019) reported that several other studies (Brändström, 1999; Pajares, 1992; Rosenthal & Jacobson, 1968; Scripp et al., 2013; Sloboda, 2005; Sloboda, Davidson, & Howe, 1994) found similar evidence of “self-fulfilling” (pg.200) prophecies in which self-perceptions of musical ability affected performance or the person’s likelihood to continue in music. These studies demonstrate the connectedness of perceptions and manifestations, such that as one views one’s world, one shapes one’s world, and as one thinks, one acts.

Further research on aural training in the specific phenomenon of absolute pitch and its link to musicianship provides some additional insight into the relationship between musicianship and aural skills. Research in the phenomenon of absolute pitch, for example, suggests absolute pitch is a memorization of discrete pitch and the ability to label that pitch with a name (Elmer et. al., 2015), suggesting absolute pitch may be an acute use of audiation, or the skill of internally reproducing the character of a sound independent of the source of that sound (Liperote, 2006; Gordon, 2007). Additionally, the skills associated with sensitivity to pitch discrimination and timbral variation may be linked to similar skills in language processing and discrimination of spoken vowels

and consonants (Kempe et.al., 2015). This might suggest aural skill is a mode of language acquisition.

The findings of my second inquiry reveal aural skills as a microcosm of phenomenological and perceptual elements situated similarly as and within the larger framework of musicianship. Both the phenomenon and the perception of aural ability exist on a spectrum ranging from acquired to inherent skills. More interestingly perhaps, are the findings that aural skills are specifically contextualized to their environment, that the perceptions of one's own ability inform the real manifestations of that ability, and that aural skills development may indeed develop along a similar path to language development.

Developing Musicianship Through Aural and Notation Based Means

My third and final inquiry delves into the specific relations and comparisons between learning music via aural means and learning music via notational means. As a part of this study, I sought to examine if there were any perceptual differences in the effectiveness, or the value of learning music via aural means as opposed to, or in conjunction with, learning music via notational means. If such distinctions existed, whether quantifiable or perceptual, it would stand to warrant an examination into any possible measurable distinctions.

In a broad comparison of aural based instruction versus notational based instruction, a study examining aural and modeled instruction versus visual notation-based instruction found students who engaged in learning music through aural and

modeled means performed better on musical posttests (Watkins Farnum Performance Scale) than students who engaged in a notational based approach (Haston, 2010). While the results are isolated to this one study, it demonstrates the potential for measuring real quantifiable data. Another study showed that piano players who were provided a reference listening example when instructed to memorize a melody performed better than players who memorized based off notation alone (Cash, 2015). While the results of this study may be due more to the quantity of musical exposure, namely the addition of listening to notation as opposed to notation alone, it again demonstrates the possibility to measure such differences in meaningful ways. The studies above, while isolated, demonstrate the possibility of measuring quantifiable differences in learning music via aural means as opposed to notational means.

Finally, in a short inquiry into the possible perceptual differences between learning music via aural means as opposed to notational means, a study introducing ear training teaching concepts to teachers, teachers reported positive outcomes and increased student creativity and responsiveness when introduced to aural-based methods of instruction (Varvarigou, 2014). Similarly, students exposed to an ear training course over several weeks demonstrated higher proficiency in musical posttests (ABRSM) in the categories of rhythm and tonal centering than a control group only instructed through notation (Baker & Green, 2013). Additionally, a further meta-analysis of literature in the correlations between sight reading and other musical skill done by Mishra (2014) found in a review of 92 studies that the strongest correlations

occurred between sight reading proficiency and aural training, and sight reading and improvisation.

Conclusions

The findings of the literature analysis reveal overall musicianship and more specifically aural skill development to be a highly complex phenomenon in which skills exist on a broad spectrum of inherent and acquired skills. Additionally, the perceptions of those phenomena and their development vary as greatly as the skills themselves. Perhaps more profoundly, the perceptions of those skills also appear to inform the manifestation of the skills themselves. Finally, in the questions surrounding aural versus notation-based learning methods, there do appear to be unique measurable outcomes regarding each of the two approaches to developing musicianship.

The results of this literature review also reveal the power of perceptions, such that they may inform the real-world manifestation of phenomena. In summary, the results seem to reveal that as one thinks, one becomes. By an inverse relationship, it appears that as one experiences, one becomes those experiences, and as one becomes, one thinks. Put more simply, reality influences perceptions, and those perceptions in turn influence reality. As these realizations have come to light, it becomes apparent that a study in perceptions may be a path towards realizing and observing the nature of the real phenomenon itself. This study attempts to navigate this path.

Chapter 3: Methodology

Introduction

This study examined the perceptions of three professional musicians on the possible role of FAEs in their musical development, as well as their perceptions of whether FAEs seemed to contribute to the musicianship of their peers, colleagues, teacher, students, etc. These perceptions were weighed against each subject's own perceptions of musicianship and general notions about the development of musicianship and inherent or acquired musical ability. The methodology for the study is presented in this chapter.

Study population

This study used a sample of convenience and includes three professional musicians who are within close geographical proximity to the researcher. Each subject is also either a personal colleague of the researcher, a mentor, or has had a professional working relationship with the researcher. Each one represents a variety of backgrounds as performers, teachers, arrangers, and composers. One is from a primarily classical background as an instrumentalist in a symphony, the second is from a primarily jazz background as an instrumentalist, a composer and arranger, and a big band leader, and the third has taught both classical and jazz throughout his career of teaching music in a public high school. All three participants are established musicians, educators and/or performers in their careers. All three participants are drawn from the Pacific Northwest region of the United States of America.

Study design

In order to facilitate efficiency and convenience for the subjects, this study was conducted as either an in-person or online interview. In each interview, the researcher asked each question and the subjects had the opportunity to answer the questions in as much detail as they wished. The researcher asked clarifying or elaborative questions in order to gather as complete an impression of each response as possible. The subjects were encouraged to elaborate with as much detail as possible. Each interview session was estimated to last approximately two hours, with one to two sessions required for each subject in order to complete each interview.

After each participant was interviewed, their responses were analyzed for emerging themes (Creswell, 2018) following a progression from a within-case analysis of each individual case to a cross-case analysis to uncover any possible themes across the three cases. In each of the cases, possible themes were identified, however it is important to acknowledge that any themes uncovered only served to inform and highlight the complexity of the case and were not intended to generalize the experiences even among these three individuals (Creswell, 2018).

Instrument

The instrument for this study was a series of interview questions that asked participants about the history of their musical experiences throughout their lives, including informal musical education at home, private lessons, ensemble experiences in school and out of school, and music teaching and learning experiences. The interviewer

utilized a script to guide and facilitate the interview, but the questions follow the most organic lines of questioning depending upon each subject's responses. As such, the interview flowed on and off the pre-established script as the subjects gave their responses, and the researcher asked elaborative or follow-up questions.

Each question was administered verbally, so subjects were not provided with the questions, however they were encouraged to ask the researcher to clarify or repeat questions. In order to facilitate organic and natural dialogue, the researcher periodically asked questions in varying order, skipped questions, or rephrased questions if the subject's responses moved towards a certain direction that necessitated alterations or adjustments.

Participant recruitment

The researcher contacted the subjects selected for the study via email or phone and briefly explained the task, the research, and the commitments required. The researcher then arranged interviews. Before the meeting, the subjects were told that the study was voluntary and anonymous, and that pseudonyms for each subject were to be used in all data transcriptions and reporting. The subjects were told there would be no compensation for participation, and no penalty for non-participation or withdrawal. Participants were informed that they were free not to answer any questions they found objectionable.

Participants were not asked for any purposefully identifying information. Descriptive information from the participant responses was redacted to remove any

personally identifying information. Information in the form of description of named professional activities, professional associates, and accomplishments that might be attributed to an individual were redacted or generalized so that no individual in the study could be directly identified through their responses to the interview questions. Informed consent was obtained from each participant via electronic means. Each participant was sent a link to a consent form for signing and returning digitally.

There were limited to minimal risks involved in participating in this study. Subjects were asked about their individual experiences in music. There was a limited risk of a possible feeling of invasion of privacy, since subjects were asked about their personal life experiences, as well as a potential that questions were asked that recalled undesirable memories or feelings. Subjects were informed upfront that if they felt it appropriate to opt out of any question at any time, for any reason, they could do so.

Data collection

All responses were recorded in both written field notes and digital audio and video recording, as well as digital transcription. Following interviews, the recordings were reviewed and combined with the field notes. The two sources were then transcribed into text into a single document that serves as the unified source material for the analysis. This data was summarized and conclusions about possible narratives were examined.

All interview data has been stored digitally on the researcher's computer on a secure hard drive and a cloud folder. The folder, hard drive, and computer are password

protected and not a shared device. Only the researcher has access to this data. After a period of five years all data will be destroyed and deleted from the hard drive of the computer.

Data analysis

The combined data from this study amounted to a combined approximately twelve hours of interview material. Each of the three interviews was transcribed from the raw tape to a separate document, with each subject having their own transcription file where the audio from each interview was transcribed to text. From this transcription file, the researcher then generated a summary of each interview that isolated and recorded key phrases relating to the interview questions. These summaries formed the basis for the content of chapter 4 of this study.

From each of these summaries the researcher then compiled data that related to the three research questions, compared the results to the findings in the literature review, and compared the data for any connections to the theoretical framework. These findings form the basis for chapter 5 of this study.

The three subjects were first analyzed on an individual basis, and later analyzed together in order to observe any relevant comparisons or similarities. This study only observes and notes possible themes between subjects but does not generalize based on these findings. The primary focus remains the uniqueness of each subject's experiences.

Chapter 4: Results

Introduction

Each subject interview lasted an average of three hours. All three subjects formally and informally experienced music in several ways early in their lives. For two of the subjects, music was a highly prominent and important part of their young lives, while for the third, it was present, but not a major part of life until later. Each of the three subjects reported similar school music experiences in their primary, secondary, and post-secondary educations, and all three studied music formally at the university level. Each subject described their first professional experiences after graduating university, and all spent their careers performing and teaching, with two also arranging and composing.

All three subjects described aural learning as a part of their experiences and found that our interview process enabled them to unpack those impressions in a way they had not done before. All described memories of experiencing focused aural experiences (FAE) in various ways throughout their lives, some of which they had not consciously thought about until our interview. Though each describes the role of FAEs in unique ways, they all acknowledged that they were a part of a larger ecosystem of learning that included aural learning, reading notation, learning by doing, learning by mimicking, and learning by apprenticeship. The results of the study are presented in this chapter.

Demographics

At the time of this study, all three subjects are professional level musicians who have or have had established careers as performers, educators, arrangers, or composers, and have dedicated the majority of their lives to the study of music. All three subjects have a minimum of twenty years of experience in music.

Andy is a professional horn player in a major US symphony orchestra. She began her studies early in childhood and grew up in a musical family, and continued performance-oriented studies at highly competitive middle school, high school, and later at conservatory level programs. She then spent her professional life mainly playing horn professionally for orchestras, as well as doing some freelance work in chamber ensembles, and teaching private lessons.

Dan is a retired music educator who spent most of his career teaching high school band. He began his studies in music early as well, growing up in a musical family, and receiving childhood lessons from his father who was also a public-school music teacher. Dan completed his junior high school studies and high school studies participating in his father's bands, which were highly competitive, high-level ensembles. He continued on to pursue music studies at two different universities before spending ten years travelling around the US playing in many different bands, spanning many different genres including jazz, rock, funk, pop, and other styles. Following this period, he returned to his hometown and inherited the high school music program from his father who was now retiring. He stayed in music education for over twenty years before

retiring. In that time, his ensembles won many awards in both jazz and concert music, and he continued the legacy set by his father before him.

Tom is a professional music arranger and educator who has spent equal parts of his career performing, arranging, composing, and teaching. He began his musical life listening to his father play piano, though he himself did not receive lessons. He began more involved musical studies in middle school and high school, where he participated in school music through the school ensembles. During this time, he mostly spent time jamming with his friends in popular music jam bands while also taking lessons in classical and jazz piano. He entered college and began with a performance focus, but later switched to arranging and composition. Following college, Tom moved to LA to pursue a career in arranging and music production for some of the top artists in LA at the time. He spent some years there before he decided to shift again and move into the area of jazz education. Tom opened a non-profit jazz school to teach jazz to students of all ages. This school became highly successful, and Tom continues to head this program that offers music opportunities to people in the community, young and old alike.

Subject Number 1: Andy

The Early Years: Discovering a Sound

The first subject, hereafter named Andy, is a professional musician who is currently performing with a major symphony orchestra. Her responses during the interview spoke to a deep immersion in music at an early age. It was also evident in listening to her that this immersion allowed her to excel in music from an early age so

that she could eventually perform at the professional level and eventually attain her position in a major city symphony orchestra. In part, she spoke of how she attributed her successes to this early immersion, and she shared a rich narrative of how her experiences led her to her achievements. She also shared her perspectives on how her publicly perceived ability both helped and hindered her progress in her formative years.

What was most evident and a recurring theme in Andy's life was a deep immersion in music at an early age. At one point, when I asked her about learning to read music when she was very young, she commented how she could not remember a time when she could not read music. By elementary school, Andy was already engaging in and reading music at an advanced level beyond her peers.

Andy grew up in a very musical family, this was immediately evident when I asked her about her earliest musical experiences. It would seem that she quite literally grew up in a musical household. She recounted how everyone played instruments and how the family was always playing music. As early as age 4 or 5, Andy recalled music of all genres always being played around the house, both live and recorded. She also recalled watching music videos of Prince and the B52s on the TV and listening to oldies tunes on the radio. Her mother played oboe and percussion, and her grandmother sang old Slavic Folk songs from the Russian Church. In those early years, the whole family participated in and consumed a rich variety of music, and Andy, as she reminisced, did not remember a world in which music was not a major part of her daily life.

When I asked Andy about her early memories about learning music, she recalled similar experiences, unable to remember a world without music and unable to recall a time when experiencing music was not a part of the fabric of daily life. Her earliest music lessons were Eurhythmics lessons that she did with her mother as early as age 1 or 2. She could not specifically recall these earliest experiences but had heard about her mother teaching her music as soon as she could walk. Andy did remember Suzuki violin lessons at about age 3 and 4, and piano lessons around age 5 or 6. Interestingly, she also recalled not being the best student during her lessons. At one point during her violin classes, Andy recounted how she apparently threw down the violin and refused to play any more for the day. Ultimately, this one outburst did not define her entire early life, but she did admit being a goofy kid who enjoyed music but was not entirely devoted to serious practice or study.

Andy shared experiences of simply being a child who enjoyed experiencing music in its many forms. She remembered relatively mundane experiences in her early lessons that included method books with small group lessons in Suzuki violin, and similar experiences with private lessons on piano. There were lots of progressive studies, lots of notation, some music theory, and overall, a seemingly fairly typical private lessons experience.

She only remembered fragments of those lessons; while she could actually still play the songs she learned on piano all those years ago, her general recollections were foggy. The things she could remember had little to do with actual music, but

fascinatingly, painted a vivid picture of the world in which she lived at the time. She could remember a green book from her piano lessons with a big music note on the front. She could remember that her piano teacher lived near a bakery that they would pass on the way to and from lessons, and also a little store where sometimes her mother let her buy stickers. She could remember vividly her piano teacher's house, and that she had little birds that sang nonstop during lessons. Of the actual music, however, she only retained passing recollections.

As we moved into her elementary years, Andy recalled experiences of both formal and informal learning via notation, and she also made her first mention about learning without notation, referring to that as learning by ear. She told of how, in addition to playing instruments, her whole family had always sung by ear, most especially her grandmother and mother. Notably, Andy told of how her mother was an alto singer, performing in the church choir. Because of her alto range, Andy recalled that her mother rarely sang directly with melodies, but rather harmonized them and improvised lower harmonies along with the songs. Her mother would always do this with music on the radio (even today, when Andy sings with her mother, they both improvise harmony along with their favorite songs). Andy believed that these experiences helped develop her ear (auditory skills) which then transferred to her success in playing French horn later.

Meanwhile, alongside singing by ear at home, and being immersed in music worlds of all kinds, Andy also began experimenting with wind instruments. Having

studied violin and piano from young childhood, it was in her elementary years that Andy also took up flute lessons, this time given by her grandfather. This was her first experience with a formal, identified emphasis on “knowing sound,” as she described. Her grandfather taught embouchure and breathing and used a method book, but more profoundly, she remembered that he taught her how to always listen for her sound. It was in these lessons that Andy said she found her calling in wind instruments.

Like many young children of elementary age, Andy participated in elementary general music courses and beginning band ensemble through the public education system. As evidenced by her extensive experiences in music even before elementary school, it is unsurprising that Andy recalled feeling like she was ahead of the other students in the class. She recalled how, at one point during an ensemble percussion lesson, and she remembered feeling a bit shocked by the amount of crashing and bashing in which the other students were engaging, with little regard for pulse or organized rhythm. She remembered feeling like the other students were playing their instruments incorrectly, since her mother and father had all of these instruments at home, and she had been taught the proper rhythms that corresponded with each of them. It was also this time that Andy formally began playing the flute in elementary band. She did not remember the reason, musing there might simply have been an available flute in the house, or perhaps she wanted to play a different instrument from that of her bassoonist brother.

Andy recalled similar experiences once she moved from elementary music to band class. She already knew how to read musical notation, having received lessons from her grandfather, and generally, she felt that she was more advanced than the other students. As in general music, she felt that the other students did not seem particularly invested in producing high quality music beyond the generic cacophony of general music class. Despite this, Andy still enjoyed the experience, and loved playing with the other musicians in the band, despite their differences in standards.

Andy concludes that, while her elementary music experiences were not the most musically enriching, they did open many doors that allowed her to explore and find her later passions. In her time in elementary school, her experiences included a wide variety of music playing and listening both at home and at school. In general, she felt that her home and private lessons on the violin and piano, learning the flute with her grandfather, and summer music camps, afforded her a place to excel since she was so far ahead of her classmates in school. Despite the differences, Andy did enjoy every experience, even the more chaotic ones.

It was during these years that Andy also had her first experiences with perceptions of being talented by others. She remembered being featured in concerts when she played the flute and receiving the opportunity to play solo performances at concerts. In one instance, around 5th grade, she recalled playing a trio with two other flautists who were classmates. Both were fairly adept, however during this performance they both lost their places and stopped playing entirely, leaving her to finish the

performance solo. At the time, she felt confused as to why the other two would stop, since she had no issue with the level of music, nor with playing in front of an audience. Andy had been performing recitals on all instruments as long as she could remember. Of course, she now realizes that her experience in performing made her flute trio performance very routine, while it may not have been so for her classmates.

In addition to her band experiences, it was around this time that Andy began singing in the school choir, another realm where she excelled and was praised. Andy had a natural vibrato and, combined with her experience of knowing how to read music, she progressed quickly and was acknowledged as such by her peers and teachers.

Middle And High School: Developing a Sound

Throughout the course of our interview, I frequently inquired about the use of learning music by ear in Andy's early years. She recalled in general that much of her early education was primarily notation based. There were notable exceptions, such as in the case of her grandfather teaching her the concept of listening for sound and timbre in the flute, or her and her mother harmonizing pop songs on the radio, but generally, both in her private lessons as well as in general music and elementary band, practice and rehearsals remained tied closely to the notated page. She admitted to me that she wished she had more aural learning experiences as a child. She said that apart from some call and response in choir class, such as learning melodies from the piano, she did not recall any specific instances of learning by ear, at least in a strictly formal sense. Later on, as we moved into her middle and high school years, more of these types of

experiences became a part of her education as she continued to encounter more teachers and new ways of thinking.

Andy's experiences of being dubbed talented did not stop in elementary school. In middle school, the band was lacking a French horn, and Andy was selected based upon the merit of her flute playing to be transferred to French horn. Her teacher also placed her in the advanced band as well. It should be noted that this time Andy was attending an extremely competitive and high-level middle school program. This was somewhat of a culture shock for her exiting elementary school. Here, everyone wanted to excel, and the teacher expected everyone to excel. It was at this time Andy remembered she first felt truly challenged and excited by her school music ensembles.

The increased level and expectation of middle school band came with some changes in the rehearsal design of her ensembles. While an emphasis on notation-based precision still dominated the rehearsal landscape, albeit at a much higher level than her elementary experiences, there also began instances of beginning to listen to recordings. These were Andy's first experiences formally being asked to listen to a model and emulate it in a class setting. As she progressed into high school these experiences intensified. Andy remained involved in a diversity of music ensembles including the orchestra, the jazz band, and the choir. The high school that her middle school fed into was no less in quality and prestige than her middle school, and perhaps more so. The jazz program in particular was nationally and internationally known. The director of this ensemble particularly emphasized listening to recordings of the masters and

emulating their sounds. Andy recalls these were the first experiences that she remembers learning parts about music that could not be notated, such as style and interpretation. Especially in the jazz program, where she sang vocals, the music was all about swing and feel, and this was all taught through listening and emulating the recordings.

Andy also continued to progress in her other music studies where similar experiences of diversification occurred. Her orchestra, also at an extremely competitive level, utilized recordings as a means to be able to understand the music on a technical level. She reminisced humorously about how her high school orchestra had no business attempting Prokofiev Symphony No.5 but did it anyway, and the only way they could even have a chance was to listen to the recording to understand how the parts were meant to fit together. In fact, she elaborated on the fact that when they attempted it before the recording, many students did not like it because they were playing it so inaccurately that they believed the piece was poorly written. It was only when the director played the recording that the students finally understood and were able to appreciate the complexity of the music. Unfortunately, she remembers that they never quite pulled it off, but it was still as fun of an experience as any.

One more thing that is important to note, possibly more profound than even her highly transformative school experiences, were the private lessons that she continued to participate in during this time. Andy had the opportunity to participate in summer music camps all through her school age years. It was here that she began lessons with a

pair of horn players who would profoundly influence her later playing. It was these horn players who first taught her the practice of audiating pitch intervals, or the internal production of pitch intervals without external stimuli in order to identify and produce them. They taught her mnemonic devices for the intervals and began to teach her how to recognize the sound and feel of individual notes and intervals on the horn and how to identify and internalize the resonance of different intonations and chords. These lessons were executed without notation, and the emphasis was on feeling the notes and knowing the horn. As she most adeptly characterized it, it was “music from the heart.”

In her middle and high school years, it appears that Andy was able to find her true passion and sound in French horn. She recalls how it came naturally to her, and she attributed this to all of the other experiences in music she had before that allowed her to excel. She experienced a rapid and dramatic transition from the expectation and level of elementary band into middle school band, and then again into high school band and orchestra. It was also in these years she began to encounter teachers who began using some aural learning techniques, both formally and informally.

College: Relearning the Fundamentals

Andy’s first experiences of formal ear training, in this case referring to formalized lessons focused on listening and transcribing melody, or learning to recognize and identify intervals, harmony, and rhythm, were in the college setting. Andy attended Juilliard, and there found a similar jump in the level of expectation as she had experienced going from elementary to secondary school. Andy recalls the ear

training placement and theory exams, and recalls that despite having a good ear, she felt naïve. She felt as though she were expected to know some level of theory and ear training already. Despite her early music experiences, she still felt behind some of the other students, who were already knowledgeable in ear training and theory even before attending. Andy specifically remembers the ear training placement, where she was asked to identify chords, and though she knew what she was hearing, she had no names for the sounds, since she had no formal training in harmony such as augmented or 7th chords.

As a result, Andy was placed in remedial theory, even though she was placed in the regular ear training course. She recalled the pang of embarrassment, knowing that she felt she should have done better. It was only temporary however, because Andy tested out of remedial theory quickly. She progressed quickly, and eventually was able to marry the accuracy of her ear with the proper terminology and nomenclature. She attributed this fast progress to the aural development and skills she already had acquired going into school. In fact, at some point, she stopped having to practice those particular skills, and could essentially sing almost anything on sight. It came to a point that she even enrolled in third year ear training, something normally reserved for composition and theory majors. She recalls the challenge of this class, where she was regularly asked to play musical excerpts by reading and playing three clefs on the piano and singing a fourth clef simultaneously. Needless to say, it was at this point that she recalls that she had had enough of ear training classes.

Of her overall experiences at Julliard, Andy seemed to recall a certain attitude of performance above all else. She felt that the curriculum was, so-to-speak, hyper focused on the specific aspects of performance that, as she described, allowed one to acquire a position in a professional symphony. This is not to say that there was no emphasis on non-performance aspects of music, as there were the standard history, theory, and ear training classes however Andy expressed that there was an attitude in the school that refining one's performance skills specifically to attain professional employment took precedent. Lessons and ensembles focused heavily on notation and more traditional, notation-based study and rehearsal techniques. In fact, she described how the ensembles rarely stopped to even tune. Andy admitted to me that her Julliard experience was not necessarily transformative, except perhaps in the extremely high standards of instrumental and ensemble performance. She did attribute Julliard's ear training classes and her private lessons there to further developing her ear and sight-reading capability. By the time of her graduate studies at Rice University, Andy could essentially read anything. It was at Rice that Andy told me of a slightly different experience.

Andy's private lessons instructor at Rice had studied with the teacher she had in her summers in middle and high school. This teacher brought her back to the fundamentals of the horn, once again focusing on sound, the harmonic series, and its function in all music. She describes this experience as relearning the horn. She also describes this time as the time when she "really learned how to practice." Andy was

deeply connected to the harmonic series in its relation to intonation and resonance. Beginning with her experiences in middle school lessons and continuing through into her graduate studies, Andy resonated with the concepts of harmonic resonances in intonation, tonal harmony, and in audiation. To her, the construction of the horn, and the construction of the music were one in the same, both built from the structure of the harmonic series.

As she transitioned into professional life after school, Andy found a passion for new and contemporary works and chamber music. She credited her schooling and experiences to developing highly acute aural skills and extremely strong reading skills. For a time, Andy spent much of her early career in chamber ensemble premiering contemporary works and also freelancing. The nature of her work required flawless sight reading of extremely complex rhythms and performance of complex, often non tonal harmony. She reiterated that, in addition to her passion for contemporary music, her sight-reading ability and aural skill that she developed through her schooling and lessons helped her become a highly successful freelancer. Later, she also credited these experiences to helping her along the path to full time work in professional symphonies.

Professional Experiences: The Whole is Greater Than the Sum of the Parts

I asked Andy to summarize her musical experiences leading up to her professional life and asked her to summarize how those experiences informed the way she learned music, thought about music, performed music, and taught music. The most important lesson that she spoke of was learning to utilize the harmonic series as a way

to understand music as a whole. She also credited her early experiences in learning to read music early that set her ahead and enabled her to musically excel from an early age. She noted the variety of her experiences, in wood winds and brass, singing, and in listening to and performing multiple styles of music, that enabled her to bridge across genres and be successful in a number of different types of ensembles later in life. Andy felt equally comfortable performing in classical, jazz, pop, or any other style that an ensemble required. She attributed this to her early and consistent exposure to and participation in music of many different styles and genres. More specifically, she noted how learning specific styles through singing translated to all music when learning how to assimilate un-notated stylistic elements in performance. Overall, when I asked her about the impact of her experiences in learning music by notation and learning music by ear, she found that both were equally important, and expressed that one could not exist without the other.

When I asked Andy about her observations of other musicians and colleagues throughout her career, she had a few comparisons and similarities, and well as stark differences, in the way she observed other musicians learning music, thinking about music, performing music, and teaching music. Many of her classmates in school went on to primarily focus on classical performance, and in her symphony life, most colleagues had a similar focus. She stated, in fact, that there was even a deemphasis in the symphony on other aspects of music such as improvisation, transcribing by ear, or playing other styles of music. She described the phenomenon as pronounced enough

that sometimes the orchestra struggled to play popular styles, because so many of the musicians had so little experience in those genres.

There was also limited experience with orchestration or understanding harmony in regard to elements such as intonation of chords and temperament within keys. This, combined with limited experience with learning by ear, improvising, or playing varied musical styles, painted a picture of a musician that to me appeared to be the product of the conservatory's philosophies. It appeared that as Andy described the lives, motivations, styles, and experiences of her colleagues, they matched the highly focused instrumental performance philosophy of conservatories like Julliard. This is not to say that these musicians were lacking in any way, it only suggests that, at least in Andy's observations, there appeared to be a much more focused scope of experiences and knowledge emphasized when it came to musicians' views in thinking, performing, and learning music.

In summary of this portion of the interview, Andy concluded that, with some similarities and some differences, at the end of the day music remains a very personal journey. In her current symphony there are six horn players, and naturally there are then six distinct teaching and learning philosophies, six different methodologies, and six personal philosophies about views of music. As I will later cover in the next section, Andy believed that that each person developed uniquely and at their own pace, with different experiences and abilities that contributed to their development.

Talent: It is What You Say it is

Andy provided me with some interesting perspectives on the idea of talent, one of the most striking she had already described much earlier in our interview during her time in middle school. It was during this time that she remembered having her first experiences of being labeled as talented by teachers and peers. These early experiences would come up later in our discussions on talent.

In our general discussions in breaching the subject, Andy acknowledged that she observed what she might call “genetics” (her own description, perhaps her best attempt at describing talent or aptitude at the time of the interview) for rhythm. She went on to describe teaching experiences where she observed that some students could easily identify the pulse in a piece of music, while others struggled. She also mentioned perfect pitch being taught in countries in Asia, but also noted that in certain cases students seemed to manifest perfect pitch with little training. Andy also mentioned synesthesia as one of those elements that some just seemed to manifest. She also mentioned other factors and noted that she believed one could not just have one innate skill or ability, it was a combination of many. Of these others she listed cognitive ability, such as quick language acquisition, the ability to discern sounds, vocabulary, and linguistic development. She also mentioned physical luck. For her, she described her own vocal development, and how she never seemed to have to practice singing in tune, singing with resonance, or using vibrato, which she naturally had as a young girl singing. She felt that these skills came naturally to her, despite her not really having

intensive or formal instruction in singing. Andy also noted one could not learn vocal quality, as she described.

Andy also began to discuss external and environmental factors that might inform one's ideas of ability. She noted personality, patience, and focus, essentially keying into certain elements of personality or temperament that might be beneficial to one learning music. She also acknowledged the element of time and resources, that some students might have the opportunity to start musical instruction much earlier than others, and that the quality of this music instruction would differ from student to student.

At this point Andy returned to elaborating on notions of aptitude in musical development. She described experiences in teaching rhythm to students, and how some students found the concept easier than others. She attributed these differences to the ability to recall and make connections between things, and that students had to be able to connect music to things they knew. That for her was the missing link in making the connections between the notation and the sound of the notation. In her experiences some students seemed to do this with relative ease, while others seemed to struggle.

I continued our discussion and asked her about other instances in her life where talent came to mind as a theme, and she shared some stories with me of her personal experiences in her own family with notions of talent. The first was of her fellow horn player in the symphony. This individual struggled through school and worked very diligently throughout his schooling. Andy made the differentiation that by comparison,

she felt she did not really have to work very hard in her own schooling experiences.

This gentleman, however, came out of school and became successful, while Andy admitted she struggled briefly after leaving conservatory. She attributed this struggle to her never having to really work during her schooling, and as a result, did not know how to improve beyond her school experiences. She even noted that for a time after school, he surpassed her. Moreover, she returned to her experiences of being labeled as talented, and how that affected her drive to practice and improve. Andy said that because she was placed under the umbrella of talent, she developed the mindset that she did not need to practice as much as other students might.

Andy also shared a story of her brother, who also became a professional level musician and attained a similar level of achievement in music. Though they had very similar experiences in music growing up, Andy remembers that she seemed to have a better sense of time and sound. Her brother, while perhaps not as inclined in these areas, nevertheless worked very hard while Andy felt like she did not. Years later, they both ended up in similar statuses as professional symphony musicians in major orchestras. Andy also remembered that her brother, while not as strong in some skills, was a very analytical and technical thinker, and that he excelled at music theory and composition early on, something that Andy says she still struggled with.

Andy told me that she believed one of her skills was multitasking. For her, aural skills for example, were not just being able to hear precisely, it was being able to listen for specific things. She told me the story of a sculpture class she took after college,

where the teacher was also a classical piano player. He taught her to look at the clay with a certain eye, that the art came from being able to discern forms from creative intuitions. He connected this with aural skills, calling it *eye training*. This was a realization for Andy, she realized that aural skills were not just about hearing everything precisely, it was also about identifying usable musical information. She mused about how perhaps student's ears might differ in that regard. Like eye memory, or muscle memory, such as in athletics, some students might be able develop those skills to differing degrees and at different rates. Some students might have more detailed aural identification, or greater aural memory, so that they could retain sounds to a greater degree.

As we neared the end of our interview, I asked Andy for any last thoughts on talent, its possible connection to aural skills, and what other factors might be considered talent. Most profoundly, she concluded with:

(talent) labels them (students) and affects how they function. ...And you know when you're labeled as talented for whatever reasons that we discussed today, then it changes how you see yourself, and it changes how you work. In some ways it helps because I was very confident, like I gained a lot of confidence 'cause I was like, 'I'm obviously talented, everyone left and right is telling me I'm talented and how good I am'. At the same time, I didn't learn the skills of, you know, being maybe even more humble, or learning and working hard. That kind of stuff.

Andy observed that in her own experiences and observations, there were some indelible traits that appeared to give some students the ability to acquire skills faster. In our interviews, these seemed to be the ability to make connections, physical makeup, and perhaps some measure of aural ability in being able to retain the qualities of specific sounds. There were also definite environmental factors, as Andy described the perceived effects of her own early immersion in music from a young age. All in all, perhaps the most profound observation came right at the end of our time, which was that talent was what one made of it, and for better or for worse, the label of talent could have lasting effects.

Subject Number 2: Dan

The Early Years: A Childhood of Immersion

The second subject, Dan, is a retired high school band director who served over thirty years in the public education field. In that time, he successfully conducted mostly concert bands and jazz bands, and his groups were the recipients of numerous awards and performed at the national level. Significantly, Dan also spent the majority of his career within the same school district, amounting to almost thirty years of devoted service to a single community. It became apparent that his musicality was a family endeavor, and music ran deep within its history.

Dan's earliest memories of music began with his family. His father played trumpet and his mother sang. Music was always being played in the house. His father was also a band director and did his own instrument repairs for his band program. The

side effect of this was that Dan remembered hearing all kinds of instruments being played at home, presumably from his father play testing instruments as he went along with his repairs. His father had also served in the Navy in the 1940s, at a time in the country when many professional musicians were enlisting in the military as musicians to avoid being drafted for combat duty or active service. This led to a wealth of high-level professional musicians entering the military bands. Dan's father took lessons from as many of these musicians as he could during his time serving, and so by his discharge from the military, he had a professional level tutelage on virtually every symphonic instrument.

Since his father was an educator, performer, and all-around enthusiast of music of all forms, Dan was exposed to different kinds of music in similar ways. He remembered going to the local symphony and accompanying his father to games where the school band was playing for pep band. His father also enrolled him in music lessons at around age eight, though he did not remember liking these, as he was not very motivated to practice. His father was also a choral director at the local church and brought Dan into these rehearsals as well. This was when Dan discovered he could sight sing fairly intuitively with little practice. He did like singing, and sang alto, although he could sing in other voices too, since even at this early age he remembers being able to read all the different clefs.

A few years later, around the fifth grade, Dan finally found his love of trumpet. This began with lessons from his father around 5th grade on the cornet, who became the

model sound for a young Dan. Interestingly, Dan remembered that often his most impactful lessons were when he and his father practiced in separate rooms where they could still hear each other. Whenever Dan began to play, his father would also begin to play, almost as if in communication through the wall. Dan said this was his father's way of teaching through listening, rather than explaining.

In terms of his experiences of learning by notation and learning by ear in these times, Dan recalled it was mixed and depended upon the context. Lessons with his father were largely taught by sound and by ear, though he was reading trumpet music as well. There was notation when he took piano lessons, and much of it was very scale based. In his choir experiences, there was a large use of notation for the singers to coordinate parts. For similar reasons of practicality, his experiences in playing in a youth symphony as a trumpet player were also largely notation based. His most vivid memories of this time were his exposure and opportunity to play with very high level and like-minded musicians in the youth symphonies, some of whom continued on to play in professional symphonies. It was these types of experiences that Dan referred to as immersion.

The School Years and Beyond: Talent Meets Work

Because of his experiences within his musical family, Dan remembered being quite the young star in his early ensemble experiences. He could sight sing and had no shyness when it came to singing, and so his elementary music experiences found him at the top of his classes, though he did not attribute this to talent, as we will discuss later.

He found that his lack of inhibitions was from the encouragement of his father, and this is what drove him to excel. These experiences continued through his ensemble band experiences in junior and senior high school. He even remarked that in those years, beginning as early as sixth or seventh grade, he was already working on playing concertos on the trumpet, which by any metric is highly impressive. In total Dan played in the jazz band, pep band, concert band, sang in the choir, and participated in the school musicals as part of the pit orchestra, a rather fitting resume for the son of a band director.

During these years Dan also was able to continue immersing himself in music outside of his regular classes and ensembles. He recalled two saxophone player classmates who would bring music from their lessons so that they could all jam together. Dan eventually began learning to arrange music for the group as well, which of course was aided by his father once he found out. Dan also remembered that by high school he was beginning to transcribe jazz music and learn by ear at a high level. They did not have many recordings in the house, and Dan did not recall music recordings being played very much when he lived at home. Of the few recordings his family owned, however, he learned them all. In particular, he recalled a Count Basie album that he listened to so many times that he ended up learning to play all of the solos on the album by ear. Yet, this story was juxtaposed against another humorous story in which Dan admitted that his ability to prepare music of other kinds on a timely schedule was still young and immature in those years. He said he would often wait too

long to prepare music for contests, and then near the performance date he would quickly memorize all of the music in order to perform it. Perhaps, if only by the mere grace of fate, his immersion, and experiences with learning music by ear made up for what were perhaps typical inclinations of a young teenager blessed with such an ability.

As we progressed into his college years, Dan's narrative of his experiences began to show the first signs of a challenge. Dan attended a very competitive school of music, and this was the first time he encountered parts he could not play. In fact, Dan said that his initial audition in his first year placed him in a high ensemble, but, after attaining his position he did not practice, and was immediately relegated to a lower ensemble. For Dan, this experience was the first time that he learned to practice with more purpose, largely because of the new level of competition he had never encountered before. Still, it was not all struggles. Dan remembered that during these times the other musicians were very encouraging and would duck their heads into the practice rooms where one was working to offer their support and words of encouragement.

Dan's ensembles, and it should be noted that his high school ensembles were similar, were highly developed and high performing ensembles, and so in that regard Dan's experiences were rich in high level music. In terms of style, they were also fairly standard in that they were mainly notation based. In regard to using recordings, Dan did not recall that there was much use, although he remembered the orchestra used them more than the concert bands. In college, the jazz band also used recordings, although at

that time many of the jazz band's members were already professional musicians returning to school, and so at times the use of the recordings seemed excessive. Earlier in our interview, Dan spoke of the importance of utilizing recordings to absorb sonic details about tone and style that could not be read.

As Dan transitioned from school to his professional life, he described a transition from formal learning back to informal learning, closer to the experiences he shared prior to entering school. In college Dan learned all of the standard skills of most music majors with ear training, theory, history, piano, and the like. Meanwhile, his rehearsal experiences remained largely notational based. As he moved into professional playing though, those elements reversed. Theory and notation came second to learning and rehearsing music by ear. This was due in large part to the environment he became involved with. Prior to his teaching experiences, which we will discuss shortly, Dan spent a number of years on the road as musicians would call it, playing with various bands and touring the country. His experiences in this time were in the era of jazz, junk, rock and roll, blues, fusion, and all manner of other popular styles. In these experiences, knowing music by ear was paramount, such that even using notation at all was considered undesirable. The musicians participating in these styles of music also did not learn music through a notational system, as many of them learned informally through mimicking other musicians. Notation, therefore, was not a part of the lexicon of methods for developing musicianship.

As we continued our discussions, we began to discuss the impact of Dan's experiences on his perspectives on learning music and the impacts his methods of practicing and learning music. I wanted to know his perspectives about learning music through notation-based methods and aural based methods in his teaching experiences, in how he or his students utilized notation-based learning and ear learning, and how these related to his overall methodologies of teaching and learning. Overall, he acknowledged an equal importance of notation and aural learning when it came to learning music, though he did have some unique perspectives to share on each. In terms of his professional life, he found ear learning to be emphasized to the point that musicians were resistant to learning music by notation, even though in some cases it might have made rehearsals more efficient. In teaching music, however, he observed the opposite. He found that, while students who attempted to learn by ear found earlier success, they eventually struggled as the music increased in complexity, while the primarily notation-based learners continued to progress.

It's Tomatoes and Onions, We Need Potatoes

As we finished our interview, I returned to asking the larger question: is there a such thing as talent? And what part might aural skills development have in it? For Dan, he did find that music seemed to come more easily to him, and that he was often more ahead than his classmates growing up. He attributed this to his musical parents, and to the high amount of immersion he was able to experience growing up in a musical family as well as in highly developed music programs. One important factor he

emphasized was the encouragement component and having positive feedback in his formative years. For him, this was as critical as the other components of learning music, because it lowered the inhibitions of the student and allowed them to fully explore their potentials, thus accelerating their growth. This self-image, as he put it, was critical in the early years. The ones who were encouraged kept going, the ones who were not eventually stopped.

Dan listed other compounding factors to student success and early ability, including high quality teachers, access to instruments, access to lessons, musical families, musically rich environments, families with high standards for their children and supported them, as well as a host of other complex socio-cultural contextualizations of musical environment. For him these seemed to contribute towards the necessary tools and factors that developed into high level musicianship, but above all he stressed the critical component of developing self-image.

Dan acknowledged that perfect pitch could help, as he had students with this ability who were high level performers. He also found strong sight-reading ability to be impactful, although ironically more to the ear learners than to the sight readers themselves, because the ear learners could hear what the parts were supposed to sound like. Dan, never one to mince words, possibly summarized his philosophy of teaching and learning music, as well as his ideas of talent, in the few words, “Natural aural ability is onions and tomatoes, we need potatoes...you can’t explain Mozart either.”

Subject Number 3: Tom

Tom is a professional musician involved with music in a number of ways. He is somewhat of a Renaissance man. In his earlier life he was a professional performer, and then after that became involved in the world of arranging and composing, working with major artists in LA to produce records, TV shows, and other commercial works. During this time, he also became an early experimenter in electronics, computer technology, and their applications in music composing and arranging. Later, he became involved in education, and began a non-profit music school to teach jazz. At first, it was a way for adults to play and get back into playing music, but soon it found wider appeal to students of all levels and ages looking for jazz experiences where they might not have been able to find them elsewhere.

A Childhood Spent Finding Music

The tone of our interview was set as soon as we began. When I asked Tom about his earliest experiences, including those that may have included reading and aural learning, he simply replied, “reading will be on the back burner of this narrative.” He continued on to tell of his earliest memories of listening to his father play the piano. His father knew many, many songs, but was not much of a reader. His entire lexicon was learned and performed by ear. Though Tom’s mother did not play, she also loved music. Tom remembered hearing symphonic music and choral music being played in the house. As he described it, he had lots of music exposure in terms of listening, but

not very broad exposure. He noted that he did know of African American music styles until around second grade.

Tom said music was present in the house, but it was not a prominent driving force in his young life. He did not take any sorts of formal lessons during those years, though music was present. What Tom did remember though, was that he loved to dance. Most importantly, he described the feeling that music gave him when he danced, and that to him that was an impactful experience, because he was able to experience that early on. It is notable that he first experienced this through dance, as opposed to playing an instrument, or singing. That would all come later.

Tom remembered the TV show, *The Partridge Family*, and remembers enjoying seeing musicians on TV, and he listened to the radio. Tom did not describe any profound or transformative experiences from these times. If there was any glimmer of seeing music as a future life, it had yet to reveal itself. Still, Tom moved around to a few different cities as a child, and in these experiences, he found whole worlds of diverse cultures and musics.

Tom's father taught at a local college, and it was through this relationship that Tom began piano lessons around the fourth grade through a connection through his father. He did not initiate these lessons, rather, his sister had taken up piano earlier, and so he only wanted to do what his sister was doing. In addition to this, he also remembers taking elementary recorder class and violin in fifth grade. He did not elaborate much on these elementary experiences; however, he did comment on the

unique experiences in his piano lessons. His teacher taught by rote, showing Tom the sound of the notes and the shapes of the hands on the piano. Tom compared these to later piano lessons in junior high that were more notation based, and he greatly preferred the rote lessons, preferring the more free and intuitive approach to the more methodical approach of notation. He did note, though, that some of his first experiences with form and theory happened because of the notation-based lessons, and so he acknowledged them as beneficial in that way.

By high school, Tom was experiencing a transition. He had stints in junior high jamming with friends, participating in different bands, playing different instruments such as guitar, and watching live music. In junior high, he remembered trying to transcribe music using a record player that was on the opposite side of the house as the piano and running back and forth between the two, frantically trying not to forget melodies between hearing them and racing to the piano. In high school, he traveled to California with a friend and watched live jazz for the first time. He was enamored by the freedom of improvisation and the spontaneity of the music, the energy of the players, and the obvious fun they were having on stage. It was then he first found a desire to know more about this music called jazz.

It was after this experience that Tom switched piano teachers to a jazz piano teacher who taught music by rote and by ear, showing him to play by doing. He described it as a new world view. The world was no longer just composers and their statically composed music, there was another world, the world of improvisation. Tom

remembered freely improvising on the blues, developing melodic sense through call and response with his teacher, and learning to develop a sense of melody. He remembered being introduced to Oscar Peterson and Thelonious Monk, and this being the turning point towards his more serious commitment to learning jazz piano.

Meanwhile however, he was also maintaining a steady diet of notation in a variety of ways. While his piano teacher taught without notation, he himself, as well as his friends, learned jazz through notation. Tom described this as a product of necessity, because none of his friend group were really able to learn music strictly from the recording. This was the time of the beginning of jazz fake books and lead sheets. Tom admits that he and his friends only thought they were serious, but in reality, they were not learning by ear, not memorizing songs, and as far as Tom felt, were not really learning the songs. He described this phase of his life as young naivety, that though they were indeed having fun, they were not nearly as serious about the music as they thought they were. By Tom's senior year of high school, he had been playing guitar, but dropped it to focus solely on jazz piano, and he finally began to play with the jazz band. For Tom, this was now serious, at least he felt that way at the time.

A New Way to Find Music, a New Way Forward

Tom decided to pursue music in college, and indeed gained admittance to a highly competitive and highly regarded school for jazz. Unfortunately, for all of its perceived benefits, the opportunity to learn from topflight teachers, the ability to play with other similar caliber musicians of like-minded ambitions, and access to world class

performance opportunities, it also came at a cost. Tom reminisced on an environment that inspired excellence, but also drove students to the point of potential self-destruction. Tom eventually developed tendonitis in his hands as a result of the intense demands of performance, rehearsal, and practice. For him, this was another transitional moment, and for a time he thought he would be done with playing permanently.

All was not lost, however, as Tom found new success in composing and arranging. He finished his college experience as more of a composer and arranger than a player and became part of a new program at the time focused on the emerging synthesizer technologies and their use in music production. Tom took these skills to LA, where he became highly involved with many major artists of the day, producing records and existing at the cutting edge of music composition and arranging through synthesizer and computer technology.

In terms of ear learning and notation-based learning, he shared the experiences he had in the studios of LA. In that world the aural skills took major precedent. In fact, for him early on, it almost seemed rather unprofessional that the musicians were not using fully notated or scored parts with which to record. What he found instead was a rich lexicon of customs, practices, shared experiences, and language that supplanted the requirement for notation. Tom described the normal day of the studio to begin with a list of tunes that everyone was expected to learn for the session, but just titles, and perhaps sketches and chords for original compositions, but nothing more. The musicians were all expected to learn the tunes either from the session leader,

recordings, demo tapes, or other sources. This was an expected and a very normalized practice, as it was “everyone’s job to learn the tunes.”

What I'm saying is, it seemed like that was not professional, in my mind, that [the session leader] was telling people to go and learn the tunes by ear. And because it was, you know, it's like Tonight Show wouldn't do that. But, if you have a big band, everyone has to have parts that they can read. So, I was just being young and dumb, and the thing I didn't understand, is that those musicians had long figured out that their ears were what they stand on, and they get that their ears have to be together. And so, it was no big deal. It (music) is language that is understandable through the airwaves alone.

Tom went on to share his feelings and ideas on the use of notation in music education:

And, what music education has done, is it has wiped out the ground that we're supposed to be standing on. It used to be that everybody could participate in music. You wanna sing? We're saying it. We're gonna sing this tune. Go tell it on the mountain. Whatever the tune is, like, ‘OK, you sing that. Alright, now you sing. (singing) Go tell it on... right.’ Everybody can participate in music. Everybody can. It's not that big a deal. We're all ready, all of us. Our brains are discerning the differences between these notes. We wouldn't enjoy music if we didn't already understand all that, but we've got this programming, that you gotta be able to read this (notation) in order to participate in music. No, that's

required if you are gonna have something you gotta sell. It really helps to sell music if you can write it down and have someone buy it. It really helps if you've got somebody paying you to go to school to learn something and you can say, OK, here's what you're gonna do: do this, do this, do this...

This dialogue provided vivid insight into Tom's larger philosophical views of notation, and his outlook on the use of it in teaching and learning music. Most profound in his words here were that he seemed to frame notation as having somewhat of a gatekeeping effect on students: that to participate in music, one had to also be able to understand notation as a prerequisite. And moreover, that notation was primarily developed and utilized as a means of capitalizing on composed music through selling notated manuscripts. For Tom, it seemed that notation served more as a basis of commoditization than a tool of communication. In this, on the communication of music and through music, Tom had more to say:

In my opinion, the whole notion of how we go about learning music is really wrong, and it's really prohibitive to the majority of humans, and it's not at all corresponding to the aptitude, or the value, or the imperative of people participating in music. It's really had a kind of a culturally criminal effect that it naturally, understandably, has happened through the course of the industries of higher education, the industry of musicians trying to figure out how to make a living in a culture that does not value music. OK, it values it, if it can be a commodity, but, it does not value it in itself. And that's really it. It's a reflection

on so many more things, but it's a reflection on the society and the culture of the system that we are in. If you want everybody, or anybody who wants it (music) to be able to have the joy, and the healing, the therapies, the life enrichment that happens when you participate in music, make music yourself with others. You do not need to have anything on paper. That's not what's required. What's required is for people to be participating, and to start to have something to say.

For Tom, notation appeared to be a great barrier in allowing all people to experience music. He advocated for ways in which people could experience music in immediate and authentic ways, ways in which he did not believe notation gave people access to. One thing that he stressed was that music could be a communication system if it were taught in a way that was more universal. In his teaching philosophy, Tom described a methodology based on moderated success in which students could progress through doing, through playing, through listening, and through experiencing. He accomplished this through a system that taught musical improvisation through simple sounds, call and response, and most importantly, no more harmonic, or theoretical language than necessary to get students playing. In this environment, he found students could experience success, engagement, and communication without the barrier of notation. He advocated for the use of aural learning, because in his observation he found ear learning through imitation, responding, and playing to be a natural process for people. Tom characterized music as a natural and core part of the human

experience, and that aural learning was the way that all people would be able to experience it.

The How is as Important as the What

In regard to the use of notation in the classroom, Tom initially seemed to advocate for a complete reformatting of method, almost appearing to suggest one could remove notation entirely. He later qualified his previous comments, understanding that the process could not be done overnight. He added that aural learning, while natural, should also be nurtured early on, so that it was a natural process of learning from the beginning. Only later, once the ear and the concepts of sound were developed, could the notation be used, more in a way that enhanced and accompanied what the ear already knew, and did not dictate it. We discussed the limitations of notation, in terms of its inability to notate balance and blend in harmonies, the specific orchestrational role of a given musical line, and other elements that could only be taught, learned, and applied through the practice of listening.

Tom's philosophies taught music through listening using small and progressive steps that allowed students to experience incremental successes in a supportive and encouraging environment. He valued inclusivity and stressed that music through listening and experiencing could achieve that, while notation could not.

In terms of the relationship between aural learning and perceptions of talent, he shared thoughts that mirrored some of the philosophies he held about teaching and learning music. Tom did observe that one could always tell who listened and learned

more by ear, because these players seemed to be able to develop concepts and independence faster than their peers. He shared his experience with an adult student who began learning jazz guitar late in life. This student had listened to jazz his whole life, and when he began experimenting with and learning jazz techniques, he progressed quickly, as he had already developed a stylistic conception based upon his years of listening to jazz.

Tom believed that listening provided a definite advantage when learning certain aspects of music, however in terms of the general notions of talent, aptitude, or ability, he strongly stated that everyone essentially had their own unique aptitude, again reiterating that all students had potential and that all students could be involved in and enjoy music. The key to this however, in Tom's view, was to allow students to progress through small and manageable steps using the universally accessible dimension of sound through aural learning. The process of listening and experiencing through listening was key in his methodology, and to this end Tom believed one could achieve true inclusivity in music where all students could experience success.

Talent, as Tom described it, was a rather sloppy word. It might be rather, that talent was an acknowledgment of the time spent engaging in any activity for a profound amount of time. Tom stressed that time and struggle were part of the process, and that while some students still seemed to acquire learning faster, in the end ability was a manifestation of time and engagement.

At the conclusion of our interview Tom shared with me an experience he had teaching a group of young students jazz improvisation. At first, he attempted to use a more theoretical and notational based approach but found limited success in this method. He found himself motivated by the students who seemingly “didn’t get it.” It was at this point he decided to move towards more simple aural based teaching, in which he stressed spontaneous improvisation using simple compositional elements. This approach allowed the students to achieve success earlier on, gave them confidence, and allowed for continual engagement both with the music and with each other. Over time, the students progressed to the point that they were all able to compose, perform, and improvise original songs all on their own. Tom shared that his system had produced similar and consistent results now for a number of years.

For Tom, the how appeared to be as important as the what in terms of what he described in reengineering teaching and learning music. His pathway forward seemed to follow along the lines of utilizing the natural abilities of humans, in the sense of learning through listening, mimicking, and engaging, and using them in a way that was universal to all humans. He taught music through this path, and it appears that he found measured success in his own experiences.

Chapter 5 Summary, Discussion, and Conclusion

Introduction

This study aimed to answer three research questions outlined below:

1. In what ways are developing aural skills perceived to contribute, if at all, to developing overall musicianship?
2. Are aural skills perceived as a natural or developed skill, and in what ways?
3. Is overall musicianship perceived as natural or developed and in what ways?

The mechanism through which these three questions were examined was through the concept of focused aural experiences (FAEs), or specific and impactful learning experiences that were perceived to impact later musicianship. Overall, in regard to the three research questions, all three subjects described the role of focused aural experiences (FAEs) as part of a larger ecosystem within music learning. The specific nature of this role, however, differed for each of them. I found that for each subject, the role of aural learning through FAEs was necessarily contextualized within the environment of music in which the individual existed. It was these environments that shaped the use of aural learning, and also framed the connotations and attitudes around its use.

In regard to the first research question, the three subjects all acknowledged the importance and role of FAEs in their musical development, though its prevalence differed amongst the three, and the way aural learning was introduced to them. All gave detailed descriptions of their aural learning experiences, explaining positive perceptions

of the impact these exerted on their musicianship. All three subjects acknowledged that aural learning was part of a complex network of experiences ultimately shaping musicianship that could not be entirely isolated as an independent factor in that process. However, each acknowledged the development of aural skills as a critical factor in advancing musicianship.

The above result indicates that the second and third research questions are perceived to be interrelated. While all participants described the importance of actively developing of aural skills, each participant acknowledged being aware of a seemingly inexplicable aural ability in certain people. Thus, the results indicate that, while there is some awareness of inherent aural acuity, each reported the critical nature of developing their aural skills through experience. Furthermore, while each participant reported musicianship as something that appears to come more easily in some than in others, each reported that active development of their musical learning unquestionably impacted their musicianship.

This chapter includes a summary of the results following the narrative path of each subject as they describe their musical development. This is followed by discussion of the results, their detailed relation to answering the research questions, their connections to the literature, and their connections to the theoretical framework. This section concludes with an analysis of the significance of the findings.

Summary of results

The early years: Aural learning experiences through childhood

All three subjects described experiencing music early in their lives, and all three subjects also received some form of formal and/or informal music instruction prior to entering primary school. It became evident that all three came from musically rich backgrounds, and that this early immersion seemed to guide their trajectory into music as a career and vocation later in life.

The three subjects shared that their public-school experiences included elementary general music as well as elementary, middle school and high school ensemble experiences. Elementary music featured a mix of singing and playing various instruments. Andy and Dan also noted remembering a variety of musical ability levels amongst fellow students, even at that age. In particular, Andy recalls being further ahead musically than the other students, crediting her early music experiences outside of school as the causal factor. Dan recalls similar sentiments in his elementary music experiences. Andy and Dan progressed into junior and senior high school participation in traditional ensembles, by that point having selected their primary instruments. Tom did participate in various music ensembles in school, however as a piano player he did not have the same structured experiences as Andy and Dan. His experience might be considered more uncharted since his piano experiences in public school ensembles such as choir relegated him to more of an accompanying or auxiliary role. All three recalled rehearsals and teaching methodologies that they described as more traditional, notation-based methods. Recordings were used occasionally in a reflective capacity such as a

model for performance, especially at the high school level, but were an auxiliary resource to more traditional stop-and-fix rehearsal methods.

All three subjects also took private lessons and experienced music outside of school prior to and during the school years. Andy and Dan both received lessons from their families. In both cases, they began as young children around the early elementary years. Andy also recalled a wealth of formal musical learning experiences on piano, violin, and singing that were either given by or supported and arranged by her family during her elementary years. Dan did take some piano, as well as trumpet lessons in elementary and junior high school, but similarly to Andy, noted that these were not as inspiring as those early lessons from a family member (his father). Tom did not take formal lessons as a young child but grew up being exposed to his father playing jazz piano. Tom spent most of his time playing during the school age years with other young musicians in informal jam sessions. He also began piano lessons around junior high school, alternately switching between teachers who taught jazz, classical, popular styles. Dan and Andy both participated in youth symphonies as students, and these experiences continued from junior high school into high school years.

All three subjects described musically rich childhood environments, where music was largely present, but not necessarily where music was a dominating feature of daily life. In other words, music existed as a part of the fabric of daily life but did not seem to define it. None of the subjects reported strict practice schedules or demanding competitive environments. All three reported scenes and described households where

recorded music of all kinds was playing often, and people were either singing songs, playing instruments, listening to music, or dancing. Dan, in particular, was exposed to live music very often through his father who was a local band director. He remembers going to the symphony, sitting in rehearsals, and attending games with his father. Andy too, remembers singing in the car often with her mother to the radio. And Tom remembers that, while his father was not a professional musician, he loved to play the piano, and often played in the house when Tom was young. Tom also recalled that though his father was not a music reader, all of his songs were performed memorized and learned by ear. Tom himself, even before beginning his studies on piano, loved to dance, and always remembered the feeling that it gave him when doing so.

During those years, FAEs factored in as a component. However, they were not a primary focus of music activities in the sense that they were not purposely and separately taught in the type of formal approach one might have in a university aural class. Rather, the experiences might have better been characterized as (un)focused aural experiences, where aural skills were utilized as an unconscious tool rather than a conscious way to hone musical skills. Andy remembers learning and singing songs entirely by ear, as well as learning to improvise sung harmonies with her mother. Dan described lessons from his father in which his father was not even in the same room but would play to him through the wall from the room next door as a way of coaching entirely through sound alone. Tom remembered lessons from his first piano teacher that were based on popular music styles that were taught by ear and through imitation. Tom

remembers that he found these lessons more engaging than his later classical piano lessons that were more notation based, because he felt free to explore and experiment with sounds..

In the discussion of the impacts of those early learning experiences, all three subjects gave much credit to their early learning experiences as influencing their later decisions, motivations, and aspirations to continue to pursue music activities. Andy recalled that music was essentially a normal part of the fabric of her daily life, such that she remembered reading music before she could read English. For her, being involved in music almost blossomed as a natural continuation of her experiences in early life. In a similar way, Dan grew up with his father who was a career band director, spending his entire young life at his father's side through musical experiences, and later participating in his father's ensembles. Though Tom recalled less direct immersion within his immediate family, he recalled that he moved to different cities as a child and was exposed to highly musical environments. It was meeting the people in these cities that brought him wide exposure to music and contact with many musicians who inspired his later music-related choices.

Each subject also described key moments in their formative experiences that inspired them to pursue music more seriously. Andy described an early period where she transitioned through various instruments before settling on French horn as her main instrument, recalling the moment as feeling like she had finally found the right instrument for her. Dan recalls a similar experience when he first began trumpet, and

also credits his father as a great early influence. Tom always gravitated towards piano, but for him his moment came when he first heard musicians improvising and playing jazz. This was his moment when he decided to seriously pursue improvised music in a moment that he described as a realization: that music could exist beyond the static nature of notation.

Music at university and beyond: Aural and notation skills in context

All three subjects continued their music education beyond primary and secondary school music, studying music formally at university. The three subjects took fairly standard music courses for most music majors, including theory and sight singing. Dan and Andy both mentioned sight singing courses but noted that ensemble rehearsals used more traditional means of learning music that were notation based. Dan recalled that there were some recordings used in certain ensembles, but Andy described them almost exclusively using notation during rehearsals. Tom did not speak much about his college experiences beyond his shift from a performance focus to a composition and arranging focus. However, he did share a similar sentiment with Andy, and to a lesser degree Dan, that school music felt exceedingly competitive. For them, the same competition that drove the students to success also came at certain physical and psychological costs.

All three continued music professionally after college, deciding to pursue careers in their chosen fields. Andy spent some time in freelance work, while Dan established himself as a player and arranger in various touring bands. Tom transplanted

to LA where he began a career in studio work and arranging. Later, Andy became a full-time musician in a symphony orchestra, Dan began his career in public school band teaching, and Tom began his school for teaching jazz.

In these professional music settings, the three reported varying findings on the use of aural skills in the context of learning music. In Andy's case, aural learning and aural skills were largely deemphasized in favor of learning and rehearsing from notation. She noted that, in her observations, her colleagues rarely transcribed music if at all, and that it was not a regularly utilized or emphasized skill. Aural skills were used more prevalently in the sense of being utilized to tune, balance, and blend the ensemble. Dan described life on the road where learning music through notation went so far as to be avoided. He was aware that musicians in his environment had characteristically learned almost exclusively by ear and that some did not learn by notation at all. Tom's environment in LA similarly deemphasized notation, where musicians often used the minimum amount of notation possible, while learning music by ear was considered common practice and the expectation to learn new material.

Aural learning within broader factors impacting musicianship

In the relationship between aural skills and general notions of the development of musicianship and ability, the three subjects acknowledged that the perceptions of musical ability were far too complex to be isolated through one element such as aural skills alone. Andy and Dan both pointed towards other factors contributing, alongside aural learning, to their musical trajectory. While both acknowledged a rich musical

upbringing including singing, lessons on musical instruments, and early exposure to notation, both also pointed out that in their own lives, and also in their observations of students, colleagues, and classmates, that an environment of encouragement, or lack of encouragement, was additionally highly impactful. Dan was convinced that it was musically supportive families who provided many opportunities, encouragement, and support to succeed, that gave students the edge to achieve higher than their peers.

Andy's experience aligned with this view. However, in a unique twist, the encouragement she received gave her a confidence that caused her to feel she did not need to practice. In hindsight, she viewed this as a barrier to what might have been even greater success. She reported that this attitude later proved difficult to overcome in college and professional life, as she had not learned to practice effectively earlier in life. Tom reflected a similar narrative as he retold the story of his first attempts at teaching improvisation at his school during his early teaching days. He had found notation and theoretical concepts counterproductive to students' learning. The students would become discouraged as a result of struggling with those concepts. This changed, though, once he began utilizing simple, easy-to-grasp concepts that did not require notation and combined with consistent encouragement, enabled him to teach improvisation to students who had been unsuccessful via other means.

In the general conceptions of talent, aptitude, ability, or musicianship, all three subjects simultaneously acknowledged that while there were unexplainable anomalies, musicianship was more appropriately framed as a complex network of experiences that

helped to shape whatever predetermined natural abilities might be present. Andy uniquely framed the issue in her telling of her experiences of being labeled talented, and that the development of those self-perceptions, whether positive or negative, could be both beneficial and detrimental. Dan frequently emphasized that encouragement was the most powerful factor in determining the development of musicianship, beyond any specific musical skills, because the development of positive self-image allowed one to engage in musical skill development without inhibitions. Tom spoke of a similar narrative, suggesting that music could be a universal activity for all people if one utilized their inherent skills of listening, observing, mimicking, and experimenting.

Discussion of Results

Connections to the initial research questions: Focused aural experiences and the development of musicianship contextualized and situated within culture, history, family, and environment.

On the first question of whether developing aural skills were perceived to contribute to developing overall musicianship, all three subjects reported experiences or environments from early childhood onwards, that involved formal and informal aural skills development that they felt strongly shaped their later musicianship. While this result does not discount other avenues to the overall development of their musicianship, aural-based musical experiences were reported as remarkably impactful and memorable, as they all testified to these experiences within the context of

transformation. In other words, the three subjects found such experiences either transformed, enhanced, or definitively influenced their later musical development.

Andy particularly reflected on the importance of these transformative experiences in specifically listening for sound, timbre, and color in her recollections of her early years. These were not particularly focused on the discrimination of pitch or rhythm per say, as in the application of transcription, but were more focused on the nature of the sound itself. Andy reported her experiences in learning to listen for the sounds of intervals, the application of the overtone series and its connection to the acoustics of the instrument and connecting to music as a whole allowed her to understand music in deeper ways than notation alone. Andy also reflected on her early years singing with her mother. These experiences of singing and harmonizing gave Andy what she perceived to be a later advantage at identifying and producing pitches and intervals. These experiences, according to her, allowed her to later excel at brass performance once she began performing on the horn. Specifically, she reported that she felt these experiences were most transformative in allowing her to later develop her musicianship at the university level.

Dan spoke about some similar experiences with his father in his early lessons on trumpet. Like Andy, he reported that those early ear-based lessons with his father were highly impactful in showing him how to listen for sound and timbre. He attributed these lessons to fostering an attention of detail in the characteristics of sound that later helped him succeed on trumpet in school. Tom as well, relayed a story of listening, from more

of a perspective of necessity rather than a selected approach. Unlike Andy and Dan, whose lessons provided impactful experiences in developing aural skills, Tom recalled an environment where listening was the natural way to learn music, since his father learned most of his music by ear. For Tom, it seemed that notation, as he reported, was very much “on the back burner” in terms of his early music learning.

For the three subjects, it appears that FAEs were perceived as certainly impactful in their early music learning. In particular, this study reveals that in the case of these three subjects, FAEs were perceived to greatly affect and influence their perceptions of learning music and later musicianship. Furthermore, the nature of these impactful moments and memories were highly contextualized by the environments in which these musicians lived, and by the people they encountered therein.

Connections to the initial research questions: Relations to the literature regarding perceptions of aural skills development and their relation to overall musicianship as both an inherent and acquired characteristic.

On the second initial research question regarding the perceptions of aural skills as a natural or developed characteristic, and the third initial research question regarding the perceptions of the development of overall musicianship, the three subjects shared general observations that musicianship as a concept is too complex to be defined by one metric alone, such as musicianship through aural skills development. Those simple findings contribute another confirmation about the complex nature of musicianship to the extensive body of work identified in the literature review (Haroutonian, 2000;

Hoffman, 2015; Robertson, 2008; Stollery & McPhee, 2002; Hayward, 2009; Shouldice, 2019; Jaap, 2005). Though the three subjects did not reject the notion that aural skills development could be part of broader picture of musicianship, the three subjects identified other elements that could be compounding factors, such as support from teachers and peers. Jaap (2015) and Shouldice (2019) found similar conclusions in their studies of teacher perceptions of musicianship. Shouldice additionally, when finding that teacher perceptions of musicianship affected their actions in the classroom, perhaps found common evidence to this study in that, for better or worse, the perceptions of the teacher about the student appear to influence the self-perceptions of the student. This evidence seems most apparent in Andy's stories of the effect of her teachers and peers labeling her talented in early life.

Andy and Dan both reported early experiences of feeling ahead of other students when they were in school. They both also reported feeling at ease sight singing or listening for intervals, or otherwise feeling like music was easy, or natural for them. They both attributed this, though, to the range and depth of their early exposure. In terms of natural development, neither reported that they felt any sense of natural ability or unusual aptitude as music students. Andy however, pointed out that, in addition to not having perfect pitch, some fellow students appeared to have differing capacities to feel rhythmic elements such as time and pulse. She noted that some students seemed more naturally adept at feeling and identifying these elements, while others struggled significantly. Dan shared an observation in the relation between aural and reading

proficiency. He noted that students who could sight read quickly actually proved more useful to the primarily aural based learners, since the readers could immediately demonstrate how parts needed to sound. This proved a limitation to the aural learners in the end. Dan noted that, while the aural learners might have had a head start, they eventually were outpaced by the readers as the music increased in complexity.

Andy and Dan's observations in their teaching experiences appear to point similarly towards a notion that, while some inherent skills might be present in a student, they did not present any particular advantage or disadvantage compared to acquired skills. However, Dan and Tom's observations appeared to include some contrast. For Dan, reading skill was a viable path towards continuing progress and development, while for Tom it proved to be a barrier that could prevent students from experiencing music. For Tom, notation seemed to present a barrier to efficient experience of music and finding ways to teach without it would ensure a more universal and inclusive experience for all students.

The results of this study also seemed to demonstrate evidence of "self-fulfilling" perceptions in relation to the perceptions of ability. The case of Andy describing her journey of self-perception and the struggle of being labeled talented paints a broader picture of how self-perceptions might influence real world skill development. Bounviri (2015) found similar evidence of the impact of self-perceptions in developing musicians. Shouldice (2019) and other researchers (Brändström, 1999; Pajares, 1992; Rosenthal & Jacobson, 1968; Scripp et al., 2013; Sloboda, 2005; Sloboda et al., 1994)

found that self-perceptions of musical ability affect a person's likelihood to continue in music. These studies align with the views of Dan and Tom, both of whom reflected on and emphasized the importance of supportive teachers in the learning process.

Considering research comparing aural learning with notational learning, the results of this study seem to point towards the findings of Haston (2010), who determined that utilizing aural learning methods might help students perform better than notation alone. Andy and Dan both spoke of the use and impact of aural learning techniques in their own education, both in the realm of their formal and informal educational experiences. Tom spoke of the impact of utilizing aural teaching techniques in his successes in teaching students who were not as successful utilizing notation alone. Tom's report connects with the research by Cash (2015) that indicated aural means of teaching being more effective in students' learning of music, or, as in the case of jazz, more effective in teaching to memorize music.

This study also found further evidence for the contextualization of musical skills development and use as a precursor to their influence on the musician. In other words, the musician, embodying a collection of skills, along with their perception of the use and importance of those skills, was a product of their environment. Hallam (2010) and Woody (2010) found similar evidence in stating that the musician's skills were a product of the necessity of the environment in which those skills were used. In the case of this study, a subject like Andy, who primarily worked in the realm of large ensemble music, might have found notation-based skills more importantly and immediately

needed in comparison to aural skill. By contrast, Dan, who worked with musicians who learned exclusively through aural means, would likely have found notational learning skill inefficient or ineffective.

To reiterate the conclusions drawn above, all three subjects pointed towards many complex factors, both inherent and acquired, that contributed to overall musicianship, of which aural skills development was one essential component. Both Andy and Dan commented on the possibility of perfect pitch skill being a contributing factor, reflecting the findings of Elmer et. al., (2015), Liperote (2006), and Gordon (2007), but these attributions were the extent of those relations. Both Andy and Dan reported other factors, such as supportive environments, that they viewed as more impactful than perfect pitch alone. Overall, Andy, Dan, and Tom painted rich pictures of the development of musicianship that included rich formal and informal experiences, extensive long-term exposure to a variety of musics, the encouragement and support of teachers and peers, and environments that encouraged them to succeed. Aural skills development through FAEs played an important role within this larger framework, but for these three cases it was not the defining factor in determining musicianship.

On Vygotsky: A theoretical framework for presenting aural skills development as a pathway towards understanding music as language

I have selected several key theories of Vygotsky as a theoretical basis for examining the implications of this current research:

1. The child begins the process of learning and development at egocentric speech.
2. Egocentric speech allows the child to slowly assimilate concepts of objects and forms.
3. Through the mediation of a mediating individual, egocentric speech progresses to allow the abstraction of concepts. This abstraction of concepts allows for the development of inner speech.
4. Through further mediation, abstract inner speech experiences reintegration into reality as speech itself.
5. Speech, and the socialization accompanying it, provides the vehicle by which further abstraction of higher concepts might take place.
6. The zone of proximal development describes the process of mediation through which the mediating individual takes the child from the area of understanding to the area of new learning.
7. The means by which this mediation takes place is through the use of *signs* and *tools*, means and artifacts of understanding that allow the child to abstract higher concepts.

The three subjects related rich stories in which music was an immersive and interwoven part of their daily lives. The ways and intensities in which this manifested in each subject's life differed, but all three shared experiences in which music was not only a major part of life, but an integral part of daily life. This observation is significant in

that the stories of the subjects appear to demonstrate the necessary sociocultural and “bioecopsychological” (Rio & Alvarez, 2007 p. 282) contextualization necessary for mediation to take place. In particular, Andy shared memories of being excited to play in a large ensemble for the first time, and that those experiences were driven by a desire and enjoyment of playing with other musicians, despite even a perhaps less than stellar expectation of the performance of the music itself. Dan too, remembered his experiences of playing with like-minded musicians in school, and the impact of those experiences which inspired his high-level expectations of musicianship. Tom not only remembered the joy of playing with other musicians, that joy later influenced his teaching philosophy in teaching students by having them experience music in groups. It is not that these experiences themselves directly instigated learning in these musicians, though they may have encouraged or stimulated learning. In the sense of Vygotsky, it was these environments that were necessary for the mediation that allowed the learning to take place. In the scope of this research and its aims, the findings of this report more critically point towards the element of group socialization which, rather than taking place through speech, took place through the experiencing of playing music amongst others. Therefore, it might be said that music, the sonic medium through which these experiences occurred, could be observed as the vehicle through which this socialization and mediation occurred, through playing, listening, and experiencing music.

On the examination of music itself as language, in the sense that musical sounds might offer a means of understanding music as language through their categorization as

sign and tool, the findings of this report may suggest that the subjects did experience instances in which musical sound served as a means of assimilating concepts. In the case of Dan, his story of the experience of receiving lessons through the wall paints a stark picture of communication exclusively through sound. Dan understood that this was his father's way of teaching him to learn through listening. Dan elaborated more on this story, about how he would begin to play, and how his father would listen and also begin practicing next door. As Dan put it, his father did not intend to mimic or correct Dan's playing, rather it was to communicate, and perhaps demonstrate what the next steps might be, solely through what he played through the wall. In a crude albeit poetic way, these interactions might be observed as the ZPD taking place through sound itself. Through his trumpet playing, Dan's father was responding, coaching, and guiding Dan solely through the medium of sound alone.

Tom remembered similar experiences with his first piano teachers, who would teach him by showing him what to play through call and response, and through rote imitation. For Tom, this intuitive, organic way of discovering how to play the piano, through slowly building pieces of musical vocabulary and assimilating new concepts as his teacher coached him, allowed Tom the freedom to explore and develop his own style. He took these concepts into his own teaching methodology years later at his jazz school, where he found them more successful for some students who experienced notation or written theory as cumbersome.

Andy's stories of her lessons utilizing aural skill paint a similar picture, but perhaps more obviously in the realm of timbral variation, tone, and sound quality, than in the realm of pitch and melody, as in the case of the other two subjects. Still, her lessons in describing her development in understanding the relationship of the overtone series to music, may share commonality with research by Kempe et.al. (2015) who found connections between skills associated with sensitivity to pitch discrimination and timbral variation to skills in language processing and discrimination of spoken vowels and consonants (Kempe et.al., 2015).

Implications for Music Education

The findings of this research suggest that aural learning experiences through FAEs were reported to be profoundly impactful in music learning. The subjects in this study reported that experiences in which aural learning was a primary component proved to be transformative in their conceptions of music and were perceived to be highly impactful in developing their musicianship.

In the realm of music education, the findings of this research may lead to advocating for the greater use of aural learning techniques and experiences in the classroom. These aural experiences need not be necessarily formal or informal, as the three subjects reported in a variety of experiences. However, the quality, nature, and frequency of these experiences may be significant. A recurring theme in the findings was that aural learning was a natural and normalized part of the learning experience, not a specific or isolated activity. Aural learning in this case was utilized as a natural

part of the learning process. It may stand to warrant then, that perhaps aural learning should be a more embedded and natural part of the music learning process when describing and developing curriculum and pedagogy.

Recommendations for Further Research

If further evidence and research provide more connections between music and language, then ongoing examination into the processes of teaching and learning music may be well-warranted. Researchers might continue to explore how music is taught in terms of aural versus notation-based teaching techniques. In the realm of K-12 school music education, it might be useful to examine ways in which teachers might use focused aural learning techniques in their classes while exploring perceived benefits in doing so. Such data may be analyzed for either the effectiveness or the perceived impact of the incorporation of such formal techniques into an overall instructional design and curriculum for school music.

The findings of this research suggest that aural learning takes place within highly contextualized environments, but regardless of environment, the impact of such experiences is perceived to be profound. Being conscious of the combined importance of context, further investigation into the overall and specific ways in which formal and informal aural learning might be incorporated in the music learning process of the student may be warranted. Specifically, research might compare the proportion of aural-based learning experiences in comparison to notation-based learning experiences in educational settings. If aural-based learning experiences are consistently found to be

just as profound and impactful as notation-based learning experiences, then such research findings might inform decisions regarding possible greater use and incorporation of aural-based learning techniques as a larger part of the overall music education experience.

Conclusion

In conclusion, this writing is not intended as a means to advocate for any specific learning philosophy, however it may have provided unique perspectives through which a number of questions have been examined, more questions remain, and perhaps more research may be developed to further understanding in this field. Is aural learning perceived as being impactful in developing overall musicianship? This research seems to suggest yes. Are aural skills factored into an overall notion of musicianship or talent? Certainly, but musicianship presents far more than the skill of the ears alone. Additionally, this research shows that the environment within which the person exists is just as impactful as the experiences themselves.

Is music language? The full answer to that question remains far beyond this research; however, Vygotsky's learning theories provide perhaps a useful means to begin to understand music as language. The findings of this research seem to suggest that musicians may experience and engage in music in some of the same ways they experience and engage in language.

And what of talent? Why do some students just seem to get it? I have no answer, and surely cannot develop with a good answer within the scope of this writing.

However, within the course of this narrative, I might argue that Vygotsky provides us with a potentially useful lens for examining the nature of learning and development applied to a musical context. I pose an alternative question then in this case: what if every child is talented? What if, just as every child can learn language and use it as a means to develop, create, communicate, preserve, participate in, and record culture and identity, they can also do the same with music? If music *is* language, then might we conclude that every human can *engage in music*, just like they can *engage in language*. And if so, what about talent? Perhaps we cannot answer why some get it, but more importantly, we might ask why more do not get it. I do believe music is universal, in the same way that language is universal. In the same way human civilization has developed a wondrous multiplicity of spoken languages, music has developed a multiplicity of musical languages across cultures. I believe that all languages and all musics inherently contain specifics that are understood only by those familiar with that specific language. However, I also propose that all languages and all musics can convey some level of human messages, needs, and values, that might be perceived universally, regardless of what other barriers might exist, linguistic, cultural, geographical, historical, or otherwise. All humans seem to share common psychological capacities to assimilate, learn, use, transmit information and ideas, and communicate using language through aural and oral means (Evans, 2009). If music is language then I also believe every person could have equal access to engage in it, given the right means. In this way, music may truly be a universal intelligence along with other intelligences proposed by

Howard Gardner (Sternberg, 2021). In final summation, I propose that music, like language, allows us to communicate, think, feel, learn, experience, and exist, and in that sense, allow us to be more human. And, for that reason alone, music is not just a human need, it is a human imperative.

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Appendix A:

Instrument

Interview questions sample:

1. Let's begin with some details about your earliest musical experiences.
 - a. What were some of your first experiences that you can remember with music? As a baby, toddler etc. did your family members or close friends play live music with you, or for you? Or did they sing to you/with you? In what ways do you remember they did this?
 - b. Did they play recordings for you? In what ways did they do this?
 - c. Explain if you were introduced to musical notation at any point in your early years, or if your early musical experience playing/singing was all by ear. Describe any memories where musical notation was used either formally or informally, perhaps in lessons, participating in a singing group, or singing/playing an instrument at home.
 - d. How do you think those earliest musical experiences might have impacted your later musical development?

Appendix B:

Consent Form

Consent Form Page 1 of 2

A case study of professional musicians and their perceptions of the impact of aural learning experiences in developing musicianship

Jonathan Urmenita, Graduate Student, Fine and Performing Arts, 253-797-5255; Dr. Sheila Woodward

Researcher's Statement

Purpose and Benefits

This will be a study in examining the perceptions of musicians on the impact of aural learning in the development of musicianship. This study aims to shed light on the complex experiences that shape musical development and describe the nature of those experiences and their impact through case study research. The findings of this study are a foundational step examining aural skill development and its relationship to overall musicianship. It is my research interest and goal to examine not only what might make great musicians, but what factors might possibly influence making great musicianship accessible to all students, regardless of what inherent or environmental factors may exist.

This study is being conducted in partial fulfillment of the requirements of the Master of Music in Music Education.

Procedures

This study will be conducted as an in person or online interview. The researcher will ask each question, and the subject will have the opportunity to answer the questions with as much detail as they wish. Each interview will last up to approximately two hours. The questions ask about the musical experiences of the subject. After the preliminary interview questions, the researcher might ask additional clarifying questions either during the interview or after at a later date. The most personal might include examples such as:

2. Let's begin with some details about your earliest musical experiences
 - a. What were some of your first experiences with music that you can remember? As a baby, toddler etc., did your parents play music with you, or for you, or sing to you?
 - b. How do you think those earliest experiences might have impacted your later musical development?

3. Did you take music lessons as a child prior to participating in music at school, like childhood piano lessons?
 - a. If yes, did you have any particularly memorable lessons? Any moments that stuck with you about learning music that you remember today?

In order to capture as much detail as possible, the interviews will be recorded via video recording. Part or all of conversations may be quoted as part of this study. Washington State law provides that private conversations may not be recorded, intercepted, or divulged without permission of the individual(s) involved.

Consent Form Page 2 of 2

A case study of professional musicians and their perceptions of the impact of aural learning experiences in developing musicianship

Risk, Stress or Discomfort

There are limited to minimal risks involved in participating in this study. Subjects will be asked about their personal experiences in music. There is limited risk of invasion of privacy since subjects will be asked about their personal life experiences, as well as potential that questions asked may recall undesirable memories or feelings. If subjects feel it is appropriate to opt out of any question at any time for any reason they may do so.

Other Information

The researcher will contact the musicians selected for the study via email or phone briefly explaining the task, the research, and the commitments required. The researcher will arrange interviews. This study is voluntary and confidential. There will be no compensation for participation, and no penalty for non-participation or withdrawal. Participants are free not to answer any questions they find objectionable.

Signature of Principal Investigator

Date

Subject's Statement

The study described above has been explained to me, and I voluntarily consent to participate in this study. I have had an opportunity to ask questions. I give permission to record, intercept, and/or divulge conversations (as appropriate) in which I participate during this study. I understand that by signing this form I am not waiving my legal rights. I understand that I will receive a signed copy of this form.

Signature of Subject

Date

Appendix C:

Participant Recruitment Script

Hello Participant,

I am currently working on completing my master's thesis, and I am asking for your help in completing this work. I am researching the perceptions of musicians regarding learning music, aural skills, talent and natural ability, and the relationships between aural skills, learning music, and perceptions of musical ability. I will be interviewing you for this project. Each interview will last about two hours and can be conducted either live or via video conference. I will be asking you questions about your life as a musician, including how you learned music, what your experiences with learning music were growing up, and your ideas on learning music and musical ability. You will have to complete and sign a consent form in order to participate in the research. All of the details of this project are contained in this form. Would you consider helping me in completing this research?

Vita

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