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The Process of Musicking: An Alternative to Melodic Dictation and Other Activities Involved in the Undergraduate Music Program

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THE PROCESS OF MUSICKING: AN ALTERNATIVE TO MELODIC DICTATION AND OTHER ACTIVITIES INVOLVED IN THE UNDERGRADUATE MUSIC PROGRAM

by

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THE PROCESSS OF MUSICKING: AN ALTERNATIVE TO MELODIC DICTATION AND OTHER ACTIVITIES INVOLVED IN THE UNDERGRADUATE MUSIC PROGRAM

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This thesis makes the claim that the current American undergraduate music institution does not effectively integrate the skills learned in aural skills courses; as a result, too few students are engaged in the learning process and fail to master the required skills. One common activity used in aural skills courses is melodic dictation, an activity which asks students to notate a performed melody. While activating a multitude of useful skills, melodic dictation could cause a cognitive overload due to demanding too many tasks to be performed simultaneously. A suggestion of implementing Musicking activities—which emphasize music as a process (an act), not an object—is made in order to remedy the problem. After a comprehensive review of existing literature and psychological research, this thesis affirms the need to revise the goals of the current aural skills curriculum and provides desired skill outcomes for the Musicking alternative activities through emphasis of the four Musicking Sets (Fluency, Short-term Memory, Intuition, and Communication), and concludes with examples of the alternative activities which emphasize the Musicking Sets. Finally, this thesis describes avenues for further research to implement a four-semester Musicking curriculum and methods of assessing the overall success rate of the alternative Musicking activities over present aural skills curricula.

To

Tammy, Tim, Steve, Tyler, Zach, Paige, and Matt:

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CHAPTER 1: AN INTRODUCTION TO MUSICKING

Mastery of aural skills is one of many components required to obtain an undergraduate degree in music.[1] Aural skills are, in the simplest terms, a person's ability to hear, perform, and understand music. Some of the skills associated with aural skills might include: the ability to quickly sight read and perform melodies or rhythms, recognizing harmonic progressions or cadences, improvising and realizing notated figures, and possessing knowledge of typical expectations in musical form. In American universities these skills are occasionally separated into two categories: ear training and sight-reading. Between these two categories, a curriculum designed to test and improve a student's aural skills is created. Some institutions may require additional courses in keyboard proficiency, instrumentation, composition, and musical form and analysis as part of a well-balanced music theory education, but those courses may or may not be integrated into the aural skills classroom.

In many aural skills curricula, a primary method of assessing ear training is by demonstrating success in melodic dictation exercises. Melodic dictation is an activity in which a student must accurately notate a performed melody. The length and content of the dictation varies depending on the level of difficulty. An example of a melodic dictation melody might look like the melody in Figure 1.1.

1. Throughout this thesis, I use the term "Aural Skills" to refer to the course where various musical skills are learned in the undergraduate music program. This term is not universal—many such courses are titled "Aural Skills," but different institutions use labels such as "Musicianship," "Fundamentals," or "Ear Training."

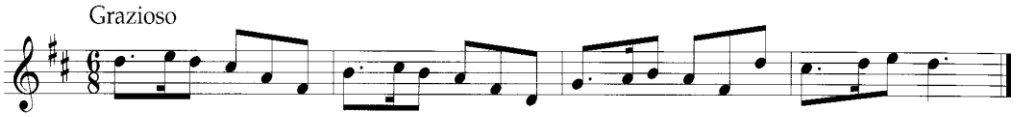

Figure 1.1: A sample melodic dictation exercise from *Music for Ear Training* by Horvit et al.[2]

I argue that the typical American undergraduate curriculum—especially one that utilizes melodic dictation—does not adequately encourage the foregoing skills set. Melodic dictation asks students to perform many, if not all, of the above skills simultaneously. A more advanced musician might be able to handle more than one skill at once, but for musicians who are not as advanced melodic dictation can simply be too much. The activity washes over them and causes students to struggle to summon the skills needed to complete the task. As well, there seems to be a disconnection between the skills learned in the classroom and the skills that are professionally relevant. While sight-reading and performing melodies are useful to skills to the music professional, an argument can be made that activities like melodic—or harmonic—dictation do not teach crucial skills, or rather, the relevance of the skills used in dictation are not emphasized in a way that is clear to the student.

This thesis will demonstrate methods to better teach undergraduate students a desirable skill set. My objective is to get students to understand that music is a process; music does not exist on the page so much as it exists through performing and/or hearing sounds in time. One brilliant articulation of music as a process comes from Christopher Small who states, "The fundamental nature and meaning of music lie not in objects, not in musical works at all, but in action, in what people do. It is only by understanding what

2. Michael Horvit et al., *Music for Ear Training*. 4th ed. (Boston, MA: Schirmer Cengage Learning), 180.

people do as they take part in a musical act that we can hope to understand its nature and the function it fulfills in human life."[3] If we enhance the skills which enable us to take part in the action of music, the process becomes not only more enjoyable but we also can connect to music in a more sophisticated fashion. Small's notion that music is a verb and not a noun has inspired my new title for the aural skills course: "Musicking," which describes the action that is "to music."[4] I find the term Musicking to be a more appropriate course title for my curriculum because the content of the course work goes beyond the spectrum of just "aural" skills. My belief is that students should not only learn how to analyze sounds but also perform and think critically about music. I want to improve all of students' musical processes, not just their ability to interpret sounds as meaningless factoids. "Musicking" reflects that goal.

Before exploring the accoutrement of the Musicking curriculum activities, I will first present a review of existing literature. Research for this thesis included reading through the pedagogical approaches from a variety of aural skills text books, philosophical renderings from notable theorists, and experiments on the cognitive processes used when listening to music. I then elaborate on motivating factors for revising the curriculum. Chapter 3 will provide evidence from pedagogues and psychologists to support my claim that students become overwhelmed when too many processes are asked of them at once; their working memory becomes clouded—a symptom which I call "cognition overload"—and causes an inability to complete tasks.

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3. Christopher Small, *Musicking: The Meanings of Performing and Listening*, (Hanover: University Press of New England), p. 8.

4. *Ibid*., 9.

This overload can be remedied if the activities provided by the Musicking curriculum are integrated gently rather than prematurely submerging students into dense material.

After discussing the motivation for revisions, I will introduce the pyramid of Musicking Sets in Chapter 4. These sets—groupings of skills relating to Musicking—are arranged in ascending order from the most fundamental skills—notation, pitch reference, and pattern recognition—to more complex skills like oral and written synthesis and performance. The activities from each set will aim to build a solid foundation of skills in order to ensure the most success when presented with more advanced activities in the later sets. Chapter 5 will demonstrate sample activities from each set. Activities will start in basic forms—asking students to quickly repeat pitches, to predict harmonization, to determine contour of a melody, and to isolate pitches in harmonic dictation, to name a few—with the larger curricular goal to gradually increase the number of skills being performed simultaneously in various exercises. Finally, I will briefly comment on my ambitions for further research including these alternative activities in Chapter 6. This research will include piloting a two-year Musicking curriculum in an American university, measuring students' abilities in both the experimental and control classes prior to and at the conclusion of the curriculum, and comparing the results to see if there are any measurable differences between the two curricula.

The need for implementing these Musicking alternatives is evident in the research from music theorists and psychologists. Music theorists discuss the convoluted mental processes that occur when performing—and especially, when listening to—music. Psychologists investigate not only brain activity when processing music but also research

working memory capacities—the number of tasks can perform in their short-term memory—to reveal the effects that multiple brain processes have on the ability to store information. Combining these two areas of research—first the theoretical background in Chapter 2 and then the psychological evidence in Chapter 3—will expose the pedagogical reasons for amending the current aural skills related activities in the undergraduate music curriculum.

CHAPTER 2: REVIEW OF LITERATURE

A large body of work in music literature discusses the physical and mental processes involved when performing or listening to music. Psychologists and theorists alike have engaged in research that runs the gamut from understanding how listeners identify pitch centers to comprehending how the brain processes sound. In many cases, the research focuses primarily—if not exclusively—on the aural representations of sound as opposed to the physical representation (e.g. a musical score). As important as the musical score is to communicating musical ideas, the fact remains that music is an aural experience. We do not visualize music; we see notes or symbols on a score that represent a musical sound in time that we "auralize."[5] The aural skills classroom becomes one of the most important components of the undergraduate curriculum as it is the place where students learn how to hear and perform music.

The notion of music being a process and not an object inspired the change in course title for my new curriculum. As stated previously, the term "aural skills" does not adequately describe all of the processes performed when doing music. For example, composing is not an aural skill but it is an important musical process; composing teaches students how to create music instead of just performing music. If we want students to learn about all processes of music, the term "Musicking" functions as a more satisfactory course descriptor. According to Small, the action of Musicking is "to take part, in any capacity, in a musical performance, whether by performing, by listening, by rehearsing or

5. James Beament, *How We Hear Music: The Relationship Between Music and The Hearing Mechanism*, (Rochester, NY: Boydell Press), 120.

practicing, by providing material for performance (what is called composing), or by dancing."[6] In a class where students *do* music—or participate in music—it seems only fitting that the course title means "to music."

Of all the actions one performs when musicking, listening is perhaps the most complicated process. Since hearing is "by its nature a necessarily private, internal experience," it is often difficult to put into words what a person hears, or for that matter, how it is they came to their own conclusions about what they heard.[7] All who listen to music—at varying degrees of sophistication—possess a musical intuition that influences how they hear music and grants them the ability to predict future events. Fred Lerdahl and Ray Jackendoff discuss musical intuition in terms of the idealized "experienced listener"—a person who brings musical knowledge and assumptions to a performance assesses music as being "an example of the idiom" or challenges their expectations.[8] The experienced listener is best described as a person who frequents the concert hall but does not possess the musical knowledge or vocabulary of a trained musician. Though this person may not know precisely what the idioms are—specifically tonal idioms in music—the experienced listener has an understanding of how tonal music generally works. An example of the tonal idiom might be differentiating between a *half cadence* and *authentic cadence*; the listener may not know the terms *half cadence* or *authentic*

6. Small, *Musicking*, 9.

7. Jeanne Bamberger, *The Mind Behind the Musical Ear: How Children Develop Musical Intelligence*, (Cambridge, Mass: Harvard University Press), 7-9.

8. Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music*, (Cambridge, Mass.: MIT Press), 3.

cadence, but in a musical performance they will hear a phrase ending with a half cadence as less stable than a phrase that concludes with an authentic cadence.

Some aspects of musical intuition are hierarchical—that is, there are certain musical events which are subservient to other events. Lerdahl and Jackendoff break down the hierarchical musical structures into four basic categories: Grouping Structures, Metrical Structures, Time-Span Reductions, and Prolongational Reductions. Each category has two sets of rules—well-formedness rules and preference rules—that explain the ways a listener favors a certain analysis of a musical event. A well-formedness rule specifies possible structural descriptions (how is this specific event formed) while a preference rule prescribes which of the possible structural descriptions most accurately corresponds with the way the listener hears a piece of music (through which musical phenomena is listener hearing this specific musical event).[9] Figure 2.1 illustrates how the experienced listener might hear—and group—the events of this passage from the Mozart G Minor Symphony, K. 550. Each boundary is drawn by how the listener hears the group of notes relating to one another. In this example, all of the boundaries are grouped in terms of proximity of note durations—long note durations tend to be grouped with the short note durations that precede them, and change in articulation from slurred events.[10]

9. Lerdahl and Jackendoff, *A Generative Theory of Tonal Music*, 9.

10. *Ibid*, 43-46.

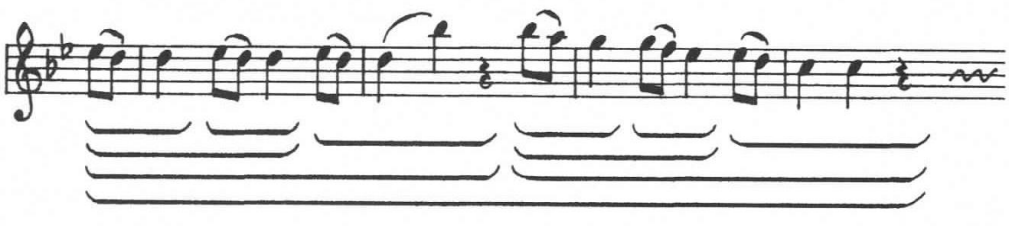

Figure 2.1: Grouping structures of the Mozart G Minor Symphony opening melody.[11]

We can gather a great deal of insight from Lerdahl and Jackendoff's theory of the experienced listener and apply their rules and structures onto any listener's experience; however, the definitive goal of the undergraduate music curriculum is to transform students from a musical layperson into a trained musician. It is necessary for the student to learn the distinction between simply hearing notes and learn how to associate notes with one another in a musical context.[12] During their participation in the undergraduate curriculum, students are exposed to a vast array of musical works in order to gain knowledge about form, harmony, melodic tendencies, and other tonal idioms in order to build educated guesses about what the music is doing and where it will go next. By supplying students with this knowledge they are better able to "give meaning to particular actions, events, objects, elements, and their relations" to a well-constructed model of tonality and apply these meanings onto their own musical predictions.[13]

David Huron has conducted research on the matter of musical anticipation and what external or internal factors affect a person's ability to predict future events. He has come to the conclusion that "accurate expectation facilitates perception," meaning that

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11. Lerdahl and Jackendoff, *A Generative Theory of Tonal Music*, 37.

12. Michael R. Rogers, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies*, (Carbondale: Southern Illinois University Press), 100-101.

13. Bamberger, *The Mind Behind the Musical Ear*, 167.

background knowledge allows the listener to create more accurate predictions.[14] In an experiment to test musical prediction, Huron performed melodies to two different cultural groups of musicians—American and Balinese. Both groups of participants were tested on a traditional Balinese melody and were asked to place "bets" on which pitch(es) they thought to be the best candidate for continuing the melody.[15] Unsurprisingly, the results showed that the Balinese musicians were consistently more certain of the direction of the melody than the American musicians (Figure 2.2). The Balinese musician's predictions were more successful because they have acquired cultural melodic expectations to this particular style of music.[16] Their accurate expectations of the melody facilitated their predictions.

14. David Huron, *Sweet Anticipation: Music and the Psychology of Expectation*, (Cambridge, Mass: MIT Press), 43.

15. Huron collaborated with Paul von Hippel and David Harnish to perform this experiment as a betting paradigm, where the musicians placed "bets" with poker chips on what pitch(s) they thought would appear next in the performed melody. It was the intent of the experiment for participants to place the highest number of chips on the tone they felt to be the best candidate for continuing the melody. *Ibid*., 45-55.

16. Though the melody used in this experiment was a Balinese melody, it was unfamiliar to both groups. The authors' choice to perform a Balinese melody was to see if cultural expectations guided both groups of musicians' ability to accurately predict the melody. *Ibid.*, 55.

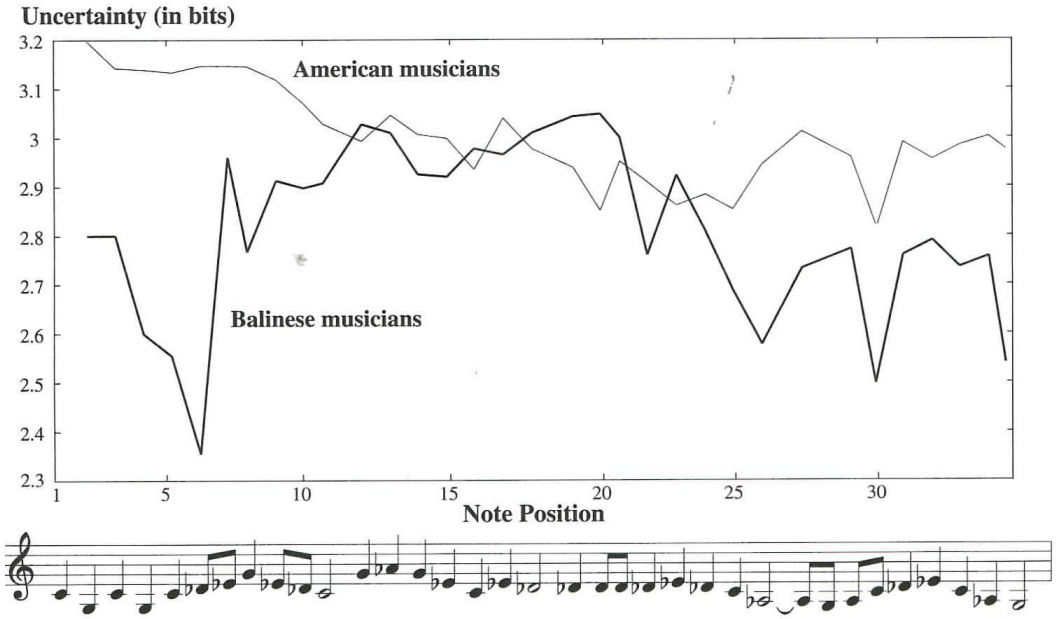

Figure 2.2: Results from Huron's prediction experiment on a Balinese melody being performed to groups of American and Balinese musicians.[17]

Though many American undergraduate music programs primarily—and almost exclusively—expose their students to Western music, this genre is the most familiar found in our culture. The collection of works in the Western music style is enormous, but most of the music conforms to the same tonal tendencies. When we teach students the tonal idioms of Western music, they are able to know what this music is capable of producing.[18] Prediction becomes an important skill for students to acquire in their undergraduate studies, so we must frequently expose them to—and teaching them to hear—these tonal tendencies.

17. Huron, *Sweet Anticipation*, 54.

18. Gary Karpinski, *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians*, (New York: Oxford University Press), 68.

Gary Karpinski devised another set of skills that functions while participating in music (and especially in melodic dictation) which includes: short-term memory, notation, hearing, and musical understanding.[19] The term "musical understanding" is perplexing in that no widely accepted definition exists; it presents elusively the question "what is understanding?" and lends itself to philosophical debate. Generally speaking, Karpinski interprets musical understanding as possessing knowledge about various facets of music like rhythm, meter, and pitch.[20] For example, being able to feel multiple levels of pulse—macrobeats or microbeats—illustrates an understanding of rhythm and meter. Notation, quite simply, is the process of communicating sounds through written symbols. Karpinski discusses different proto-notation methods for notating rhythms and pitches. For example, instead of trying to write out the pitches and rhythms on the staff at the same time, a person could write solfège syllable above the staff first and then focus on rhythm proto-notation.

When we listen to music, we undergo several neurological processes to commit the sounds we hear to short-term—and eventually—long-term memory. First, the musical sounds hit the ear drum. After these sounds have travelled through the ear drum and to the brain, we send them to the working memory. Once those sounds are in the working memory, we are able to use a variety of mental schemes to interpret and assign meaning to the sounds. A number of fascinating procedures happen—some simultaneously—when listening to music, but for the purposes of this thesis I will not go into extensive detail about the hearing mechanism. However, some of the research on

19. *Ibid*., 64.

20. *Ibid*., 78.

short-term memory (appearing predominantly in Chapter 3) should prove to be useful to the composition of the Musicking curriculum alternatives.

There are two separate memory-encoding processes used when listening to music—hearing the contour of melody and hearing specific pitches or intervals.[21] Research has shown that encoding contour correctly occurs more frequently than encoding specific pitches.[22] Ian Quinn created a combinatorial model of pitch contour that brings to light some interesting evidence that contours are more memorable than specific pitch intervals, but this will be discussed in more detail in Chapter 5. It is possible, however, to use contour as a point of entry into discovering specific pitches. In any case, listeners must be able to attend to music with enough concentration to make sure it reaches their short-term memory.[23]

There are a variety of external factors that can hinder a person's attention—boredom, anxiety, fatigue, or attention deficit disorders, to name a few—but another factor that affects one's ability to store information is through an overload of information presented at one time in one activity. While we cannot control all external factors contributing to attention loss, there is a way to prevent this cognitive overload in the activities presented in class. Understanding how our brains store information is crucial to creating the most effective activities for students to complete in their musical studies. Chapter 3 will discuss the short-term and long-term memory (which will also be referred

21. William Berz, "Working Memory in Music: A Theoretical Model,"- *Music Perception* 12, no. 3 (1995): 356.

22. Karpinski, *Aural Skills Acquisition,* 66.

23. *Ibid*., 65.

to as “working-memory”) and the problems that cognitive overload lodges onto the working-memory capacity. I will also explain why it is essential to overall success of the student to renovate activities—like melodic dictation—in the aural skills curriculum in order to avoid cognitive overload and increase working-memory capacity.

CHAPTER 3: MOTIVATING FACTORS FOR CURRICULAR REVISION

Understanding how the brain hears, processes, and stores information provides the impetus for revising aural skills curricula. As stated in Chapter 2, memory—especially short-term memory—plays an important role in our ability to perform musical tasks like melodic dictation. While there are several different theories about the exact capacity and nature of short-term memory (STM), many agree that it is limited in both size and duration. One theory on STM proposes that it is a multicomponent system composed of storage and processing functions (a working memory capacity) rather than simply a "passive buffer system."[24] These functions are more generally known as schemes.

Pascual-Leone's defines these "schemes" as "well-learned procedure[s] which can be "activated" and applied in order to accomplish a task." [25] Many everyday tasks require the use of several schemes. For example, when a friend asks for directions it takes one scheme simply to process the question, another scheme to recognize where the person is asking to be directed to, a third to remember where this destination is, and then one more to deliver accurate directions. Even though the STM can perform multiple schemes in a short activity, activation of each scheme requires the use of a limited supply of mental energy.[26]

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24. Berz, "Working Memory in Music," 360.

25. Mansoor Niaz and Robert H. Logie, "Working Memory, Mental Capacity and Science Education: Towards an Understanding of the 'Working Memory Overload Hypothesis'," *Oxford Review of Education* 19, no. 4 (1993): 512-513.

26. Niaz and Logie, "Working Memory, Mental Capacity and Science Education," 513.

Pascual-Leone's theory of the multiple schemes emphasizes the importance between the "M-power" (the amount of mental energy) and the "M-demand" of the task (the maximum number of schemes which the subject must activate simultaneously in the course of successfully executing a task).[27] Essentially, when we are presented with a task our brain calculates the number of tasks that must be performed, arranges them in a hierarchy of least complex to most complex, and distributes whatever M-power is stored between the tasks. Since the M-power must be divided amongst multiple schemes, a sensation of cognitive overload floods the individual trying to complete the task, resulting in failure to complete the task well or at all. When too many schemes must be engaged simultaneously the working memory capacity is stretched beyond its limit and the ability to store information decreases.[28]

The problem of cognitive overload is a crucial one for a musician as there are a multitude of processes that factor into both hearing and performing music. Cognitive overload becomes especially problematic in the aural skills classroom when students are asked to complete activities—such as melodic dictation—that require the use of multiple schemes. Such schemes for melodic dictation include the act of hearing the pitches, determining intervallic distance between the pitches, notating the pitches on the staff (which involves knowing the arrangement of pitches for the dictated musical clef), notating the rhythms (which involves knowledge of the divisions and subdivisions of beats in the dictated time signature), and knowledge of tonal melodic and harmonic

27. Niaz and Logie, "Working Memory, Mental Capacity and Science Education," 513.

28. Fredrik Edin et al., "Mechanisms for Top-down Working Memory Capacity,"- *Proceedings of the National Academy of Sciences of the United States of America* 106, no. 16 (2009): 6804-6805.

idioms to name a few. As well, the lack of background knowledge (arrangement of pitches in each clef, the divisions and subdivisions of the beat, tonal idioms, etc.) about the task of melodic dictation can cause for insufficient performance or poor STM storage since there are so many schemes present at one time. The more expertise we have in an area, the more likely we are to enhance the efficiency of our limited mental processing.[29] Since the melody in a melodic dictation is usually unknown, the unfamiliarity creates more work for the STM by not having enough M-power to efficiently fuel each scheme necessary to complete the task. Students must possess knowledge or effective strategies for handling unfamiliar melodies before they can approach the task; without these strategies they will likely experience cognitive overload and will not accurately complete the activity. By gaining knowledge about or repeating a particular task, our brain is more likely to commit the schemes required to complete this task to long-term memory (LTM). Schemes involved with LTM require less M-power than STM schemes since they are more intuited processes. If we can commit more schemes to LTM, the working memory capacity will be able to fuel more M-power to STM schemes.

When listening to music, a portion of our mental energy must be dedicated to the act of storing sounds. For storage of sounds, studies have shown that the brain is restricted in the number of pitches it can remember. Cognitive studies suggest that the STM has the working memory capacity to store "between 11 and 15 pitches" for familiar melodies, and "7 to 11 pitches" for unfamiliar melodies.[30] Even the most simple of

29. Niaz and Logie, "Working Memory, Memory Capacity and Science Education," 520.

30. The conclusions were drawn from the experiments conducted by Long (1977) and Pembrock (1987). Berz, "Working Memory in Music: A Theoretical Model," 354.

melodic dictations pushes the limit of this working memory capacity, so we must find more efficient ways to teach students to remember the pitches in a melody if they are to have a chance to notate them accurately. Some ways to overcome the limitations of STM capacity could be using LTM storage strategies like chunking information (think how we remember long-distance phone numbers by grouping area code, first three digits, and then the last four digits) or drawing on previously learned material.[31] Thus, the more information we have about a subject—in this case, about music—the larger pool of information we have at our disposal to complete musical tasks. If a student is knowledgeable about tonal melodic tendencies, they can refer to this information during melodic dictation. Chunking involves teaching students how to group notes of melodies—showing students how to identify which consecutive notes "belong" together. Both LTM methods (chunking and background knowledge) have the potential to increase the working memory capacity for remembering melodies. When we work to develop STM schemes into LTM more M-power is available in the working memory capacity for more complicated tasks.

Other schemes for which the working memory capacity is also responsible include "a wide variety of cognitive tasks which require manipulation and temporary storage of information…involved in verbal and visual short-term memory tasks, in reasoning, problem-solving and comprehension."[32] Some of these tasks require more M-power than others depending on how many schemes it takes to complete the task; the

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31. Berz, "Working Memory in Music: A Theoretical Model," 356.

32. Niaz and Logie, "Working Memory, Memory Capacity and Science Education," 516.

more complicated the task, the more schemes are needed. An excellent representation of a hierarchy of cognitive tasks is Bloom's taxonomy as seen in Figure 3.1. The blocks are stacked in ascending order of easiest task to most difficult. The bottom block, Recall, include a list of basic tasks—ones that require less schemes—while the top block, Evaluation, includes more complicated tasks.

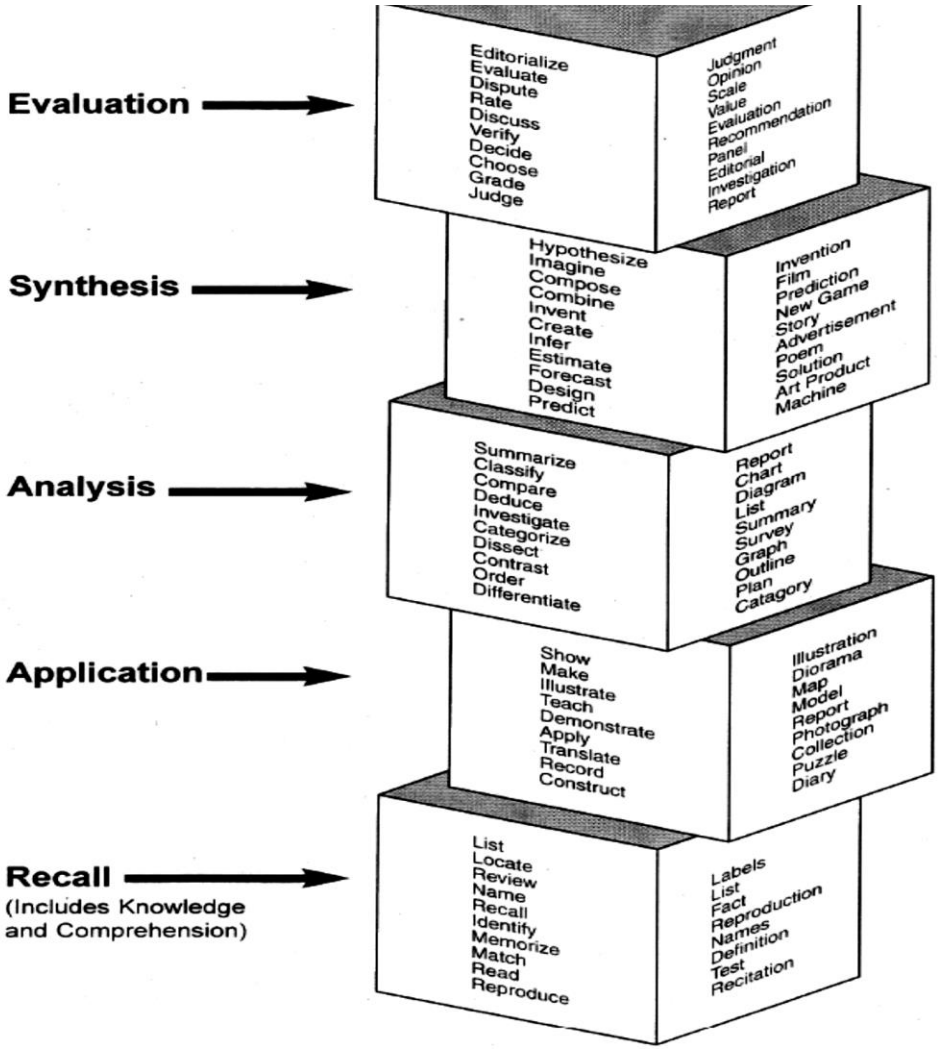


Figure 3: Bloom's Taxonomy.[33]

33. Gail J. Richard, *The Source for Processing Disorders*, (East Moline, IL: LinguiSystems, Inc.), 166.

The arrangement of tasks from Bloom's Taxonomy maps onto the working memory capacity in that the lower blocks contain the fewest schemes per task while the higher blocks contain the most schemes per task. When students are asked to perform tasks from the Evaluation block, they are firing M-power onto multiple schemes. By spreading the limited M-power onto multiple schemes the likelihood of not completing the task to its fullest potential decreases. In the Evaluation block, the cognitive tasks perform (at some level) many of the cognitive tasks from the blocks below. It is not possible, or certainly not likely, that a student can successfully perform the tasks dictated in the higher blocks without storing the tasks from the lower blocks into LTM. When we ask students to perform complicated tasks like melodic dictation, they are accessing many schemes in or to complete the dictation. If the student has not internalized effective strategies to approach this activity or if they have not gained enough background knowledge about the task, they are susceptible to cognitive overload and will not produce quality results. Becoming more fluent in the lower cognitive tasks allows for more energy to be available to more complicated tasks.

In the next chapter, I introduce a pyramid of tasks that reflects the hierarchy of Bloom's Taxonomy. The pyramid contains four Sets, and in each Set exists a list of skills that are performed. An emphasis is placed on the lower skills in the pyramid so that students will build a strong foundation of skills before attempting tasks beyond their working memory capacity. I will provide a detailed description of the skills used in each Set, how these skills will be employed in various exercises, and compare the goals of current aural skills activities with the desired outcomes for the Musicking activities.

Then, Chapter 5 will provide examples of alternative activities that work to increase musical fluency and provide more efficient strategies for tonal orientation.

CHAPTER 4: DESIRED SKILL OUTCOMES

In the previous chapter, I argued that, when attempting melodic dictation, some students experience cognitive overload as a symptom of trying to use multiple skills simultaneously without completely mastery of each of the skills individually. Introducing skills in a systematic order can solve cognitive overload issues. To diminish the likelihood of students experiencing cognition overload, I propose grouping the skills into four sets—hereafter called the Musicking Sets—with each set containing one or more targeted skills. Some of the skills listed by the cited authors are maintained in the Musicking Sets while others are modified to more accurately describe the task asked of the students in each set.

Set 1: Fluency (pitch identification; rhythmic notation; pattern recognition)
Set 2: Short-term memory (focus)
Set 3: Intuition (prediction; composition)
Set 4: Communication (written and oral synthesis; performance)

The first semester of the Musicking curriculum would begin with activities that emphasize skills from Set 1. Each new set builds from the previous set(s) until all of the sets are amalgamated into the final set, Set 4. It is important to realize that when the activities shift focus to skills in a higher set it is not that the lower sets' skills are no longer present. The lower skill sets are always functioning in the higher sets, but the lower skills become second-nature with practice and reinforcement so that students can focus on more sophisticated, composite skills. For example, the activities in Set 3 target its sub-set "prediction" but it is understood that the skills from Sets 1 and 2 are integrated—if not intuited—while performing these activities. The ability to predict, with

stylistic accuracy, what happens next in a piece of music comes from combination of understanding patterns and knowing how scale degrees progress through melodies and harmonies. Predicting where music is leading to and leaving is more sophisticated—and arguably more professionally relevant—but in order to be successful at prediction a musician must have a strong foundation in referencing pitches and recognizing patterns. If we imagine these sets as a pyramid, as shown in Figure 4.1, Set 1 is the foundation from which all other sets are built upon; Set 4 is the pinnacle and ultimate goal of the curriculum activities.

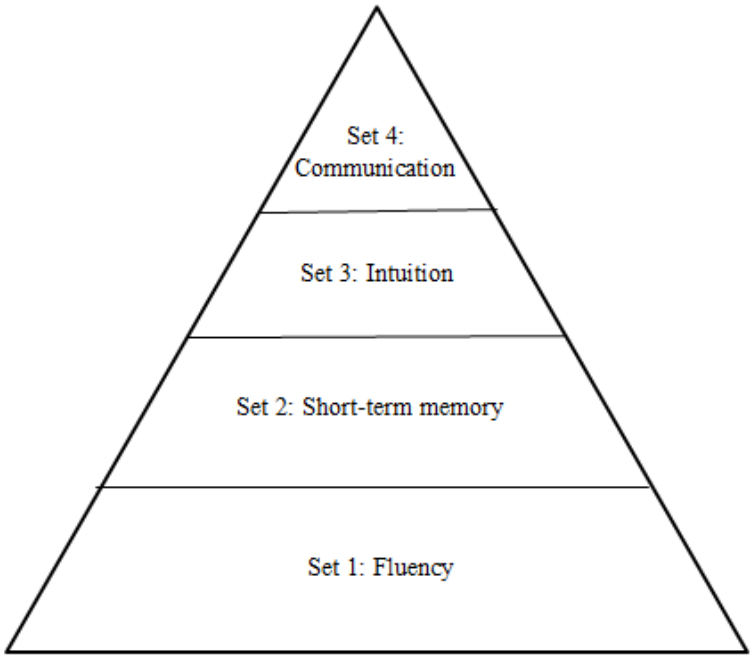


Figure 4.1: The pyramid of Musicking Sets.

Each Musicking Sets contains a subdivision of skills. I will now describe the desired skill outcomes of the Musicking Sets and what types of activities are associated with each Set. I will also explain important pedagogical differences between common

American undergraduate curriculum activities—with examples from current textbooks—and the alternative Musicking activities (to be presented in Chapter 5).

Set 1: Fluency

The most basic skills for Musicking are: pitch identification, rhythmic notation, and pattern recognition. Without absolute pitch it is difficult to aurally identify pitches, but the ability to accurately identify pitches on a musical score is a task that even the most novice musician should be able to accomplish. Exercises for this skill will include naming the order of pitches on a staff in all clefs—with heavy emphasis on treble and bass clef—and progress to more complex tasks such as demonstrating the correct way to notate rhythmic values in a variety of time signatures—with special attention to division, subdivision, and syncopation of beats. While other activities may be integrated into later sets, activities that focus purely on notation will not be incorporated into later sets; this skill, over almost all others, should be the most intuited procedure of all the skills in the entire Musicking skill set.

The objective of the activities for musical notation is to establish fluency; to ignore teaching correct notation will create problems for students as they progress into more complex skills. Undergraduate music students must learn basic notational skills; while it would be patronizing to spend a large portion of the curriculum on this skill alone, it must be taught in order for students to properly intuit the notation procedures. In elementary school when learning how to write, a portion of time is spent practicing writing all of the letters of the alphabet before beginning to practice spelling words and formulating sentences; once the student has mastered writing the letters of the alphabet

there is no need to spend time on this skill, but it is always essential when the student is asked to write.

The next skill in this set is pitch reference. Exercises for this skill will place an emphasis on using solfège as a reference point. In many aural skills textbooks a common exercise involving pitches is interval recognition, where a student is asked to write the type of interval they hear being played. Consider Figure 4.2, in which every interval is an ascending major or minor second. In another context, students might be given a pitch on a staff and instructed to write a particular interval either above or below (see Figure 4.3).

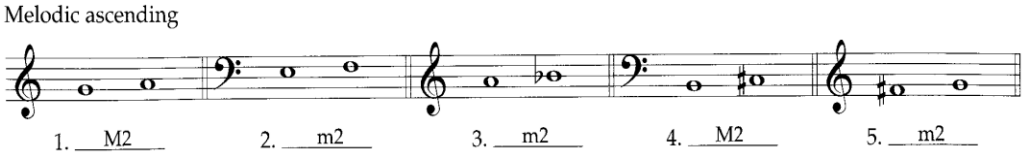


Figure 4.2: Interval identification from *Music for Ear Training* by Horvit et al.[34]

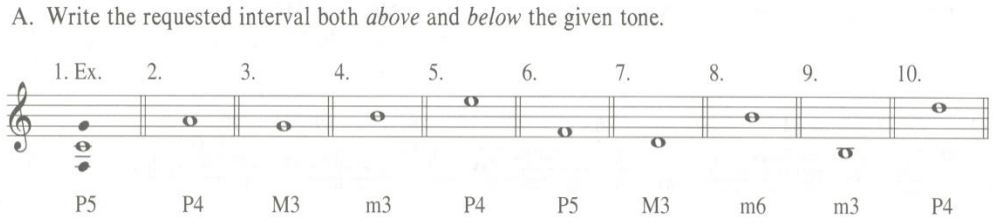


Figure 4.3: Interval notation from *Music in Theory and Practice* by Benward and White.[35]

A problem arises when students try to apply the skill of interval recognition in melodic dictation. It is an ineffective strategy to encourage students to think of melodic dictation as a succession of intervals because they will focus only on one interval at a

34. Horvit et al., *Music for Ear Training*, 1.

35. Bruce Benward and Gary White, *Music in Theory and Practice*, Vol. 1. 5th ed., (Madison, WI: Brown & Benchmark), 17.

time rather than trying to understand the melody as a whole. Understanding the contour of the melodic line is more effective than focusing on the minute details of every interval in the line. If students can start hearing the melody as a line with points of reference rather than working to identify successive intervals every step of the way, they set themselves up for success in the later Musicking sets. Interval recognition may be relevant when learning which intervals make up arpeggiated harmonies, but for melodic dictation the skill can be too troublesome for students. In Chapter 5 we will see an alternative activity called Tonal Orientation that reinforces pitch reference through solfège rather than intervallic relationships.

For this curriculum, the movable "do" solfège solmization system (for major and minor keys) will be used to teach students how to identify pitches.[36] To solidify the concept of movable "do" students will engage in an activity where they will be asked to name solfège syllables of a collection of successive pitches. Naming pitches by their solfège syllable transfers more easily onto melodic—and even into harmonic—dictation than interval recognition by encouraging students to hear the pitches of a melody or bass line as members of the scale instead of worrying about identifying consecutive intervals.

In addition to pitch reference, another fundamental skill of Musicking is pattern recognition. There are a few types of patterns that will be emphasized in these skills: rhythmic patterns, melodic patterns, and harmonic patterns. An example of an activity in

36. I believe that movable "do" would be the best solmization method because it reinforces the Roman numeral system used in harmonic analysis. Regardless of key or mode, the tonic triad is always built on the first scale degree. Teaching students to internalize the first scale degree as "do" regardless of key or mode allows them to create the relationship that the root of the tonic triad is always "do."

rhythmic pattern recognition is rhythmic dictation, where a student will be asked to notate a performed rhythm, like that in Figure 4.4.

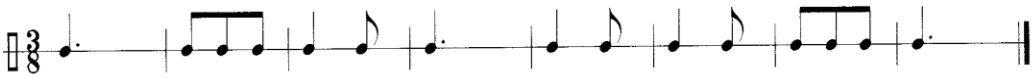


Figure 4.4: Rhythm notation from *Music for Ear Training* by Horvit et al.[37]

While Musicking activities involving rhythm dictation will not differ from current textbook models, there will be a vastly different approach to teaching melodic dictation. Current approaches to melodic dictation do little to aid in students' ability to internalize the performed melody. Figure 4.5 illustrates an example of a melodic dictation melody. In a typical setting, the instructor might play the melody—perhaps giving the first few pitches or some goal pitches—and students would be expected to notate the pitches within a small handful of performances.

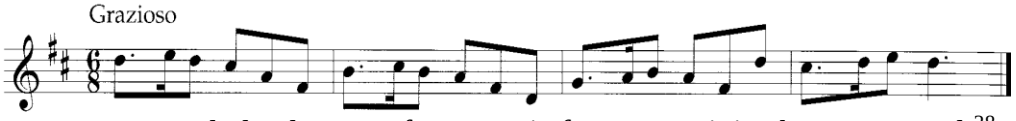


Figure 4.5: Melodic dictation from *Music for Ear Training* by Horvit et al.[38]

I contend that this activity has the tendency to overwhelm certain students, especially those who have developed poor strategies—or who lack experience—for locating tones and identifying melodic patterns. Without effective strategies for identifying melodic patterns and knowing how to orient themselves in a diatonic system, students are left to develop their own methods for remembering and notating the melody such as writing down as many notes as they can remember or working interval by

37. Horvit et al., *Music for Ear Training*, 29.

38. *Ibid*., 180.

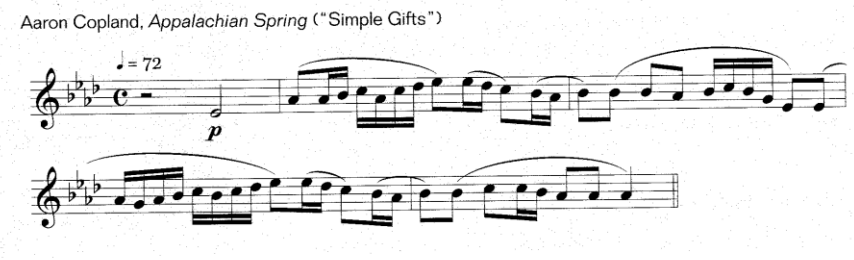
interval. These methods are not the most effective or efficient ways to approach melodic dictation; identifying interval by interval would require many more performances of the melody than allotted, and the working memory capacity can only store a small amount of pitches from unknown melodies. It is possible for a student to work at increasing their working memory capacity, but as an instructor it is a serious injustice not to guide students to better learning strategies. I believe the most effective methods to eliminate feeling overwhelmed by unfamiliar melodies is to teach students how to orient themselves in a diatonic system through Tonal Orientation rather than leaving them to their own devices.

Along with the Tonal Orientation activities, Chapter 5 also presents Pattern Identification and Contour Finding activities that will aid in the development of stronger melodic short-term memory skills. In these activities, an emphasis is placed on learning the contour of a melody before attempting to assign solfège syllables or notating the melody. Then, students will learn to hear melodic segments as being related to one another—for example, by sequence or inversion—and will be able to determine if the notes are conforming to common-practice melodic tendencies. For example, the Musicking curriculum would take the melody from Figure 4.5 and direct students to hear the first measure's melodic pattern to be the same in the second measure as sequenced down a diatonic third. While being able to quickly grasp rhythmic and melodic patterns is crucial to the understanding of single lines of music, it is also important that we teach students how to recognize harmonic patterns when listening to pieces with multiple voices or instruments.

Harmonic patterns in the Musicking curriculum are not so different from the typical aural skills curriculum. Students will learn about chord progressions based on common-practice period standards. For example, pre-dominant function chords (ii and IV) typically progress to dominant function chords (vii^{o7} and V), which typically lead to the tonic triad (I). Students will also learn special progressions like the circle of fifths. In addition to assigning solfège pitches to the melody, students will also assign solfège syllables to the members of each diatonic—and later in the curriculum, chromatic—chords in order to determine the performed harmonies. When these skills are mastered, pitch reference and pattern recognition become extremely useful skills that work together to produce not only accurate dictations but will also facilitate insightful predictions about music.

Set 2: Short-term memory

The extractive listening set works to improve musical focus and attenuation. In the previous set, students learned techniques to accurately identify pitches through solfège reference and recognize patterns. The ability to successfully recognize pitches and patterns will stimulate sensible responses to activities that solicit attention to a small portion of a musical passage. Exercises in this set will include extended listening examples—with and without the musical score—that resemble what some textbooks refer to as contextual listening activities. Students will listen to a piece of music and then be asked to locate, label, or identify specific parts of the music. In Figure 4.6, the student is asked to identify the opening interval in the melody, decide in what meter the melody is operating, and identify which harmony is arpeggiated at the conclusion of the melody.



The exercises below are based on an excerpt that features clarinet from a ballet by Aaron Copland.

1. Which is the initial melodic interval? b
   (a) M3 (b) P4 (c) P5 (d) M6
2. Which is the meter type of the excerpt? d
   (a) compound duple
   (b) compound quadruple
   (c) simple triple
   (d) simple quadruple
3. At the first cadence, which triad is arpeggiated? d
   (Hint: The first cadence occurs just before the return of the opening melodic idea.)
   (a) tonic
   (b) supertonic
   (c) subdominant
   (d) dominant

Figure 4.6: Contextual listening activity from *The Musician's Guide to Aural Skills* by Phillips et al.[39]

It is clear how the skills from Set 1 will prepare students for greater success in Set 2. Extractive listening teaches students how to focus on a particular aspect of music, and by doing so they avoid feeling overwhelmed by the music, or—more importantly—by the tasks asked of them in activities such as melodic or harmonic dictation. When students have solidified systems of identification—pitch reference and pattern recognition—they will be able to focus on one particular aspect without feeling overwhelmed by the entire activity. This set and the previous are the most imperative to the success of intuiting the Musicking skills; when a student can instinctively process smaller parts of music, they

39. Joel Phillips et al., *The Musician's Guide to Aural Skills*. Vol. 2: Ear-Training and Composition. 2nd ed. (W. W. Norton & Company, Inc.), 347.

will more easily be able to engage in the music in a more meaningful way, be it performance or through articulated thoughts. For these reasons, the majority of the curriculum alternatives in Chapter 5 are tightly intertwined with these first two sets in order to develop the sturdiest foundation for the bottom of the Musicking skills pyramid.

Set 3: Intuition

Building knowledge of tonal tendencies is crucial for students to have the ability to create accurate predictions of musical events. Intuition, like extractive listening, stems from a firm grasp of pitch and pattern identification. If a student understands tonal idioms or common tendencies of pitches and harmonies, they will be more successful at predicting the direction of the musical passage; clearly, mastery of this set is more likely if a student has displayed mastery of the previous sets. Students will employ their ability to intuit the skills learned from the previous two sets so they can create accurate predictions and assumptions about music. Exercises in this set will not emphasize precisely what is happening at every given moment in a score; rather, they will focus on encouraging the student to think intelligently about how the music is functioning and, given the information presented to them, where the music might go next.

In addition to formulating written and verbal thoughts about their predictions, students will also be asked to "finish" or compose the end of a given melody or harmonic progression by writing on a staff or realizing the notes on a piano or singing. Figure 4.7 shows an example activity where the student must compose a melody containing only the notes of a major pentachord in simple-duple meter (two beats per measure), and must utilize the given rhythms. After finishing the composition, students must perform the

melody either at the keyboard or singing on solfège. The addition of performance to this set adds another dimension to the curriculum by promoting creativity through composition as well as student performance in the classroom—hence the need for Musicking as the course descriptor instead of Aural Skills.

Review the four melodic models and their examples to help you compose the melodies below. Play your compositions at the keyboard in both hands and/or sing them with solfège syllables and scale-degree numbers.

1. Compose a melody using only a major pentachord (P). Your teacher may specify the first note of the pentachord.

   (a) Compose in simple-duple meter. Provide an appropriate key signature.

   (b) Choose from the following rhythmic patterns:

Figure 4.7: Composition activity from *The Musician's Guide to Aural Skills* by Phillips et al.[40]

The ability to compose a melody—and even to compose a hypothesized ending to a melody—are professionally relevant skills for any music major, but especially for students who perform highly improvisatory music like jazz or for those who wish to compose or arrange music. Students learn to access their musical intuitions with performance and exercise their ability to create compelling analyses and predictions about music they hear or perform. Encouraging students to perform and create music sets students up for success outside of the aural skills classroom and into the practice room and taps into a part of their skill set that might go untouched or underdeveloped.

Set 4: Communication

In this final set, students will be asked to communicate ideas about music through thoughtful written and oral response. While the activities in this set will not directly ask

40. Phillips et al., *The Musician's Guide to Aural Skills*, 99.

students to notate, identify, and recognize pitches or patterns, students will use these skills to formulate intelligent ideas about a musical passage. Since the previous two sets have included articulating—to some degree—the happenings of the musical activities, this set should be less intimidating as no new "skill" is introduced; students need only to use their best vocabulary and predictions in order to be successful at this set. Though seemingly simple, the ability to articulate thoughts about music is arguably the most advanced—and most intimidating—skill learned in the Musicking classroom. As well, this skill proves to be useful for their musical performances; understanding the score beyond the basic ability to read the notes makes the musician more aware of the structure and direction of the piece, thus giving them motivation to produce a more meaningful performance.

While eliciting oral and written responses are essential to the skills of Set 4, they are only two processes involved in the action of communicating music. The ultimate purpose of the Musicking curriculum is to encourage students to be engaged in the process of music. This includes not only understanding and speaking intelligently about music, but also increasing the ability to sight-read, realize figures, and perform music. Activities in this set will be similar to the exercises in the previous sets, but significantly more advanced as the curriculum progresses (the final semester of Musicking, the fourth semester, will incorporate chromaticism and more complicated rhythms and melodies than in the earlier semesters). Set 4 is not a means to an end but should be viewed as the most advanced process in the Musicking curriculum. Earlier semesters will include the

process of articulating and performing music, but students need only to express basic ideas about music at those stages.

The four Musicking sets—when gradually introduced and integrated—provide activities that teach students how to intuit fundamental skills, focus on smaller tasks in a larger context, and exercise their creativity through performance and composition. But before students can reach the pinnacle of the four sets they must be able to perform or intuit the tasks from the previous sets. A skyscraper would not exist without workers diligently laying the foundation; if the foundation is not sturdy, the structure of the skyscraper will be weak and likely dismantle. The trained musician develops similarly. It is imperative to the overall success of the music student that their studies reinforce fundamental skills before expecting more advanced tasks to be performed. If their fundamental skills are weak, it is likely that more sophisticated skills will either be poorly developed—or worse—not developed at all.

Next, I will elaborate on three alternative activities from the Musicking curriculum. The alternatives emphasize Fluency (Set 1) and Short-term memory (Set 2) aspects of the Musicking pyramid. As stated previously, the more diligent we are about developing fundamental Musicking skills, the likelihood of experiencing success in the more complex skills increases. Sample activities for each alternative are provided as well as explanations on why these methods are the most effective means of establishing Musicking skills in undergraduate music students.

CHAPTER 5: ALTERNATIVE ACTIVITIES

The Musicking curriculum introduces three alternative activities which supply the foundation for the entire program: Tonal Orientation, Contour Finding, and Tonal Pattern Identification. These activities relate most directly to the first two Musicking Sets (Short-term memory and Extractive listening, respectively) but constitute excellent introductory activities for the remaining sets. As stated previously, the objective of the Musicking curriculum is to solidify the skills from the first two sets so that they may be absorbed in the later sets. Since skills like notation, pitch reference, and pattern recognition are more rudimentary than the other Musicking skills, their complimentary activities are also basic. An argument might be made that these activities—and more generally, these skills—are too trivial and should not receive much emphasis in an undergraduate music curriculum. My counterargument, again, is that these basic skills are often ignored and need to receive some sort of emphasis in the beginning of the curriculum in order to assist students who have weak Musicking skills or lack these basic skills entirely. Students need the chance to process easier tasks at one time before attempting to perform multiple tasks simultaneously.

Of course, it would not be appropriate to spend copious amounts of time on the most basic of activities. The four sets are not arranged to be presented in isolation or even in a one-per-semester sequence; the sets are to be integrated, at various degrees, throughout each of the four semesters. The point of the curriculum alternatives is to provide a more concrete starting point for later activities. Students will be able to refer back to elementary tasks in order to prepare for more complicated activities. To illustrate

the versatility of these simple skills, I will show the curriculum alternatives in their most primitive form and then provide examples of activities where these skills act as a spring board for more complex activities and discussions.

Tonal Orientation

In Chapter 4 I discussed the difference between interval identification and pitch reference and why the latter is a more effective means of teaching pitch recognition in short-term memory; asking students to identify intervals in the abstract does not teach musical context as well as using solfège as a point of entry into a melody. By teaching solfège, we are allowing students to create tonal connections from the melodic content to implied or literal harmonies. It has been said that "When listening to music, we hear the sounded elements not as disconnected units but in relation to one another… perceived in terms of their functions in the broader context of pitch and rhythm... [to] achieve a sense of the underlying organization of the composition."[41] To aid in understanding sounds in the context of the work as a whole, the Musicking curriculum employs Tonal Orientation activities using solfège.

A preliminary activity for Tonal Orientation involves identification of a single tone in a tonal context. Figure 5.1 illustrates a sample activity where the professor would announce the key signature, play a short chord progression that establishes the key, and then play a single probe tone. After hearing the probe tone, the student will be asked to identify the tone with solfège, thus relating it to the key in which it is operating. From the example in Figure 5.1, students would notate "la" as the probe tone operating in C Major.

41. Carol L. Krumhansl, "Perceiving Tonal Structure in Music: The Complex Mental Activity by which Listeners Distinguish Subtle Relations among Tones, Chords, and Keys in Western Tonal Music Offers New Territory for Cognitive Psychology,"- *American Scientist* 73, no. 4 (1985): 371.

The use of a single probe tone in these activities will be appropriate for the first few weeks of the curriculum, but as students begin to build confidence they will progress to identifying up to five probe tones.[42] Figure 5.2 shows an example of Tonal Orientation where the professor plays four probe tones after establishing the key. With the introduction of multiple probe tones students begin to build a working memory capacity while assigning solfège to the tones.

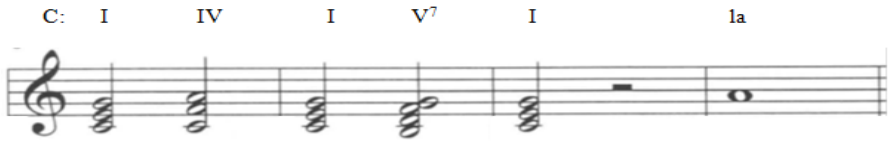


Figure 5.1: Tonal Orientation with one probe tone.

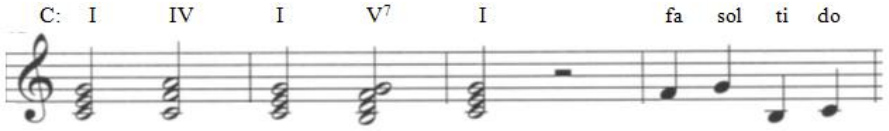


Figure 5.2: Tonal Orientation with multiple probe tones.

The point of this activity is to encourage students to hear notes (tones) as relating to one another in a tonal context.[43] Rather than being bombarded with notes, students will be able to focus on single—or multiple—tones and relate them to the key rather than aimlessly trying to identify pitches or intervals. While Tonal Orientation is likely to be used primarily in Sets 1 and 2, the activities progress in difficulty both in the number of pitches in an exercise—increasing the working memory capacity—and by including chromaticism—pitches that do not fit in the diatonic major or minor scale. Once the

42. Tone Instigation activities will include no more than five probe tones. Beyond five tones, the notes start to form a pseudo-melody. Limiting the amount of probe tones maintains the balance between Tone Instigation and melodic dictation exercises.

43. A similar experiment was conducting using the probe tone method where participants were to rate the probe tone in terms of how well that tone indicated or "fit" into the key-defining model (scale or chord cadence). The goal of the experiment was to determine which tones (scale degrees) were the best indicators of a key. Krumhansl, "Perceiving Tonal Structure in Music," 372.

working memory capacity is strengthened and their ability to hear tones in relation to the key scheme, students will be able to approach activities like melodic dictation with more confidence. They can use the solfège as a means to reference pitches along the way in a melody to better relate the surrounding tones. In addition, the ability to focus on and identify single pitches in solfège will assist with making connections in harmonic dictations.[44] For example, if a bass progression has "ti" in the bass and a major-minor seventh chord sounding above, students can apply the knowledge that the V chord—in first inversion—contains "ti" in the bass and they can deduce that the applied harmony is likely a V chord rather than a root position vii^{07}chord.

Using Tonal Orientation also prepares students for identifying key areas or modulations (activities that would be included in Sets 3 and 4) without prior knowledge of the key signature. The process of finding a tonal center—also called "tonal induction"—relies heavily on a person's musical intuitions and their ability to perceive or feel a pitch as a tonal center.[45] An example of a tonal induction activity from Set 3 might include students vocalizing their perception of tonic immediately after hearing a performed melody or musical passage. The activity for Set 4 will increase in difficulty by exposing students to tonally ambiguous melodies and perhaps post-tonal works; students will be asked to vocalize the pitch they believe to be tonic and then, after looking at the musical score, provide a thoughtful response which defends their reason for choosing that

44. Rogers, *Teaching Approaches in Music Theory*, 108.

45. The phenomenon of tonal induction is a relatively young research area for music theorists and psychologists. A primary issue with defining tonal induction is that there are no strict boundaries for defining tonality in Western music. Researchers are trying to find the best model for this key-finding process, but there has yet to be a single method with accounts for all tonal music. Piet G. Vos, "Tonality Induction: Theoretical Problems and Dilemmas,"- *Music Perception* 17, no. 4 (2000): 283-294.

specific pitch as tonic. It will likely occur that students will come up with different candidates for tonic, but the goal of the activity at this level is to encourage students to be able to utilize and express their musical intuitions.

Contour Finding

Taught alongside the Tonal Orientation activities is Contour Finding. This activity bridges the gap from merely identifying diatonic pitches in a tonal context to understanding how the stream of pitches relate to one another as a melodic line. The contour of a melody is determined by the space between pitches and can only go in three directions: up, down, or stay the same. Contour Finding bears a striking resemblance to interval identification as it concerns the space between notes, but an important distinction lies between determing the contour of a melody and interval identification. Ian Quinn writes, "When we speak of the pitch contour of a melody or pitch pattern, we are concerned only with whether one note is higher or lower than another, and not how much higher or lower it is. Information about the size of intervals is discarded, while information about the direction of intervals is preserved."[46] A representation of a pitch contour model is presented in Figure 5.3, representing a series of nine notes. There is no distinction between step and leap in the model; instead, a notation system is devised which represents the direction of each interval by notating "+" for when the series went up and "-" when the series went down (it is also possible for notes to remain the same, in which case the subject would notate "0"). The result is a spiked line that illustrates the overall contour of the nine note melody.

46. Ian Quinn, "The Combinatorial Model of Pitch Contour,"- *Music Perception* 16, no. 4 (1999): 440.

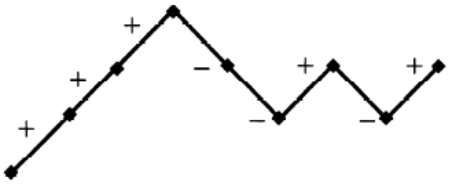


Figure 5.3: Pitch Contour Model.[47]

The majority of Quinn's research focuses on successive pitches in a non-tonal context—his studies focus on how pitch adjacency influences perception of melodic contour.[48] However, I think that his method can serve as a basic model for representing simple melodic patterns (see Figure 5.4). Through identifying contour along side identifying specific pitches (using Tone Instigation), a more accurate memory for a melody can be developed and be transcribed correctly.[49] For example, Figure 5.4 shows two different melodic patterns; the first pattern involves only stepwise motion while the second is an arpeggiation of a triad. By using Contour Finding, students can determine that both melodies have the same contour from start to finish—four ascending pitches and four descending pitches—but exhibit markedly different approaches to melody. By making use of rudimentary exercises like Figure 5.4, students will begin to become sensitive to more minute changes in contour.

Figure 5.4: Contour Finding exercise with two melodies.

47. Quinn, "The Combinatorial Model of Pitch Contour," 442.

48. *Ibid*., 454-455.

49. Karpinski, *Aural Skills Acquisition*, 67.

Tonal Pattern Identification

The combination of Tonal Orientation and Contour Finding creates Tonal Pattern Identification. In this activity, students will be exposed to types of melodic manipulations: sequence, inversion, retrograde, retrograde inversion, augmentation, diminution, and fragmentation. Tonal Pattern Identification exercises start out by introducing students to two melodic motives, such as those in Figure 5.5. The first motive will be performed—four or five performances should suffice—and students will be directed to identify and notate the pitches of the first melody first on solfège, then by notating pitch and rhythm. Then, the second motive will be performed and students will be asked to identify and notate the melody. From their training in Contour Finding, students will be able to hear that the two melodies in this case have the same contour but do not contain the same notes (which they will now know as a melodic sequence). In order to determine the pitches of the second motive, students will use their Tone Instigation skills to identify the starting pitch of the second motive as "fa" in the operating key of C Major; if students have successfully labeled the solfège of the first motive, they will be able to label the entire second motive based on the first pitch since they have identified the two motives as being related by sequence.

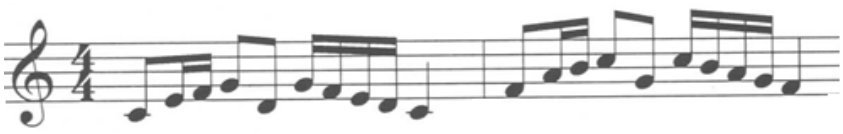


Figure 5.5: Pattern Identification with two melodies in the same key signature, the first pattern beginning on "do" and the second patter beginning on "fa."

As the curriculum progresses, the Pattern Identification exercises will increase in length, pattern variation, and level of chromaticism. This activity might not be

appropriate to continue practicing in the abstract past the first semester of the curriculum since it primarily introduces students to recognizing patterns, but this skill does transfer well onto melodic dictation—and later, onto analysis or contextual listening exercises. Research has proven that a person is more likely to remember a melodic sequence if it conforms to typical tonal tendencies.[50] Exposing students to common melodic contours in the primary stages of their Musicking studies allows them to build a repertoire of musical expectations. Through this melodic repertoire, they will have more success at identifying meaningful patterns in music.

Tonal Pattern Identification is also a crucial aspect of defining boundaries of musical form and in communicating musical ideas. In a fugue, the subject and answer are both comprised of the same melody but start on different pitches and may contain different intervals; a real answer maintains intervals exactly from the subject, while a tonal answer manipulates some of the intervals (frequently in the opening of the melody where "sol" to "do" movement occurs). Though the subject and answer have similar contours, alerting students to hear the change in starting pitch of the melodic pattern will allow them to more quickly determine if the answer is tonal or real.

By presenting these basic skills in isolation the mind is more susceptible to internalize them and more attention can be given to more complex processes. Students are able to be more articulate about the music they hear and will have nurtured their musical intuitions with a set of skills that enables them to process more musical ideas at one time. These curriculum alternatives provide a strong foundation for all levels of skills in the Musicking curriculum, and by integrating these skills gradually, the problem of

50. Krumhansl, "Perceiving Tonal Structure in Music," 377-378.

cognition overload is eradicated and undergraduate music students can generate a musical skill set that is resilient and valuable to their professional careers.

Acclimating students to the many processes of music is not a task to be taken lightly. While several students may come to the university with some background knowledge or strategies to approach music, there are many who have not yet developed their musical skills. But even in the case of the undergraduate student who has prior musical experience, it may be the case that their fundamental skills were poorly developed; an example might be the student who learned to perform music by rote rather than learning to read the score. It is essential for students who aspire to obtain a degree in music to be able to perform well the various tasks that is "to music." As instructors, it is our responsibility to expose students to the most effective and efficient means of learning, performing, and talking about music.

Keeping in mind the limited capacity of the working memory, we must gradually introduce activities that require more mental energy. If a complicated task is asked before basic skills are developed, students run the risk of experiencing cognitive overload and cannot effectively complete the task. If we spend enough time developing simpler cognitive tasks—like Tonal Instigation and Tonal Pattern Identification—we can submit these tasks to our long-term memory and reserve our mental energy for more complicated tasks—such as communicating ideas about the musical form of a piece. Though rudimentary at first, these alternative activities assist the student with building a more stable foundation of Musicking skills. Through a stronger foundation, cognitive overload will cease to exist and students can effectively develop their Musicking skills.

CHAPTER 6: FURTHER RESEARCH

In order to determine if the alternative activities present the most effective way to teach fundamental skills in the aural skills classroom, we will need to test the Musicking curriculum in an undergraduate program. The study will include the activities from Chapter 5 alongside the other activities described in Musicking Sets from Chapter 4. Students will take and entry exam to test their current Musicking skill level (based on the four Sets), participate in the curriculum for four consecutive semesters, and take an exit exam at the end of the program to test for improvement in their skills. Finally, we can take these results from the Musicking curriculum and reveal if the alternative activities produced a higher student success rate than current aural skills curricula.

On a local level, a two-year (four-semester) long case study in a single American university will be necessary to measure the value of the Musicking curriculum alternatives. First, students will take an entry exam in aural skills which tests their current skill level. The exam will contain all concepts students should be able to master by the completion of the two-year program. Questions on the exam will target—and be partitioned into—each of the four Musicking Sets and will increase in difficulty. After tabulating the results of the exam, students will be separated into two groups: a control group and an experimental group; the control group will not participate in the Musicking curriculum and will follow the university's current undergraduate music program, and the experimental group will participate in the Musicking curriculum. Placement of the groups will be double-blind and overall success of the exam will not determine to which group students are assigned.

The value of the Musicking curriculum alternatives will be measured in multiple ways. Primarily, the study will be interested in measuring the improvement on the exit exam scores at the conclusion of the two-tier curriculum. The exit exam will be in the same format as the entrance exam but will not contain identical questions. Of course, both the control and the experimental group results will be compared in order to see which curriculum showed the higher scores and the greatest levels of improvement.

In addition to viewing improvement from exam scores as a quantitative, we can also break down the results of questions as they target the four Musicking Sets in order to see progress from each set individually. Results of the exit exam can be compared as a quantitative whole—determining the average percent of increase of the entire class—or on an individual basis (i.e. Student R improved 10% while Student M improved 7%).

We could also compare attrition from both student groups. Uncovering students' premature exist from the program can produce interesting results. On one hand, it could be an indicator of the relative success of the two curricula; high drop rates could mean that the student did not successfully learn the material. On the other hand, not all students exit a program due to failure to learn the material. A student might develop a terrible illness or experience a devastating event (death in the family, a car accident, etc.) which can cause the student to be distracted in class or miss several class sessions. Therefore, we cannot assume that every student who drops the course failed to master the material, making the decrease in enrollment a weak comparison for success rate of either program. As well, an increase in enrollment could also tamper with the results of the study. A decision would have to be made whether including new student enrollment (typically

transfer or foreign-exchange students) would be appropriate to the study if they also take the entrance exam—albeit at a different semester than the other students in the study. An important question arises: Does it matter when a student enters the program so long as they partake in the entire curriculum, or are the results of this study exclusive to the members of the curriculum from the beginning of the study? The answer to this question might simply be to omit student enrollment results in order to keep as many outside factors out of the study, but ultimately these results are not as significant of an indicator of overall success in the program as the results of the entrance and exit exams.

A written evaluation of the curriculum will accompany the exit exam. On the evaluation, students will be asked to elaborate on their progress in the class, on the difficulty level of activities and exams, and comment on how the skills they learned in class applied to their performance in other classes and in their musical performance. Since the students will be not be graded for offering their opinions of the curriculum, their answers would serve purely to provide feedback to the instructor on their methods. Though it may not be particularly important to see if a student enjoyed the program they participated in, the written evaluations could shed light on specific aspects of the program they found to be useful or difficult in order to create productive curriculum revisions.

On a larger scale, this study could be compared with American undergraduate music programs from multiple universities. The most fruitful study would include a number of universities that incorporate different aural skills curriculum and will be located in several different regions across the United States in order to gain a truly diverse pallette of students and teaching strategies. This study could be more difficult to

declare results since there will be multiple curricula present; methods of assessing students' success as well as program requirements may differ across universities. The most effective way to measure success from the different programs is to administer the same entrance and exit exams to every university regardless of curriculum content. Results will show success from this particular exam—which may differ from exams taken during each respective curriculum—but the purpose of the study is to reveal the increase in success of the Musicking skills as applied to each curricula.

In conclusion, we can assess the success rate of the Musicking curriculum in a variety of ways. Performing the study on a local-level allows for a single university to test their current aural skills curriculum against the Musicking curriculum. If results from the study show a higher increase in success from utilizing the alternative activities from the Musicking curriculum, it could inspire the university to make a curriculum change. If a university decides to adopt the Musicking curriculum into their undergraduate program, we can compare results against other universities to determine the overall effectiveness of Musicking curriculum and its alternative activities.

A strong set of fundamental Musicking skills is a crucial part of a musician's professional abilities. When they are able to transfer simple tasks from short-term memory to long-term memory, more mental energy is available to commit to performing complicated skills. In order to move skills from short-term memory, we need to employ effective storage strategies to ensure the skills are firmly embedded in the long-term memory. Fundamental tasks cannot haphazardly be taught to our undergraduate students. Whether they come up to the university with a set of learned strategies or not, it is our

duty to expose students to the most effective methods for perfecting their Musicking skills. A strong foundation of skills, like the fertile soil of a field, allows the student to grow and reach their highest potential.

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