

**THE PEDAGOGY OF BALINESE VOCAL TECHNIQUE:  
DEVELOPING TOTAL PERCEPTION THROUGH EMBODIED PRACTICE**

by

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## Abstract

This study examines elements of Balinese vocal pedagogy in order to understand the process of teaching and learning in my lessons with several master singers on the island, focusing on the teachings of Ni Nyoman Candri. Through ethnographic fieldwork, interviews, lessons, and analysis of their content, I will investigate the core concepts that were emphasized throughout my vocal practice.

After reviewing the body of literature that has influenced this work, the study will begin by outlining some basic context for how the knowledge is approached: informal methods of mimicking and repetition as well as kinesthetic embodiment of expression. This will serve as the basis for discussing the initial processes of learning vocal technique: the practice of opening the voice (*mengeluarkan suara*) through improvised sound and movement, as well as how that technique expands into a layered approach to learning melodies.

The Balinese concept of *ngunda bayu* (the process of distributing energy through the body) will also add to the discussion, setting a visual representation for the vertical axis in the body that outlines the physiological process of the breath cycle. By simplifying the process into three elements: energy, breath, and gesture, this study will evolve into a discussion of context, showing how the three work in alignment to manifest a single intention: a confluence of embodied vocal expression and total perception.

The work concludes with a discussion of the larger, theoretical context of my previous western classical vocal training, posing some questions about the process and relating it to western scholar Christopher Small's term *musicking*. By reviewing and reflecting on the identified elements in Balinese pedagogy, I will give consideration to how this study may be expanded and integrated into other pedagogies and discourses of vocal learning.

## **Preface**

This dissertation is original, unpublished, independent work by the author, Chelsea Dawn Edwardson. The fieldwork that formed the foundation of this work required the approval of the RISE UBC Behavioural Research Ethics Board. The Principal Investigator (PI) was Michael Tenzer, the Department Approver in the music department was Richard B. Kurth, and the Primary Contact was myself, Chelsea Dawn Edwardson. The study, numbered H13-03133, was deemed to be a behavioural study of minimal risk. The initial approval date for the study was March 12th, 2015 and the study required ethics reviews with annual renewals. Study completion occurred March 29th, 2015. Unless otherwise noted, all photographs are taken by the author.

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*I dedicate this thesis to Cece.*

## Chapter 1: An Introduction to Total Perception

*My perception is not a sum of visual, tactile and audible givens. I perceive in a total way with my whole being: I grasp a unique structure of the thing, a unique way of being, which speaks to all my senses at once. (Merleau-Ponty 1968: 48)*

### 1.1 Feeling Sound, Hearing Movement

*I'm sitting in front of a world-renowned vocalist in Bali, Indonesia: Ni Nyoman Candri. She's but a foot away from me, looking straight into my eyes as she invites me to participate in her expression through movement and sound. It's not a typical invitation, however. Instead of words, she gestures for me to join, and before I know it, I'm following her blindly: notes adjusting within a split second to match her pitch; torso subconsciously following her vertical movements. As her chin moves to the left, mine moves to the right. She furrows her eyebrows and the look in her eyes immediately becomes embodied in mine. We are synchronized, singing and moving together, expressing in tandem as if we're both in front of a mirror, adjusting our glances to the energy being conversed. It feels as though I am digging into the roots of my voice, pulling up the deepest force and allowing it to reverberate through my entire being—reaching the sound that I have always sensed was within me but couldn't seem to find. The expression in the core of my body is matching the sound that I feel. I am immersed in the context of a living tradition—a somatic practice, a holistic approach to vocal learning, and no words are needed to participate.*

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Learning vocal music requires perceiving in a total way. After all, the performer is also the instrument. And to complicate things further, the unity of the performer and the instrument presents an intangible force, a “product of all the various processes that got to make up the human organism: Breathing, posture, thought, intention, desire, repression and depression and compression and so forth. Think of something that describes people and it’s part of Voice” (Foreman 1998: 6). In my own experience with vocal training, I often felt that the goal was to constantly evaluate and quantify my voice’s development, which stands in contrast to the qualitative and experiential approach that Candri presented. The conflict between these two experiences motivated this thesis.

How do we talk about vocal learning when so much of the process is invisible? It’s not like a trumpet or a violin where we can physically see the adjustment in our lips or fingers in correlation with an altered sound. Or, as Candri’s brother, I Made Bandem, pointed out in an interview, “When you study gamelan, right away there’s a tone, there’s a ding, there’s a dong, this is dung. While studying Balinese vocal it’s difficult to make the sound itself” (Bandem, p.c. March 25, 2015).

Further, how can we quantify a curriculum when vocal processes and perceptions are so variable from instrument to instrument? “The singing voice is an instrument which is activated as much by mental and emotional elements as by physical ones” (Doscher 1988: 192). There are external factors that influence vocal functionality: perceptions of space including acoustical considerations, temperature, air quality, and humidity, among others. There are social variables such as emotional state, perceptions of people around, and perception of critical feedback. There are internal physical factors that fluctuate and affect the voice such as respiratory health, muscular condition, hormone changes, sleep, and diet.

Unlike other instruments, the physical structure itself is also flexible. It moves, it varies from day to day, and it changes over time. The condition of body has a direct correlation with the functionality of the voice, and as Rahaim elegantly puts it, “treating a singing singer as either flesh or form is like treating a thrown ball as either rubber or moving as we try and catch it” (Rahaim 2012: 89). We can’t separate and objectify either component.

Inside this instrument is also a mind, which can change the singer’s perception of functionality at any moment. The voice does not exist until a command is activated in the brain, “which is [then] excited into action by the impulse to communicate, which drives intention—not a physical act, but a mental one” (Foreman 1998: 99). Perhaps, then, the question “how do we talk about vocal learning?” evolves naturally into a discussion of intention. Considering this, the importance of context, learning environment, and perception are what I’ve found to be the most fundamental factors in vocal learning. The context of my Balinese lessons provided me with an experience that has transformed my own teaching, performing, and practice into a process of total perception: a gestalt of physical, mental, and emotional components.

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After coming back from my first trip to Bali and the experience of the lessons I had with Candri and several other Balinese singers, I signed up for a North Indian singing class. It gave me my first insight into why the Balinese learning environment was empowering for me. Because the class was offered through the university, I had expected to enter into an academic setting where, although we “practiced” our voices, theory would be given and we would have tests on the history and the philosophies behind certain musical concepts. I quickly learned, however, that I had signed up for something much different than a regular

three credits.

As each student entered the first class, we were gestured to sit somewhere on the floor in a circle where pillows had been placed for us. The consistent drone of a tanpura was playing in the background. There was no instruction other than a melody being sung by the teacher, David Tsabar,<sup>1</sup> beckoning us to join and imitate as it cycled over and over again. Tsabar stopped about halfway through the lesson to welcome us, mention some brief details, and inform us that we would not be approaching this course in the format of a traditional western classroom, but in the informal way he was taught from his vocal teachers in India. We *would* learn some context and background information about the style, but the majority of our classes would be a mimicking experience—of both body and sound—similar to the experiential practice I participated in and observed in Bali.

During these classes, I often felt the way I did with Candri: immersed in a meditation of movement and sound. The focus on the kinesthetic aspects of the practice superseded the intellectualization of information. We used our hands to shape the melody, to initiate and propel the energy of the voice. We used our torsos to follow and guide the breath. We used our chins to define pitch changes and timbre fluctuations. Our physical movement expressed the *sound* rather than the words.

This movement and sound synchronization was an element that struck me as not only important but also very different from my previous experience in the western tradition. Instead of *learning about* the information, we *practiced* the information by allowing our sensory experiences to receive and perceive in a total way. This made room for those

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<sup>1</sup> A Vancouver-based teacher and performer of North Indian vocal music.

experiences to “become integrated through the body, or rather, in the very constitution of the body and the human mode of being” (Pallasmaa 2005: 40), as “being is what requires creation of us to experience it” (Merleau-Ponty & Lefort 1968: 197). These gestures were not only a part of the music, they were visual manifestations revealing a process and defining a sensation that would be otherwise invisible.

This experience opened up a dialogue inside me. It inspired specific interest not in genres, but in how vocalization was taught and how the environment affected the process. I wanted to dig deeper and understand what was going on beneath the surface, and why the holistic approach of the North Indian and Balinese learning environments resonated with me.

## **1.2 Thesis Aim and Overview**

In this study, I will examine elements of Balinese vocal pedagogy in order to understand the process of teaching and learning in my lessons with several master singers throughout the island, with a focus on the teachings of Ni Nyoman Candri.<sup>2</sup> Through ethnographic fieldwork, interviews, lessons, and analysis of their content, I investigate the core concepts that were emphasized throughout my vocal practice. Although the learning process will undoubtedly vary from student to student, I found in my own experience—both in my lessons and watching other’s lessons—that there were some common themes I could isolate and identify as Balinese, independent of genre or goals of the student. I will define these components, investigate their function, and ultimately expand this case study into a conversation about how environment, relationships, and Balinese pedagogical elements

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<sup>2</sup> To be formally introduced in Chapter Two.

interact.

In the remainder of this chapter I give further context to my research and then present a review of relevant existing literature. Chapter Two will be the main body of my observation and analysis. I will first explore the pedagogy of Balinese vocal technique: how the body and voice are fused together into a single process of mimicking with the initial goal of opening the voice. I will also consider the approach of layering as opposed to chunking: how song learning is first presenting basic melodies (*polos*) and later techniques on elaboration of those melodies (*wilet*). Next I introduce the Balinese concept *ngunda bayu* (wind energy), which encompasses the flow of the breath and how it is distributed through the body. The elements of energy, breath, and gesture come together to express a single intention, and these three interact with one another in different ways depending on the context. To conclude I show how in a pedagogical situation, Balinese methods can offer a different perspective on vocal transmission processes.

The concluding chapter will compare these techniques with those of my previous western classical vocal training, posing some questions about the process and relating it to Christopher Small's term *musicking*. I will review and reflect on the identified elements in Balinese pedagogy and give consideration to how this study may be expanded and integrated into other pedagogies and discourses of vocal learning.

### **1.3 Research Context**

The pedagogy of Balinese vocal music has not yet been considered in-depth, but a variety of scholarship relates to the issue at different levels. This includes scholarship on Balinese music and culture, the study of musical transmission in ethnomusicology, writings

on vocal pedagogy (most from a Western perspective), and, most generally, work on cognition and the psychology of learning.

### **1.3.1 Balinese Vocal Music**

The study of Balinese music has been a major topic for ethnomusicologists and anthropologists since the publication of McPhee's *Music in Bali* in 1966. While there have been countless writings on the instrumental music and dance traditions, only a few studies have been dedicated to the vocal music, and even fewer to vocal pedagogy. Despite this, some sources on Balinese vocal music have been useful in supplementing my experiences in the field.

One of the first detailed analyses on the vocal music is Richard Wallis's dissertation, "The Voice as a Mode of Expression in Bali" (1980). This may be an older source, but it remains one of the only in-depth examinations of some of the most important vocal genres in Bali: *sloka*, *wirama*, and *kidung*, all poetic forms defined by specific meters and contexts. Wallis covers genre histories and context that give insight into singers' relationship with the music. However, although he affords a glimpse into the learning process, pedagogy is not the focus. Rather, his aim is to "explain both structural (i.e. musical and textual) organization and context of usage in order to understand the full scope of the mode of vocal expression" (250). Yet, in his conclusion, Wallace acknowledges that "music-making is not merely a collection of observable musical facts" (ibid), but a myriad of relationships and meanings derived from contexts of cultural importance (251). It is upon this thought that I have built my own research.

Other writings on Balinese vocal music have also paid special attention to the literary

traditions, focusing mainly on aspects of text and language. Mary Zurbuchen's *The Shadow Theatre of Bali: Explorations in Language and Text* (1981) considers the complex "use of symbolism, allusive language, and metaphor" (viii) through vocal invocations used in Balinese performance. Her interest is primarily on the language and verbal arts, in which she conveys the perception of "light and shadow, movement, music, the sounds and smells of tropical nights, the settings of crowds and busy ritual" (x). She acknowledges that "the linguistic shape...could only be explained after coming to terms with many other ways in which languages and texts are experienced in Bali" (ibid). This has been useful to me not only in understanding structural elements of the poetry, but also in confirming my multidimensional experience with learning and performance.

Similar to Zurbuchen, Rudiger Schumacher's *Musical Concepts in Oral Performance of Kakawin in Bali* (1995) examines the role of oral transmission in the history of literature and text. His book analyzes structural aspects of the language and poetry and relates them to their constructed musical contexts (i.e., how structure influences phrasing or melodic contour). As he observes, "each poetical tradition as a body of artificially molded language is based on specific rules of vernacular language and diction" (489). His discussion includes the notation system and the symbolization of long and short notes (*lagu/guru*), as well as what a performer does "in order to make his performance suitable, harmonious (*lengkut*), and attractive (*bangkit*)" (494). However, transmission is not the focus. His goal is to understand poetic structure and how it is conveyed through performance.

Most relevant for my study is Ed Herbst's *Voices in Bali* (1997). Herbst leads the reader through a dynamic journey of "gradually shifting contexts of discussion" (xviii). His reflexive approach inspired me to write in a similar style incorporating "multiple viewpoints

rather than one singular argument or one straight line of thought” (xix). The focus of his book revolves around several Balinese concepts, but particularly “desa-kala-patra” (time-place-context), which he describes as “where things come from, where meaning and life-forces are manifested” (1). I will touch upon this again in my conclusion. Although he isn’t directly focused on pedagogy, Herbst believes that “the best way to get into the various processes of Balinese artists is through the actual learning process...[as] the learning process is, in many ways, the music” (p. xviii). By comparing Herbst’s experience with my own, I hope to expand upon it in the later chapters of this thesis.

### **1.3.2 Vocal Pedagogy**

In order to supplement the lack of Balinese-specific resources and to help me fill in the gaps on the physiology, theory, and practice of learning voice, I turned to the literature on western vocal pedagogy. I have used these resources to examine the potential biological correlations in physiological terms, to contrast them with Balinese practice.

Richard Miller’s *The Structure of Singing* (1996) and “Solutions for Singers” (2004) are staples of North American vocal pedagogy and have set a standard for this topic. He, like many others, covers breath management, vocal health, laryngeal function, registers, dynamic control, vowels and resonance, timbre, vocal terms, the structure and mechanisms, and the physiology of the instrument. He also offers practical advice for teachers and students through examples and exercises.

While an understanding of physiology is a necessary supplement to the practice and has helped me imagine what is happening in an “invisible” process, his lack of attention to the body, gesture, and psychosomatic elements is limiting. At the end of *Solutions for Singers*

Miller writes: “When you deal with such separate areas of the voice technique as breathing, resonance balancing, registration, and vowels, how can you be treating singing as a holistic experience?” (247). He is consistently diagnosis/prescription-based and, in his final paragraph, he states that “anyone who practices an art form must first learn to deal with all of its components. That is why the singer needs to learn systematically coordination of the motor, the vibrator, and the resonator. Only then can the art of performance become a holistic event” (248). This idea conflicts with my experience in Balinese vocal learning, where music is both performed *and learned* as a “holistic event.”

Barbara M. Doscher’s *Functional Unity of the Singing Voice* (1988) seems to allude to a more integrated approach for a “unified” approach to a functioning instrument. Her contribution “provides a text that describes the anatomy and physiology of the breathing and phonatory mechanisms and the acoustical laws necessary to an understanding of resonance, with the intention of demonstrating their functional unity” (1988: x). However, aside from a few sentences scattered throughout the book, only two paragraphs address the non-physical dimensions of the instrument. Although she acknowledges that “the effects of anxiety and emotional stress on physical function can be devastating” (193), her lack of further discussion on the issue appears to indicate that the interior state is less than an equal counterpart to the unity of a functioning instrument.

Miller, Doscher, and other similar works touch superficially upon the aspect of interior state, while developing tools to strengthen the singer’s inner world merely address surface coping mechanisms, such as suggesting a glass of Mariani wine to be taken before singing to aid the “ailment” of nervousness (Browne & Behnke 1886: 221-22). Many authors allude to the “painful effects” this can have on a career (ibid) without providing constructive

suggestions. Only recently has there been more focus given to this component.

*Power Performance for Singers* by Shirley Emmons and Alma Thomas (1997) was one of the first books to adequately address the psychosomatic factors related to the voice. It addressed anxiety and fear, developing relaxation, creating motivation, handling emotions, refining concentration and focus, accepting mistakes, managing distractions, and using visualization and positive thinking as tools to support a healthy, functioning instrument. The book is directed towards performance and identifying related interior processes. Although mainly a guide for the learner, it offers complementary “teaching points” at the end of the book for each chapter.

Going further into the realm of spiritual aspects of performance, Edward Foreman’s *Transformational Voice* (1998) draws from Indian philosophies and writers to convey, with admirable personal conviction, how we can heal through vocal expression and technical development. He defines the process of vocal transformation to include psychosomatic understanding. This encompasses intention, awareness, kinetic energy, and communication-based function—all of which reinforced my experiences in Balinese vocal learning.

### **1.3.3 Musical Transmission in Ethnomusicology**

The literature on Western vocal pedagogy helped me understand both the physiological processes and psychological factors involved in performance. There were, however, other components that were not addressed. In search of ways to discuss these missing elements I explored the literature on musical transmission in ethnomusicology, which shed light on some non-Western, oral tradition music cultures.

How do the external components of the instrument (i.e., hands, arms, legs, and head) connect with the construction of sound? Gestures have traditionally been treated as a means for underlining text as opposed to having a physiological function with real connection and correlation to the *production* of sound. While this has not been examined within the context of private voice lessons and individual learning, some have begun to treat this subject as it relates to the transmission of expression from a choral/orchestral conductor to his/her performers.

Matthew Rahaim's *Musicking Bodies* (2012) broaches the topic with his examination of the role of body gestures in Hindustani vocal music. Inspired by my experience in the North Indian singing class, I was directed to this publication and it has been instrumental in the evolution of my thoughts on how certain learning situations incorporate mimicking of both movement and sound. Studies similar to this have been done in linguistics (Davis 2010: 85); however, the context of gesture in this style of singing expresses musical shape and phrasing, and not necessarily a system of symbols that represent those shapes. The importance he places on the physicality of defining sound through the body has influenced my approach and strengthened my conviction that it *should* be an equal counterpart to the other elements involved in vocal expression. Rahaim's research has also connected gesture to breathing which supports my discussion, in Chapter Two, of *ngunda bayu* (literally, the distribution of energy/wind).

Another area requiring study is understanding how the learning environment directly affects the student's learning potential (in terms of vocal learning specifically). For this, I drew from foreign researchers who had written about non-western pedagogical methods. Discourse about Balinese instrumental music pedagogy gave me access to a wide range of

commonly used terminology in learning environments. This literature, despite not being specific to vocal music, has been helpful in identifying the cultural student/teacher relationship and has offered insight into attitudes about general music learning in Bali.

One of the studies closest in intent to my research is Benjamin Brinner's *Knowing Music Making Music* (1995). His focus is the performance practice of Central Javanese gamelan, although he also poses questions about learning processes that cross cultural boundaries. He expands his work to include dialogue from other fields such as cognitive psychology to explore the possible answer to his question: How do musicians make music together? Brinner concentrates on musical process and not product to "show" rather than "tell" about his experience learning gamelan music.

Building on Brinner, Michael Bakan's *Music of Death and New Creation* (1999) is a document of personal discovery and experience learning a style of Balinese instrumental music called belanganjur. He emphasizes the importance of the concept "maguru panggul" (the mallet as teacher) —an expression Balinese use to describe the mimicking and repetition method of learning music. Bakan describes his learning in an honest and revealing style and, as Timothy Rice has affirmed, "understandings are certainly not rooted in verifiable facts; they are not even grounded in anything approaching what might normally be categorized as substantive ethnomusicological data. They have emerged instead from that odd class of 'vivid, deeply moving, often unarticulated inner experiences' of music that so often remain hidden from view in ethnomusicological writings" (Rice 1994: 3).

This is what Bakan offers. At first, he reveals his initial resistance to the traditional Balinese methods of learning music, thinking that his western method of breaking up information and learning it section-by-section would gain him the skills at a faster rate. So he

proceeded to transcribe and learn the patterns phrase-by-phrase (1999: 300-301). Because he was relying on notation instead of musical embodiment and proprioception—and, although he seemed to be gaining technical facility more quickly than Balinese students—as the phrasing became more complicated, his method of chopping up the phrasing had not allowed him to create a foundation that would allow him to truly (as Brinner would say) *know* the music. Most importantly, the message he learned from his teacher was “that true musical experience is the experience of trust” (333). This is imperative in my own experience in musical learning and what I believe to be a crucial factor in vocal learning environments.

Katherine Wakeling’s dissertation has also been an influential source. “Representing Balinese Music: A Study of the Practice and Theorization of Gamelan” (2010) explores colonial era musicological accounts of the ways Balinese music has been represented: “framed not only as theoretically knowable, but also as an aesthetic object” (2010: 262). She looks at implementation and creation of musical theory in order to gain a socio-political and financial establishment, and “how these representations were largely disconnected from the practices they claimed to explain” (263). Her last chapter addresses the idea of knowing, and through the “mode” of Balinese music practice, what she describes as creating, teaching, learning, refining, and performing gamelan (220). Once again elaborating on Brinner, her goal “is to demonstrate that it is not possible to separate the knowing and making of music” (ibid).

#### **1.3.4 Cognition and the Psychology of Learning**

In order to understand this process more holistically, I also have drawn from an eclectic body of literature in a wide range of fields. Often these sources were recommended

to me beyond the context of my research. Upon investigation, however, I found connections that gave me new ideas that I would have never imagined.

Juhani Pallasmaa's *Eyes of the Skin* (2005) is an important contribution to understanding the idea of total perception, as well as how the visual sense dominates how we digest information. Although the focus of his work is architecture, he makes references to movement and sound, and in some cases, specifically to music. He explores what it means to perceive with all of our senses, "which we achieve with our whole body all at once, and which opens on a world of interacting senses" (2005: 40).

"To music," as the musicologist Christopher Small (1998) defines it, is to consistently change and engage with everything around to create new meanings. It is an action, a verb, a process; it's something that people do, and even the most tangible aspects of music would not exist without a performer to bring it alive. After reading Rahaim's book on "musicking bodies," I was intrigued by Small's idea of *musicking*. It seemed to summarize my understanding of Balinese music, even though it made no mention of specific musical genres or style. I later connected it with the Balinese concept of *desa-kala-patra* (time-place-context), and the term musicking allowed me to define and expand my understanding of *desa-kala-patra* into a series of relationships with elements in a learning environment.

I have also turned to literature on mirror neurons to help explain why the mimicking process was so powerful in my Balinese experience. Through scholars such as Vilayanur S. Ramachandran (2000) and Marco Iacoboni (2008), I found strong evidence that mirror neurons exist. Publications such as Gregory Hickok's *The Myth of Mirror Neurons* (2014), however, have been written this year that challenge the concept. Although this debate is ongoing, it has not discouraged my dialogue about this topic. I still feel there is value in

exploring these ideas, for the phenomena they have been used to explain are nonetheless experientially real. Both studies classify mirror neurons as a type of brain cell that appears to activate the motor cortex as if it were actually engaged in the action being observed: “a plausible neurophysiological explanation for complex forms of social cognition” (Hickok 2014: 2). Ultimately, there is still something happening, we are just having trouble defining what it is.

Lastly, I have turned to a body of literature on research methods, particularly reflexive, autoethnographic, quantitative approaches to writing that would fit my thesis within the appropriate scholarly context. Because I am both the researcher *and* the subject of my research, my writing poses certain challenges that other research may not impose.

In the past, for ethnomusicologists such as Merriam and most of his generation, ethnomusicology was about data, while the personal experiences of the ethnomusicologist, including all the relations with others in the field that not merely affected but constituted the meaningfulness of the data, were absent; ethnomusicology was to be, in his memorable phrase, “sciencing about music” (Merriam 1964: 25). My research questions this by modelling approaches outlined in Gregory Barz and Timothy Cooley’s *Shadows in the Field* (1997). This focuses on newer approaches to ethnomusicological fieldwork, which are “generated by [the] emphasis on human relationships rather than on collecting information” (1997: 92). This has supported my argument for musicking as it relates to *musicking* as well as the idea that the trust built in those relationships is the primary foundation for vocal exploration with another person.

*The Handbook of Qualitative Research* (2000) further supports this approach by looking at the realities of humans making written observations. Since my study is vocal

expression, a branch of human communication, it is important to differentiate that it “is not an object, or a discipline studying objects. Communication is a process consisting of sequences of interactions and the dynamic human activity of studying them. Moreover, as communicating humans studying human communicating, we are inside what we are studying” (Denzin & Lincoln 2000: 743). Therefore, it is even more critical for my observations to include the biases and weaknesses in my thought process so that the reader can accurately assess my assessments.

Perhaps as a conclusion, my experience may only be one part of the equation, but it is an important one “primarily in how it illuminates the culture under study” (ibid: 740). This book has been the invitation and encouragement to incorporate more of my own voice in this thesis, not for the sake of being self-indulgent, but in the service of understanding and illuminating the impact Bali has made on my intellectual and personal development.

## Chapter 2: The Pedagogy of Vocal Technique

### 2.1 Chapter Overview

In this chapter, I will introduce my informants and then examine the foundational elements of Balinese vocal technique. To begin I will outline some basic contexts for how the knowledge is approached: informal methods of mimicking and repetition as well as kinesthetic embodiment of expression. I will use this as the basis for discussing the initial processes of learning vocal technique, which includes the practice of opening the voice (*mengeluarkan suara*) through improvised sound and movement, as well as how that technique expands into a layered approach to learning melodies. Continuing from there, I will examine the Balinese concept of *ngunda bayu*, which is a process of distributing energy through the body. Lastly, I will show how gesture, breath, and sound align with a single intention, which will form the foundation of *my* intention in this thesis: to demonstrate how this alignment is the confluence of embodied practice and total perception.

### 2.2 Informants

Although I have studied with several master vocalists on the island, in this thesis I chose to analyze the teaching in general but with a focus on the teachings of Ni Nyoman Candri, who has made a significant and lasting contribution to the vocal music of Bali as a woman, artist, and leader; and to me personally through her impact on my personal development in understanding vocal learning, expression, and performance.

Candri was born in 1949<sup>3</sup> in the village of Singapadu in Bali, and is the daughter of artist/scholar I Made Kredek, a renowned figure in the *arja*<sup>4</sup> community. Kredek was the first to include women in the *arja* troupes of their village and encouraged Candri to start training and performing with his troupe at a young age (Kellar 2004). He also encouraged her to learn male roles such as *Baris*,<sup>5</sup> which is still considered to be a rare role for women to perform in Bali today. This encouragement was a strong influence in Candri's determination to be an artist and leader in her community.

Although I did not know much about Candri when I first began studying with her, the strength of her personality and her open vocal expression inspired me. As I grew to know her over the years of my research, I started to discover what I intuitively sensed: perhaps most prominently, her determination to go after what she believed she was capable of regardless of what everyone else had defined and predetermined about traditional roles and social norms. Candri has had an unusual career that has impacted her community and culture, both within and beyond the borders of Bali.

Fortunately, unlike many women in Bali of her generation, she was able to pursue her career as a dancer and musician because of the support of her husband. She not only remained dedicated to her art throughout her marriage and raising three children, but she continued to develop herself as a performer, becoming known for her bold choice to perform other male-dominated roles/genres/art forms. She was the first and remains the only female

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<sup>3</sup> Confirmed by Candri's brother, Made Bandem in an interview (2015), although it is also documented by Kellar (2004) that she was born in 1947.

<sup>4</sup> *Arja* is a sung dance-drama in Bali that is often described as "operatic". The content is usually based on old Javanese or Indian stories and uses a song format called *tembang* as a template for lyrical content. The performances are demanding, often extending four hours at a time.

<sup>5</sup> A traditional war dance in Bali danced by males.

performer of the all-male genre of *wayang arja* (Sedana 2014). She started the trend for performing *topeng pajegan* instead of male dancers (Bandem, p.c. March 24, 2015). Her role in the community surpasses traditional values/roles as well: she is the representative head of her family at the *banjar*'s council meetings, a responsibility normally taken on only by males (Kellar 2004).

Candri is well known around the island for her residency with the *arja* troupe of Radio Republik Indonesia (RRI); specializing in the role of Condong; for teaching at the STSI, Indonesian College of the Arts (Herbst 1997: 8); and for performing extensively both in Indonesia and abroad (including Italy, Japan, Australia, New York and Brazil). Students continue to come from all over the world to seek her vocal expertise.

The depth of information she was able to provide on both movement and sound was by far the most elaborate and thorough of all my lessons. This was also because she was asked, through her interviews and teaching opportunities, to think about it more. She was given a greater opportunity to analyze, making her the most “formal” of all of my teachers in her pedagogical methods.

Studying at the Candri residence also gave me access to an incredible network of other musicians and researchers. Her brother, I Made Bandem and his wife Suasthi Bandem, are both professors at Holy Cross University where they teach gamelan and dance. Both were able to clarify my observations and perceptions by providing a depth of information through casual conversations, interviews, publications, and translation. Candri's three daughters are all singers and dancers who participate regularly in performances and who are also all married to experts in Balinese musical traditions. Through regular lessons with her son-in-

law, Komang Sudirga, a professor at ISI Denpasar,<sup>6</sup> I was able to see another side of vocal learning by studying theory and attending his classes at the University. Her other son-in-law, Made Hood, a scholar originally from the United States living and teaching in Australia, gave me yet another perspective. Her grandchildren were already performing in troupes, and her pembantu<sup>7</sup> was included and involved as well. Musicians from all over Bali visited this household for rehearsals. Her neighbour Pak Tama is well-known arja drummer. Often her home felt like a living library, being surrounded and immersed by a collection of thoughts, experiences, and expertise. This environment of musicians and scholars impacted my ability to understand Balinese vocal music at a different level.

Other musicians that have influenced my interpretations and made for a more well-rounded experience include Wayan Sudirana, a friend and colleague at UBC (originally from Ubud, Bali). He introduced me to several vocalists and musicians, including his parents, who perform regularly as singers around the island. I studied vocal music in particular with his father, Wayan Jara, during all four of my research periods in Bali. I was also connected with Nyoman Catra who took time for several interviews and helped me clarify and connect ideas between English, Indonesian, and Balinese languages.

I was also fortunate to study dance with esteemed dancers and coaches. Ibu Agung and Ayu Eka during two of my four study periods abroad. This afforded me the perspective on how the movement used in my vocalizing was related to the formal language of dance gestures. Less regular, informal encounters with other singers and dancers (both experts and students) gave me a broader sense of how a variety of generations, social statuses, and levels

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<sup>6</sup> Indonesian Institute of the Arts (*Institut Seni Indonesia*)

<sup>7</sup> The term used for a housekeeper in Bali.

of mastery view the practice of Balinese performing arts.

Although I have chosen to focus on the teachings of Candri, it is important to re-emphasize that *all* of the living sources mentioned above—including, but not limited to, interviews, observations of other students, group rehearsals, informal conversations, personal practice, and books and articles—have contributed to my understanding and perception of Balinese vocal art and expression.

### 2.3 Embodied Practice

When I first arrived in Bali, I had no previous experience with the music, language, or culture. Fortunately I had the assistance of my good friend and colleague, Leslie Tilley,<sup>8</sup> who spoke Indonesian fluently<sup>9</sup> and was able to translate my interest in vocal lessons. After being introduced, Candri invited me for a lesson on the spot, and we were left on our own without words to communicate. I was afraid that we would become stuck, she would become frustrated, and I would not be able to keep up with the practice. However, I discovered that through a process of imitation and repetition, we were able to proceed. As described in the opening paragraph of this thesis, she gave instruction through her face, hands, and body.

The majority of Balinese musicians learn this way through observation and imitation, which Becker confirms most of us do—first by listening, and then by an “unconscious imitation of those who surround us and with whom we continually interact” (Becker 2004: 71). This type of knowledge is often categorized as *informal learning*, done through facilitation as opposed to instruction. In an informal learning environment, a teacher is both

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<sup>8</sup> Leslie’s research focuses on the arja drumming style *kendang*.

<sup>9</sup> Although Leslie maintains (out of humility) that she is not.

an example and active participant who “learns” with the student (presenting information as it relates to the context of the moment). Formal learning environments, on the other hand, lean toward utilizing instruction-based pedagogical methods, which tend to present pre-designed content (often with examples removed from the context and personal experience of the learner).<sup>10</sup>

I could easily relate this type of informal learning to my own childhood experiences. The lullabies my parents sang each night were never things they “taught” me. Rather, as they were presented night after night, they became part of me. When I imagine those songs, I can feel the stroke of my mother’s fingers on my arm and hear the tone of my father’s voice. They have become a multi-sensory, holistic event, activated through a thought. In Balinese pedagogy—whether the learner is a child or an adult—it works the same way. Just like a lullaby, “gradually the full meaning of the concept becomes embedded in the [learner’s] psyche without any awareness of learning taking place” (Thomas 2002).

The Balinese use the term *maguru panggul*, a term literally meaning “teaching with the mallet” (Bakan 1999: 283), to describe this learning process for instrumental players, who learn by someone sitting in front of them “mirroring” the music. Bakan explains that “mimicking the motion of the teacher’s mallet is the first and key element in a process that will see [the student] gradually move toward re-creating the entire kinesthetic-musical event being modeled” (1999: 284). Through mimicking and repetition, the student embodies the whole musical idea through the physical practice first. This is often referred to in western

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<sup>10</sup> “informal (learning through everyday embodied practices; horizontal knowledge; non-educational settings), and formal (aquisitional and individual learning; vertical or propositional knowledge; within educational institutions)” (Hodkinson, Colley, & Malcom 2003: 1)

terminology as “muscle memory,” defined by the Oxford Dictionary as “the capacity of a muscle or set of muscles to function in a certain way in response to a stimulus, acquired through frequent repetition” (Barber: 2004).

The tangible instruction of the mallet—or rather, the physicality of the practice—is central to learning the motor-skill. This differs from western settings where students are instructed to take their music into a practice room and “pound out the notes” on a piano to obtain the vocal line.<sup>11</sup> Instead of intellectualizing first by “translating symbols into sounds,” as gamelan specialist Michael Tenzer has noted, “Balinese musicians bypass this stage entirely and learn music by transforming a received musical gesture directly into the physical act of playing” (Tenzer 1991: 106).

This is particularly relevant in the development of vocal technique. The mechanism used for singing is a myriad of muscular coordination between an (1) energizing system, (2) a vibratory system, (3) a resonatory system, and (4) an articulatory system (Miller 1996: xx). Included in these are the pharynx, the larynx, the throat, the stomach, the ribcage, the chest, the face, the mouth, and the tongue—all of which serve the production of vocal sound through specific muscular configurations. The interior of the larynx alone contains a set of 26 muscles (ibid: 249), which through a combination of actions and relationships becomes a recipe for ways the instrument is actualized. Different laryngeal postures therefore manifest into distinct timbres, almost as if the sound has become embedded in the larynx through repeated action.

The practice of a series of pitches creates even more mental permanence because of

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<sup>11</sup> Personal experience.

the structure: the individual notes linked together become one unit of information. That unit incorporates all the data that created it, including the muscular movement made between events.

One of my western classical vocal instructors, Gail Suderman, has often told me that when a student goes back to sing a song they learned with an old technique, regardless of how much their voice has developed, they will often sing that repertoire as if they've reverted to a previous level of their voice (p.c. 2004-2008). The repeated melody, tied in with the laryngeal positioning and other muscular associations that work to make that melody into one unit, can result in a coordinated sound that can be difficult to "relearn" later. Therefore, it is important to have the initial motor-skill practice as "whole/complete" as possible so that the student is exposed to the full range of expression, reinforcing the right habits from the start.

The voice poses a complication, however, that is particular to this instrument alone. Because the singer is both the instrument and the instrumentalist, "playing" becomes a task of juggling roles: director, receiver, coordinator, and transmitter of information. In order to achieve a more nasal sound, for example, the soft palette of the mouth would be closer to the tongue, the cords would be more closed resulting in a less breathy sound, and the mouth shape would be potentially wider (smile-like).

The singer is responsible for exploring and directing the muscular configuration of his/her body, the placement of desired timbre, the analysis of the sound, and any adjustments needed, placing it with words and meaning and communicating it to an audience. In a situation where the performer is still becoming familiar with his/her voice and these concepts, this division of attention can be extremely difficult to manage by oneself, let alone deliver a performance with a focused intention.

In my Balinese vocal lessons, I experienced the importance of the teacher's presence to demonstrate and reinforce these functions so that my mind was free to focus on other nuances of the musical expression. When I saw Candri raise her hand with the pitch, my body followed as if I had eyes inside my arms. I didn't need to think about it. Her actions allowed me to physically mimic the sound, gesture, expression, and outer movements of the instrument without having to split my attention between the feeling and the instruction; the motor coordination automatically adjusted to match what was shown. Rahaim confirms this, such that "there is ample clinical evidence to show that the 'contagion' of posture, gesture, and subtle facial expression (and their affiliated affective states) can occur without any conscious effort on the part of the recipient" (Rahaim 2012: 118).<sup>12</sup>

This has been discussed in terms of mirror neurons, which have been used to explain action understanding in primates (Rizzolatti & Craighero 2004: 169-192). While the subject is controversial, it remains as an important part of the search for explaining our ability to learn through mimicking, and the mirror effect<sup>13</sup> still remains a real phenomenon. Mirroring allows us to experience both the sensation and the connection as if we were doing that action ourselves, as "the eye invites and stimulates muscular and tactile sensations" (Pallasmaa 2005: 26). This means not only is the information being supported and reinforced through visual stimulation, but the brain is actually led to believe that it is in fact taking part in that action, just by being an observer. Laurence Zbikowsky, a music theorist also intrigued with the subject of this mirror effect, writes:

Humans have the capacity to make analogical connections between

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<sup>12</sup> Rahaim cites Hatfield, Cacioppo, and Rapson 1994; Brennan 2004; Tamietto and de Gelder 2009

<sup>13</sup> I will refer to the concept of mirror neurons as the mirror effect from here on

patterned nonlinguistic sound and patterned movement. Perhaps most crucially, research on mirror neurons provides evidence that both the sight and sound of movements made by others activate a portion of the neurons in the motor system that would be active were we ourselves to make those movements. As a consequence, hearing the music for a dance with whose steps we are familiar can lead to part of the brain doing the dance: The knowledge activated by dance topics is, in a very real way, embodied knowledge. (Zbikowsky 160-161)

Bakan describes the transmission process for instrumental music learning in a similar way: “the music is transported from [the teacher’s] mind through his body, through his hands, and into his mallet, ultimately being brought to life by the [instrument] itself, it enters [the student’s] body and mind through an inverse process” (Bakan 1999: 284). Essentially, this is a process of transferring mastery through action. With direct visual feedback and repeated exposure to the embodiment and expression of a master’s performance, the student gradually becomes more aligned with the total perception of the skill.

Through following the movement, sound, and expression at the same time, the student is making connections that will help the voice emerge, teach the body how to interact with the music, and develop a technique that is integrated with the expression. It is this combination that I see as the roots of total perception, through a process that I have come to identify as an “embodied practice.”

In the next two sections, I will explain how the Balinese method of opening the voice and teaching melodies applies embodied practice to implicitly develop a range of vocal skills that can be applied to all repertoire and genres in Balinese vocal music.

## **2.4 Mengeluarkan Suara: Opening the Voice**

The first thing that a beginner voice student in Bali works toward is to *mengeluarkan*

*suara* (let the voice out, release the voice, set the voice free). In the past, this was done rather forcefully, often until physical over-exhaustion with damaging consequences. In an interview with Herbst, Candri explains that her father instructed her to “sit in the river with water up to her neck and sing in her high register as loud as she could” (Herbst 1997: 24). It wouldn’t take very long for her to lose her voice and then she would return to the river a few days later after she’d gained it back. She elaborated on this practice with me personally, confirming there were times she would sing so hard that she would throw up blood. Her brother, Made Bandem, was also taken down to the river and instructed to sing as loud as possible. This technique was often referred to in older teaching styles as “cooking the voice,” used to develop strength and tonal character (Bandem, p.c. March 25, 2015). Another Balinese vocalist described it as “mak[ing] it happen, not allowing it to happen on its own...the relaxation of the voice comes after the forcing” (Herbst 1997: 27). This practice was especially common for young *dalangs*, who were “often instructed to practice singing full volume at the ocean shore, facing the loud waves, until hoarse” (ibid: 25).<sup>14</sup>

Although it was never suggested that I go down to the river and sing until I lost my voice, the attempt to *mengeluarkan suara* is still the first thing that any student will experience when starting their studies, even if they already have good technical facility. This still includes experiencing some discomfort as producing the loud sounds needed to cut through the bronze gamelan could harm the voice if the student is not careful.

For example, when Cristina Wistari, “an Italian who has been living and performing in Bali for twenty years” (Varley 2000: 73), started studying with Candri, she recalls spitting

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<sup>14</sup> This practice also exists in Korean pansori singing (see <http://intangibleassetno82.com/about> for more info)

and coughing a lot while attempting to open her voice (ibid). Although western vocal pedagogy would advise against this (I have been told many times by teachers, “if it hurts, don’t do it”), in Bali it is still believed that students will eventually become stronger and more able to imitate the sounds as they come to know the limits and restraints of their voice.<sup>15</sup>

My exploration of this with Candri was often an improvised series of tones and movements that she created which, in turn, I followed in real time. After countless hours of reviewing my videos of lessons, I could not seem to find a consistent set of pitches (melody-wise) or gestures that accompanied our vocalizations, and neither Herbst or other scholars identified a specific set of exercises in the pedagogical process besides this action of “following.” Just like Rahaim with the movements in North Indian singing, I found that even though “the hand and voice work together to articulate melody, this gesture does not amount to a systematic code for vocalization” (Rahaim 2012: 2). Wistari had also mentioned in an interview this same observation, that “Balinese don’t have specific voice exercises so all [she] could obtain was the tones” (Varley 2000: 74).

Although there are no specific sets of movements or vocalizations in this stage, I found that all gestures used to express the sound and communicate all seemed to originate from the same places in the body: a vertical axis running from the lower stomach to above the head. The sounds coordinated with the movements to show register, shape, emotion, and character through the arms, hands, torso, head, and eyes. Candri insists that the movement

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<sup>15</sup> I suspect that “cooking the voice” until hoarse or voiceless could also contribute to creating cartilage on the folds that would in turn, create character in the voice. More research (and diagnosis equipment) is needed to explore the details.

always starts from the breath, which leads to its vertical release through the body (p.c. March 25, 2015).

In my very first lesson, Candri showed me these places/positions on her body as she sang to demonstrate their associated registers and timbres—or, as Herbst has termed, as their respective “cosmological counterpart[s]” (Herbst 1997: 25-26). I discovered there was a parallel concept in my own background of understanding registers and a conventional way of imagining their physical place on the body in which “chest, throat, mouth, and nose sounds require specific focus” (Herbst 1997: 26). Deeper sounds start lower in the body; the “chest voice” is felt and imagined in the chest; nasal sounds emerge from the nose and mask of the face; and finally “hooty,” hollow sounds come from the upper part of the head and above, a literal physical representation of the “head voice.”

In the following photographs—a series of stills from a video clip—Candri shows these areas with her hand as she makes the correlated sound. As she moves up the vertical column in her body, the sounds become higher. She uses the pitches of the *pelog*<sup>16</sup> and *slendro*<sup>17</sup> scales to move through the registers. She begins by setting up the breath before each sound and then starts from the bottom of the breath’s channel. She emphasizes the lowest place on the body and the lowest (biggest) sound by patting her stomach, gesturing that the sound “comes from here.”

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<sup>16</sup> “The seven-tone scale system from which various pentatonic scales are derived” (Herbst 1997: 182)

<sup>17</sup> A variation of the pentatonic scale.

**Image 2.1 Lower belly**



**Image 2.2 Lower chest**



**Image 2.3 Higher Chest**



**Image 2.4 Chin**



**Image 2.5 Nose**



**Image 2.6 Between the eyes**



**Image 2.7 Forehead**



**Image 2.8 Extending above head**



As she showed me these places, I copied her sound and focused my attention on the emphasized body part. At first, the pitches of the scale were presented consecutively to introduce the body/sound connection to texture, timbre, and dynamics. This was my introduction to the range of sound that we would use in subsequent practices.

Opening the voice requires students to follow along with vowel sounds, matching movements and sound to express the places in this vertical column in the body. The movement becomes unified with the sound through “singing together [which] allows the student to follow the teacher’s subtle facial, head, and neck gestures, shaping the sound by forming a kind of sympathetic resonance in each tone and inflection” (Herbst 1997: 6). As

they continue to practice, their expression starts to align with the timbre and gestures of the teacher.

This process is important for individual sounds and timbres, but also for the student to eventually start embodying phrasing of connected notes, as later he/she will evolve into what appears to be more randomly structured phrases. These phrases, however, are related to the four-syllable phrasings of *macapat*<sup>18</sup> poetic meter, and the gestures and steps in these “improvisations” often resembled melodic phrasing in songs. Once the student begins song learning, the words will gradually start replacing the vowels, making the process fundamental to lyrical expression as “each word’s resonance and each phrase’s sequence of resonances determine how vibrations will transform from throat to nose, to chest, around the mouth, and so on” (Herbst 1997: 6).

The goal is the quality of sound and its connection to the body, free from structure or pre-designed content. It is the physical process of improvised movement and sound that opens the voice, not the sequence of the melody. The pitches are picked spontaneously so that the voice does not have a chance to cling to old methods or regular patterns. The purpose of *mengeluarkan suara* is to free the voice, and imposed structure would violate that intention. Through this unassociated pitch practice (improvisation), the style “enters” the student, technique becomes less self-conscious, and a more fluid and flexible sense of phrasing is learned, allowing the form to be alive.

This movement, and feeling the voice in these places of the body with their respective tones, is applicable to all vocal training in Balinese singing. Opening the voice allows the

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<sup>18</sup> A Javanese form of poetry using a fixed structure; used as the musical template for delivery of *arja* story plots.

student to feel first, to explore their voice uninhibitedly to find the range of their expression. This harvests a foundation of colour, texture, and flexibility in singing that can be applied to all genres.

Exploring these aspects of the voice is not only a fundamental concept in Balinese pedagogy, but in all sound learning. Otto Jespersen, a linguist who recognized sound synesthesia in the 1920s, “believed that language began from music-like expressions” (Mithen 2006: 170). Infants, for example, explore nonsense syllables and tones and research has shown that babies are capable of making every type of sound from every language, which again, like the Balinese method of *maguru panggul*, “happens by passive childhood acquisition: they just listen and learn” (ibid: 15).

## **2.5 Song Learning: Chunking vs. Layering**

After the voice has come out and enough exploration has been done, the process of song learning begins. Similar to opening the voice, it is a process of unfolding. The teacher and student practice together simultaneously, again focusing on the feeling of how the body and voice interact to embody and align musical expression.

The song is given from teacher to student in its full form, from beginning to end, as opposed to section-by-section. It is presented as a full loop, where the student, regardless of prior familiarity with the melody, jumps in right away to start singing with the teacher. The auditory stimulus reaches the motor cortex almost immediately, which prompts us to react and instantly adjust our pitch.

According to a study done in 2010 on processing times, “auditory stimulus takes only 8-10 milliseconds to reach the brain, but on the other hand, a visual stimulus takes 20-40

milliseconds. This implies that the faster the stimulus reaches the motor cortex, faster will be the reaction time to the stimulus” (Shelton & Kumar 2010: 31). In the context of error correction in a pedagogical mimicking situation, the voice surrenders to the stimuli resulting in what the author Reichling refers to as an “immediate rather than mediated sense of knowing” (1990: 285).

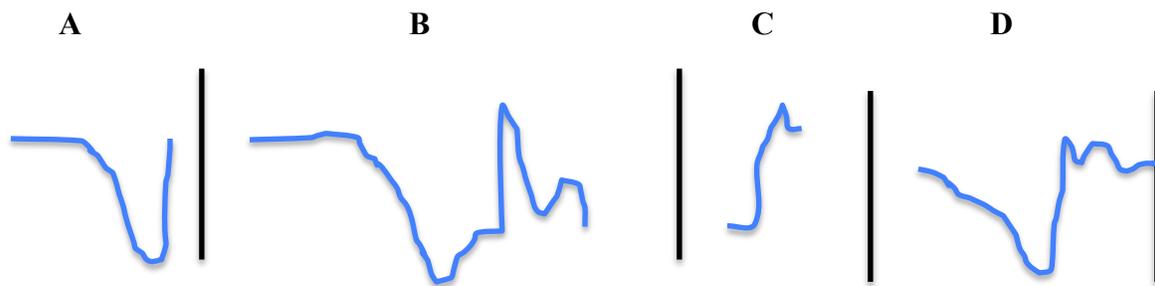
To an outside ear, it may sound like there is very little correction happening at all, even if it is the learner’s first attempt at mimicking the melody. Micro-corrections, however, are possible through both the auditory stimulus provided by the teacher and the intuition of the student. The repetition allows new chances to assimilate previous information processed by the motor cortex, and with repetition, the motor-skill develops into muscle memory.

The advantage of having the teacher present during these repetitions is that when learning a motor-skill, regardless of how well we understand a concept, the body requires time to acclimatize itself with real-time feedback. This allows space for minor mental or physical adjustments. As a result, the embodiment begins right from the beginning of the learning and, just like the process of opening the voice, it is an immediate fusion of body and sound.

Coming from a western background in music, I expected—just as Herbst did—“for her to sing it phrase by phrase, allowing [the student] time to ‘get it’” (Herbst 1997: 10). However, after the whole melody was sung, she started back at the beginning and sang it in its complete form again. “Rather than telling me what to do,” Herbst explains, “she continues through the entire verse, again and again. I realize that her intention is for me to sing along with her, straight through, until the basic melodic flow becomes internalized” (1997: 6).

This contrasted with my previous learning environments, where generally information

was broken up into smaller pieces, a concept often referred to as *chunking*: “any coherent group of items of information that we can remember as if it were a single item” (Aitken 2013: 8). Chunking is particularly relevant in music, where phrases and patterns could easily be divided for learning purposes. I see this as a horizontal division in the music depicted below in the following diagram:



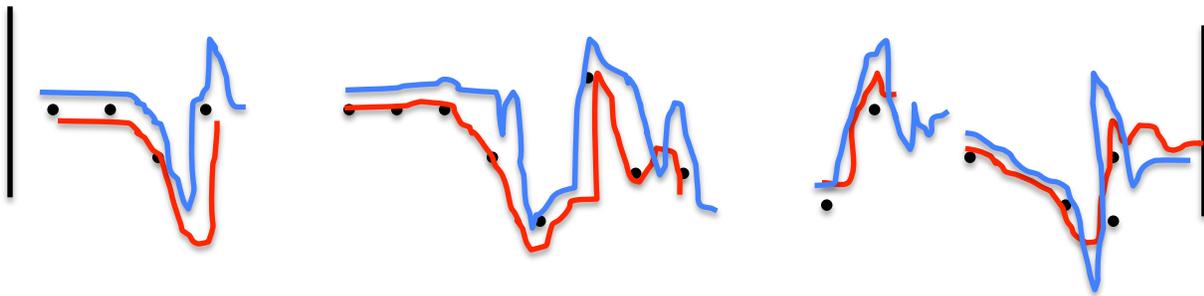
This is an important part of the learning process, and not necessarily a bad thing; in fact, research has shown that even whales appear to “process material in memorable groups of units or “chunks” as humans apparently do” (Guinee & Payne 1987: 299). However, if chunking is our primordial response to learning, we should not necessarily stop there, believing it to be effective on its own.

Balinese melodies, conversely, are traditionally taught by way of *perkembangan* (“the blossoming of a flower”) and can be thought of as a process I identify as *layering* as opposed to chunking, or, as Bakan writes, “as a product of direct kinesthetic imitation rather than through a step-by-step processing of incoming musical information” (Bakan 1999: 285).

Consistently, each teacher I studied with in Bali presented the melody in its full form: the largest chunk possible. A basic melody (perhaps metaphorically the bud?) is given and then elaborated on at various levels of intricacy until the student can feel comfortable enough

to move around the melody and its space by themselves in both simple and elaborate forms (metaphorically the flower in full bloom). The Balinese method of vocal training does not ignore chunking, but instead of being the focus, it becomes the by-product, and something that is formed at less of an intellectual level.

In the following diagram, the basic line is represented as a series of black dots (a basic melodic series), and the two lines overtop show different levels of elaboration on the basic melody. While I will explain more about these variations in the subsequent sections, in simple terms I see the approach to these melodies as more of a vertical layering of a coherent whole; or, perhaps, an expansion of the outline as shown in the diagram below:



Brinner refers to this as *procedural* knowledge, which he claims “is generally more essential to successful performance at a basic level than broader or deeper knowledge of the frameworks” (1999: 100). This creates a lower access point, where “a player can get by with active mastery of interactive and transformational procedures coupled with passive knowledge of basic temporal frameworks and ensemble roles...[allowing] a beginning musician to participate in performance and gradually master the other aspects of competence” (ibid).

In my experience with western classical vocal music, there seemed to be a higher

entrance point for performance, meaning it is less easy for a beginning musician to “get by” without a certain level of skill and technical facility. And while chunking itself is, again, not a bad thing, it also creates more mediation between the practice and performance levels. The music starts in pieces, with the transitions, gestures, and expression to be sewed together as a whole later on in the learning process.

While a beginner may naturally chunk information into smaller bits, the context of that information is more accurately shown through bigger chunks. After all, “the essence of a melody does not lie in its notes; it lies in the relationships between the notes” (Capra 1983: xii). This could potentially explain why research has found that “the difference between novices and experts in a field appears to be that experts tend (because of their great deal of experience) to organize information into much bigger chunks, while novices work with isolated bits of information” (Wolfe 2010: 100). It is in the connections and transitions that we derive our own meanings, and the more context we have, the deeper the understanding can be.

### **2.5.1 Lagu: Polos**

The first stage of song learning is to start with the basic form of the melody and rhythm known in Balinese as *polos*, a term that means “simple” or “basic.” It’s not used for music exclusively; Candri also described my personality as *polos*, meaning I am a sweet girl, a person with good and pure intentions.<sup>19</sup>

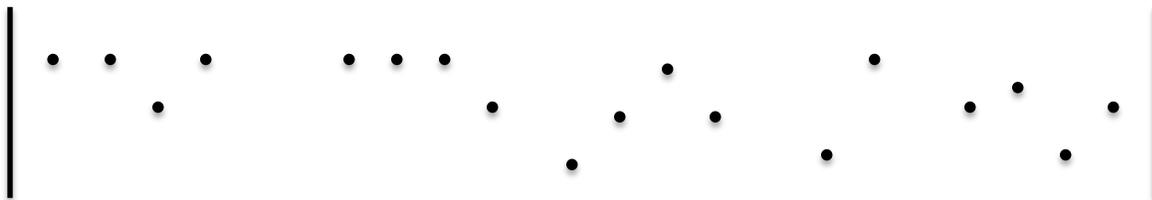
The *polos* version of the melody is the most basic, without any elaborations, similar

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<sup>19</sup> Please mentally insert my most angelic smile here.

to the term *pokok* in Balinese instrumental music, which “is regularly translated in musicological texts on Balinese gamelan as ‘core melody’ or ‘trunk melody,’ the latter used as the basis of a botanical metaphor where this trunk is—later—decorated with flowers (*sekar*) in the form of various types of melodic elaboration” (Wakeling 2010: 227). Simply, the notes that are in the *polos* version are an “unadorned version of the whole piece” (Gray 2006: 104).

I have extracted the *polos* layer from the previous diagram to clearly show this structural element:



The basic melody outlines the song’s structure. Regardless of what elaborations are done, these pitches remain unchanged, providing the scaffolding in which the singer can fill with their own colours. Candri emphasizes this because even when extreme elaborations are done on the basic melody, the core pitches still hold this framework. Occasionally, however, some of the basic notes can be sharpened or flattened by a semitone as an effect, a term called *pemero*.<sup>20</sup>

In a pedagogical situation, the *polos* melody is accompanied by basic gestures

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<sup>20</sup> A concept presented in my lessons with Candri, Sudirga, and Jara, as well as interviews with Catra and Bandem

(*gerak*). These represent the spatial attributes of the melody and help the student visualize and define melodic direction. Each note is drawn in the air by the hands and reinforced by the body through moving along a horizontal path in a zigzag motion, clearly defining each note in its linear progression of the melody. Candri stresses that “one must follow the melody with gestures, even in the very basic form” (p.c. March 11, 2015).

As a transition into the elaboration, the bigger, less-refined gestures are taken away and replaced with subtle head movements and gestures that Candri says are already transforming the sound into a more advanced melody, even if all the notes are the same. With a simple variation in intention of the body’s motion and breath, “it is already being heard differently because of the movement” (Candri, p.c. March 25, 2015). Once the student starts becoming aware of those nuances, they can incorporate a more decorative version of the melody.

### 2.5.2 Lagu: Wilet (yang polos)

When the student has memorized the *polos* melody, the teacher can move on to demonstrating a more elaborate variation. *Wilet yang polos* means a simple elaboration. At this level, the basic notes still serve as the guiding melody, but a few pitches are added to expand the basic structure and flesh it out. As you can see in the diagram below, the concept of chunking still exists, but the difference is in the absence of borders between each “chunk”:



Aside from the context that the space between each chunk provides, it also represents the musical space for the breath. In order to wilet, the breath must have more intention (something that I will address in more detail later). This transpires as a more focused inhale, which is often longer, from which the body follows with more detail to create movement in the voice.

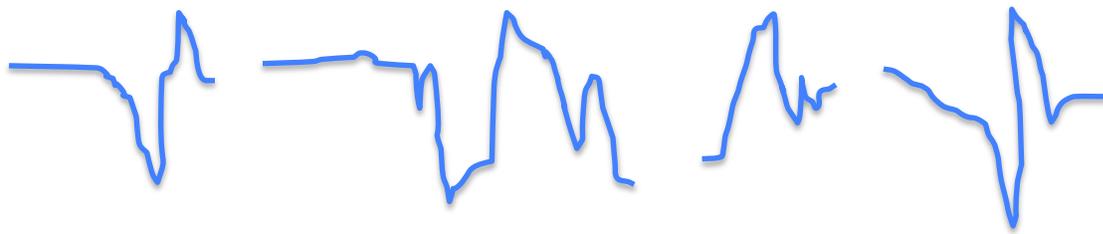
Just as I began to learn with the basic melody, the new level of intricacy does not just lie within the notes themselves: the variation is a holistic entity of sound and gesture including the breath, body, face, and feeling within. The subtle difference in these gestures is that the head and chin start expressing movements that are —while still connected—different from what the body is doing. The body shows the main subdivisions, while the chin and the head start adding new accents that play with, and often against the rhythmic flow of the body. I like to think of this as a new layer of movement that is adding complexity and colour to what is already happening.

I distinctly remember the moment where my western training prevented me from “hearing” these details which, in turn, prevented me from being able to mimic Candri’s phrasing. I was so sure I was getting it right because I was matching all the pitches, melismas, and quality of tone, yet Candri repeated the phrase again and again, as if to signal that I wasn’t there just yet.

It wasn’t until after several repetitions that I started to notice her emphasis on the body becoming stronger each time. When I began to focus on mimicking her body movements with a closer attention, her facial expression changed to one of confirmation that I was finally starting to emulate what she was demonstrating.

### 2.5.3 Lagu: Wilet (panjang)

Once the student has had some general sense of how a *wilet* feels, they can continue to develop their technique through mimicking the more advanced, longer<sup>21</sup> *wilet*. This level of vocal technique requires skilled breath management and an ability to internalize longer, more complex “chunks” of information into musical phrases—still, however, within the context of the piece as a whole—which implicitly trains the student for more vocal control through the development and management of the breath. It is not uncommon for some *wilets* to be 30 seconds or longer (Sudirga, p.c. March 25, 2015).



In the *wilet panjang*, the *polos* melody is still the foundational structure, but as Wallis describes it, “the generalized melodic contour thus is shaped in time by the singer’s textual interpretation: expansions and contractions vary from line to line, but the tonal material remains constant. This is a quality common to many other oral traditions of vocal performance (and jazz), in which the tones of a melody are fixed but do not receive precisely the same durational values from stanza to stanza” (Wallis 1980: 144).

At this stage it’s not important to memorize the notes exactly but to learn the nuances of the gestures and technique and embody the essence of the melody. Just as one would with

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<sup>21</sup> *panjang* literally means long

a North Indian raga, it is about developing a sense of space, knowing how the scale functions, how to play with shapes and phrasing, all by allowing the student to embody the knowledge through a gradual practice of layering. There are no notes on a page, and although a certain teacher has their own style of signature *wilets* to draw from, they encourage the student to both copy and branch out to find their own improvisational style. The ultimate goal for the *wilet panjang* is similar to the success of a long conversation in any second language: the singer's understanding of the style is revealed by their ability to improvise within it.

#### **2.5.4 Lagu: Embodiment**

In order to *wilet*, the body must lead the way. Movement in the voice requires movement in the body, whether standing or sitting by way of shaking, shimmering, lowering, or waving the head from side to side. This includes expressing through the look from the eyes, the resulting eyebrows, the shape of the mouth, and the angles of the face, neck, and chin that embody character and emotion. These gestures are what Rahaim has come to see as “a stream of melody parallel to the voice...complement[ing] vocal action without duplicating it, revealing knowledge about the shape, texture and motion of melody” (Rahaim 2012: 3).

The method of transmission is key for embodying these nuances, as the mimicking and repetition reinforce and instill the bodily knowledge and phrasing. Through mimicking, the fundamental concepts of vocal technique, expression, content, and gesture are taught implicitly. Through these concepts, not only is the body physically representing the sound by moving through the vertical axis, but it is creating a visual aid for both the performer and audience to help them sense what the instrument is doing to create the sound.

## 2.6 *Ngunda Bayu*: Distributing Energy

The vertical axis mapping the registration of the voice is also the column in the body used as the channel for the flow of the breath, which is the energy source for all communicative expression. In Balinese performing arts, the process of distributing this energy, *ngunda bayu* (distribution of energy/wind), was something I discovered after several research trips, not through my lessons, but through a casual conversation with Bandem's wife Ni Suasthi Bandem, a well-known choreographer and professor of music and dance. At that point I had been to Bali four times and had taken daily lessons for several months, yet I had never heard the term mentioned.

Suasthi confirmed that although this concept was embedded in the culture, at that point written sources were not available that specifically related to the Balinese dance traditions.<sup>22</sup> In lieu of this, she wrote a paper on the topic in 1995. In this document, she defines *ngunda bayu* as an energy that “is produced, then distributed to produce motion, then more energy is produced, distributed further to produce motion and in turn more energy is produced... and so on as needed” (Suasthi 1995: 2).

Although this concept has mostly been used academically to talk about dance, in an interview with Bandem he explained that “the distribution of energy is important in *all* Balinese culture: dance, theatre, and voice” (p.c. March 25, 2015). I wanted to understand more about how it applied to vocal processes, but other than Suasthi's document, I was unable to find any existing literature about *ngunda bayu* and Balinese performance traditions.

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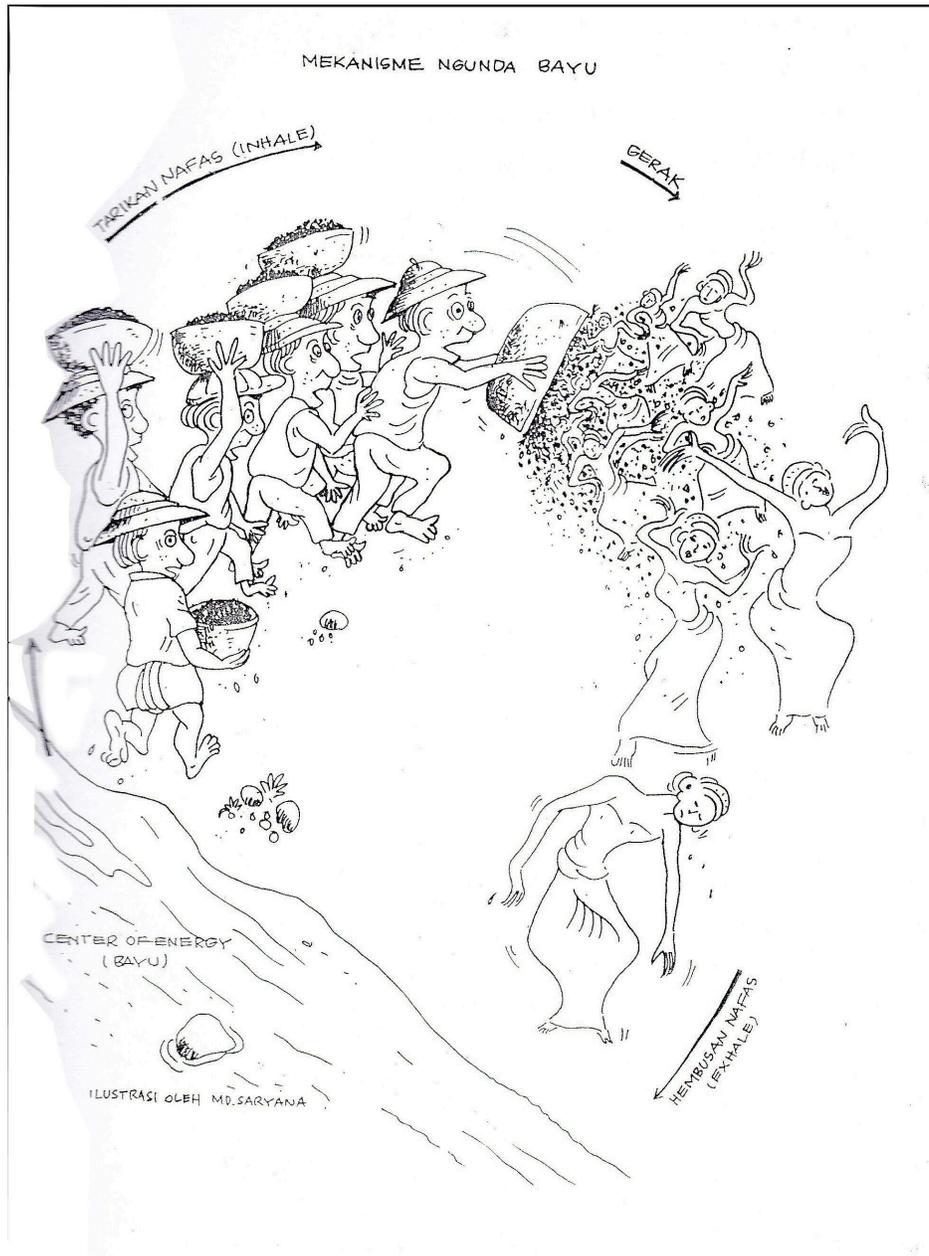
<sup>22</sup> “Sejauh ini penulis belum memperoleh sumber-sumber tertulis yang mengungkapkan konsep keindahan tari Bali secara khusus yang berkaitan dengan aspek dalam dari tari Bali...walupun selalu dikaitkan dengan tarian Bali, namun kata bayu khususnya, banyak berkaitan dengan kehidupan masyarakat Bali” (Suasthi 1995: 2).

I did notice, however, that Herbst and Wallis allude to the concept through their observations of how “the intense energy involved in the dispersion of the breath helps shape the sound” (Herbst 1997: 26-27), and how singing “travels through the vital organs, which serve in turn as the sound’s resonance” (Wallis 1980:109).

I had the chance later to talk about this concept in more detail with Bandem who was able to articulate how *ngunda bayu* relates directly to vocal expression. He explained that the concept could be understood as an energy source that comes from the core of the body (the lower stomach). In fact, just as Candri had demonstrated with the registers by emphasizing the lowest place on the body and the lowest sound by patting her stomach, Bandem brought his hand to his lower stomach and said, “the sound comes from here.”

From this place, it is distributed through the body—moving along that same vertical axis as the registers—to produce movement, sound, and expression. The energy is recycled through the natural motion of the breath, shown in a drawing at the back of Suasthi’s 10-page booklet. In this drawing, the river represents the energy and the workflow of the breath, depicted through manual labour:

Figure 2.1 Metaphorical Distribution of Energy<sup>23</sup>



This diagram shows the movement of energy in *ngunda bayu* in a clockwise cycle. Starting with the river as the centre of energy (*bayu*), the men represent the first distribution of that energy, an inhale (*tarik nafas*), which then transforms into the gesture (*gerak*),

<sup>23</sup> Image used by permission.

which then is used until the end of the exhale (*membusan nafas*) where the energy is recycled back into the river, ready for the next breath/phrase/gesture to be born. The drawing suggests that *ngunda bayu* is synonymous with the mechanics of the breath, which directly applies to the mechanics of singing. To see how it related, I looked at how Candri demonstrated the breath cycle, which I have outlined below through a series of screenshots:

**Image 2.9 Drawing from the center of the energy (the river) – the beginning of the breath**



**Image 2.10 Distributing the energy through the body as the breath moves up through the column**



**Image 2.11 Energy moving through the peak of the column and into the release**



**Image 2.12 Release of the energy with the exhale of the breath**



**Image 2.13 Releasing the energy back into the source (the river)**

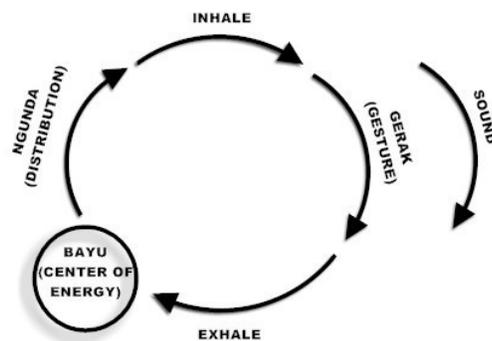


**Image 2.14 Ready for the next inhale to be drawn (new cycle starts here)**



What I noticed is that her movements were similar to her demonstration of how the registers work in the body, moving along the same vertical column stemming from the core. I also realized that although the movement is shown vertically as opposed to clockwise, both *ngunda bayu* and the breath align to create a cycle of energy that fuels movement and sound. In the following model, I have entered sound into the original equation:

**Figure 2.2 Theoretical Distribution of Energy**



Looking at the diagram, the cycle's function is clear; however, the question remained: Is there actually energy being created from this area, or is it just a metaphor? If this energy is literally a breath in motion, then can *ngunda bayu* be understood physiologically? I turned to

the literature in western vocal music pedagogy to see how it related.

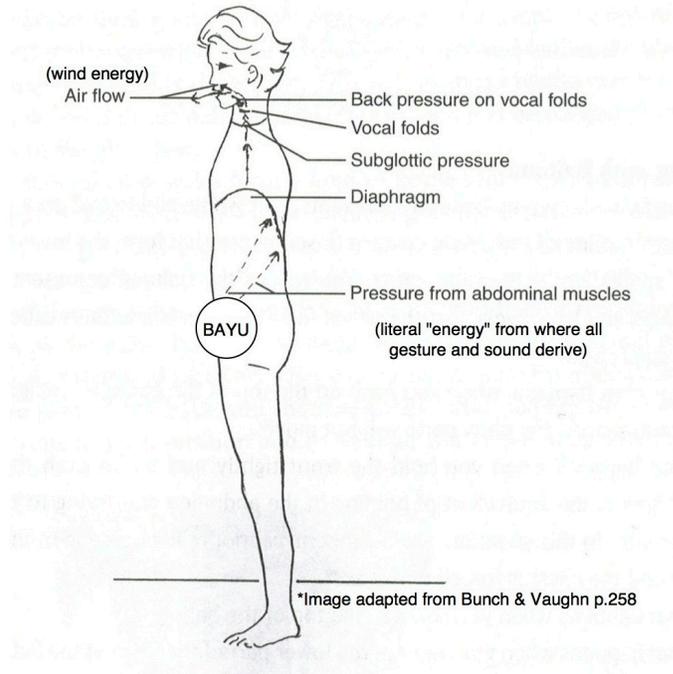
In short, the breath cycle translates as a mechanism that can be seen as an aerodynamic-biomechanic model controlling and managing air pressure (Miller 1996: 264-65). Because the lower thorax operates on a negative pressure system, the necessity to equalize pressure will naturally draw in air (ibid). However, in order for the lungs to expand to their full capacity, the diaphragm must soften, allowing more space for the lungs to expand downward. Through this diaphragmatic expansion, one feels an increased pressure in the epigastrium (ibid), translating as energy/*bayu*.

In order to expel the air and create a stable tone (or, in other terms, distribute/*ngunda* the energy), the diaphragm must then contract in order to release a consistent flow of air to vibrate through the vocal folds. Depending on the intensity of that pressure, the muscular state of the larynx, and several other factors, the vocal folds will vibrate at different speeds, changing the quality of sound through the resonators of the body (chest and head cavities) and then through the sound-shaping articulators: mainly the palette, lips, teeth, and tongue (ibid: 48).

The following diagram shows this physiological cycle through the body:

**Figure 2.3 Physiological Distribution of Energy**

**DISTRIBUTION OF ENERGY**



The sound created from this “distribution of energy” travels “at a speed of 1128 feet per second in warm air, which works out to approximately two tenths of a mile in a second, or 13 miles per minute, or 770 miles per hour” (Mason 2012: 137-139), and is known as *the compression effect* (ibid). We feel the most intense energy at the bottom of the vertical column in the body because the sound starts its motion from the base of the stomach, through the release and engagement of the muscles below the diaphragm.

Moreover, sound tends to radiate spherically (non-directionally) away from its generator (Hansen 2000: 37), the generator being the body itself. A distinctive characteristic of this instrument lies in the flexibility of the organism, and as Doscher articulates clearly, the sound waves created by the human voice “are actually alterations in pressure that propel

themselves through an elastic medium” (1994: 70). Therefore, how we move our body directly impacts the sound by utilizing and shaping the energy/breath that ebbs and flows through the vertical column in the body.

So, to answer the original question, yes, there is a physiological, measurable energy being created from this area, as “each spherical compression wave [literally] contains a certain amount of energy” (Mason 2012: 137-39). The base of the stomach provides the source, a foundation where the muscles activate in order to expel the air. As the body works to prepare the sound, the compression builds, or, as Mason phrases it, “as the surface of the sphere expands, the energy it contains pushes against a larger and larger body of air” (ibid). We feel that pressure as it works in our bodies, creating an energy that can be understood intuitively and metaphorically, through conceptual processes like *ngunda bayu*.

## **2.7 The Unifying Force: Intention**

So far I have shown several activities passing through the vertical column in the body: the sound/character/tone of the registers; the breath; and *ngunda bayu* (distribution of energy), which comprises sound, gesture, and breath/energy. Now I will show how these elements align with a single intention, which I believe to be at the root of how Balinese vocal practice embodies total perception.

At a lesson I asked Candri to further explain *ngunda bayu* to me; however, she just looked at me with angry eyes and said nothing in response. Finally (after a bit of time and growing nervousness), she broke her silence and said, “If I’m angry, I don’t need to tell you

for you to know. You can see/feel it, right?”<sup>24</sup> She patted her heart and continued. “Inside is already full of anger, it doesn’t go away. The eyes become angry... for sure you can feel it inside. This is *ngunda bayu*...” she said as her hand moved further down the vertical column in her body, “...this is the distribution.”<sup>25</sup>

She went on to explain that *bayu* always stems from an intention, which gives birth to the energy carried and distributed by the breath (p.c. March 25, 2015). It is through the initial thought that the breath is born, which in turn activates the body to execute the desired communication through sound and gesture. Rahaim describes a related type of yogic breath cycle in the 13<sup>th</sup>-century *Sangitaratnakara* (“the most influential Indian music-theoretic treatise of all time” [2012: 18]):

Desirous of speech, the atman [the soul] impels the mind, and the mind activates the vahani [vital fire] stationed in the body, which in turn stimulates the prana [vital breath]. The vital force stationed around the root of the navel, rising upward gradually manifests naad [vibration] in the navel, the heart and the throat, the cerebrum, and the cavity of the mouth as it passes through them. (Sarangadev 1991: 3-4)

In other words, what we desire to communicate is the root of our communication, which travels through the body moves through the vibration of the voice. Therefore, the energy must go past the sound itself, meaning that it is always present and uninterrupted in the performer.

In my experience with Balinese vocal music, I learned that it is important to visually represent this intention: the breath cannot *turun* (lower) in the body with the end of its cycle, but instead, it must *naik* (rise) at the end of a phrase to keep the energy moving. Candri

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<sup>24</sup> “kalau marah aja, jangan bilang marahnya. Kelihatan, ya?” (Candri, p.c. March 25, 2015).

<sup>25</sup> “disini sudah penuh marah, tidak keluar, sudah mata marah... tetap bisa merasa dalam. Ini ngunda bayu. Ini, distrubisi” (ibid).

consistently demonstrated this concept by emphasizing her gestures. “Just because the sound finishes in the breath” she says, “does not mean the phrase is finished” (p.c. March 25, 2015).

The body must represent the intention in order not to deprive the sound of its energy.

In the following series of screenshots, Candri shows this continual rise of the intention in the breath with her hand:

**Image 2.15** The intention moves with the energy of *ngunda bayu*



**Image 2.16** The intention rises through the body



**Image 2.17 The intention rises above the body**



**Image 2.18 The intention continues to rise even though the breath is being released**



**Image 2.19 The intention moves up and out (does not drop) before a new intention is born**



Starting from the lowest position, her whole body follows the same invisible line along the vertical axis that she drew so clearly while both marking the registers and showing the breath. This time, however, to complete the cycle, her hand continues to move up and out, emptying the breath with its movement. Even when the sound is finished, her hand continues. This shows the intention continuing to travel past the sound and past the cycle of the breath, integrating one cycle of energy with the next.

Notice how *ngunda bayu*, breath, and intention align as one process within the vertical axis. It is the movement of the breath/intention/energy through the body that fuels the gesture and sound that ensues, or, as Jordan phrases it, “technique and human ideas are magically bundled together at the moment of inhalation through a process of submitting oneself totally to the power of the breath” (Jordan 2011: 84). This shows that the body is built to create phrasing in the voice: all movements connected with the sound follow a physiological process.

The body, therefore, becomes the vehicle for transporting intention, and gestures become representative of that communication. Characterization, mood, and emotion stem from the vertical axis and move outwards with the sound through the hands, eyes, head, shoulders, knees, and torso. Rahaim sees these movements as “merely an elaborate way of mapping pitch onto the vertical axis” (2012: 46).<sup>26</sup>

There is also a strong connection between expression and our body’s natural ability to communicate these emotions—they reinforce each other. For example, strong sounds demand a lengthening and strengthening of the body. If I am angry, my stomach seizes up

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<sup>26</sup> “Pitch” being relative to the melody, not a specific place for C4.

and my core engages, creating the needed pressure to support a loud sound. Weaker sounds, on the other hand, require the body to droop and show a lack of strength. If I am lethargic and sad, my stomach is weak, my sound has no support, and air comes out quickly because of the lack of pressure. If I am afraid, nervous, or anxious, then my body is stiff. Very little power (or air flow) can come through in this configuration, and the resulting sound will be tense and stifled. The power and quality of the air represents and directly effects the physical manifestation of emotion and expression.

If we are true to our intention, the body will follow, which will then lead the voice. Therefore, the intention becomes king: it is necessary for gesture, sound, and breath to align as one. All three must work together to express what is inside of the breath, for “when you breathe, the energy for what is to follow is initiated by the breath, and the breath alone” (Jordan 2011: 82). This concept is what was being transmitted to me so clearly through my mirroring practices with Candri, and it is taught implicitly through the technique of the Balinese art of singing. The *wilet*, the tones, and the gestures are not correct until the intention is guiding them.

If this focus is interrupted or blocked by distracting thoughts, it becomes fragmented. This takes away from the force of the streaming energy, resulting in an incomplete distribution, as well as a disconnected expression between the three elements. If the goal is to communicate a lethargic sadness yet the arms are fidgeting and the eyes are moving quickly from side to side, then most likely the performer is not connected to their original intention, consequentially delivering a mixed message to the audience.

To demonstrate this, Candri gave the example of someone showing up at a rehearsal after having a fight with a partner. She said, “If there’s a problem going on at home, the

energy cannot move, the expression is blocked. The character cannot enter [because the] feeling is still occupied somewhere else. You have to compile the energy and focus [it] into the moment, into the body, into the source of energy for expression” (Candri, p.c. March 25, 2015). Distracting thoughts require energy, and unless those thoughts are addressed, the energy will stay in that state, unable to move.

The key in managing this is to understand that energy is never destroyed. Instead, it is transformed and, with that transformation, there is the constant potential for it to be translated into the release of sound. *Ngunda bayu*, then, acts as a medium of conversion, translating the intention into physical expression. It is moved into the eyes and manifested into representative gestures, expanding throughout the entire body to communicate. What I learned is that if we do not acknowledge the status of our actual thoughts and feelings as human beings, we block the energy from shifting, ultimately inhibiting our capacity for communication as performers.

## **2.8 Energy, Gesture, and Sound**

In this chapter, I have introduced several elements of Balinese vocal technique that can be expressed in terms of three units: energy, gesture, and sound. Although all three are initiated by an intention, there is still the question of how they fit together once the intention is set in place. Does the body lead the voice, or does the voice lead the body?

I found a series of possible answers, which led to the conclusion that the three elements interact with one another, creating interplay of cause and effect, and trading roles of initiation and result. These equations show the interaction:

**A) Energy = Gesture + Sound**

**B) Energy + Gesture = Sound**

**C) Gesture = Energy + Sound**

After looking at the cycle of *ngunda bayu*, it seemed logical to first conclude that the energy created the gesture and sound: **Energy = Gesture + Sound**. This is what we can most easily and superficially observe. However, this does not take the body's function into consideration. Energy is needed to activate the body, but the vocal mechanism requires action in order to produce the sound. Therefore I use a second equation to represent what causes the sound physiologically: **Energy + Gesture = Sound**.

While these describe the vocal process, I found a gap when contemplating my Balinese vocal learning experiences. What about the mimicking aspect of the pedagogy? The mirroring of Candri's physicality seemed to ignite my own energy. Instead of my body triggering the sound it was activated by receiving the stimulus from Candri, creating an equation initiated by gesture: **Gesture = Energy + Sound**.

What I came to realize was that in a pedagogical situation, the teacher lends their embodiment, their intentions. The student doesn't need to understand logically/intellectually, they can just feel it, like I could feel Candri's anger. In order to embody those emotions, they need to use their primal ability to mimic them, and then the body will follow until the expression is internalized. Through this process, the learner will gradually begin to embody the master's ability to trust the intention to lead, a conversation that is somatically transmitted and guided by gesture.

Ultimately this is a process of transformation. "Since the voice is the result of what

and who I am, when I change the what and who, the voice will change. Conversely, when I change the voice, I change the what and who of ME” (Foreman 1998: 6). With Candri, I began to understand at a bodily level how to access and execute my expression, and through the process of aligning with her, it started to become mine.

## Chapter 3: Synthesis and Conclusion

### 3.1 Reflection

This thesis would not be complete without reflecting on my previous experience training as a western classical vocalist. Or as Virginia Woolf once wrote in *A Room of One's Own*, “one cannot hope to tell the truth. One can only show how one came to hold whatever opinion one does hold. One can only give one’s audience the chance of drawing their own conclusions as they observe the limitations, the prejudices, the idiosyncrasies of the speaker” (Woolf 1957: 1). My perception is the counterpoint to my observations, and the path that has shaped my thoughts will help illuminate the impact Balinese pedagogy had upon me, as it was not until my experience in Bali that I even questioned my previous vocal training and whether it could have been more comfortable from the start.

Over the years, I have heard endless jokes about how singers walk on-stage and carefully place their hands together in a clasp in front of their chest and remain in that position for the entire performance. Although this seems like an exaggeration, it remains the truth for many singers in a classical voice recital situation.

As a student of this vocal style, the most challenging aspect of performance I found was the presentation of my body. There was no instrument to hide behind, and on stage that vulnerability was faced with many preconceived ideas and expectations for an appropriate classical performance. This is due to established traditional viewpoints, and “for female musicians in particular, a convention of music performance developed in which the body was effaced; too much physical movement or ‘show’ on the stage was seen not only as extraneous

to the music but as unseemly... The ideal became kind of a performance of non-performance: nothing visible was supposed to happen on the music stage” (Weidman 2006: 131).

I have heard often from colleagues, other students, and performers that they, too, had an uncomfortable sensation while performing. There was unanimity in the feeling that the energy of the voice was somehow stuck, or that they were restricted by their own bodies. “We singers tend to do one of two things: either we don't gesture at all, denying our performance the power of physical expression, or we commit the proverbial half-gesture—we feel we ought to be doing something with our hands, but we feel awkward doing so. The end result is tense elbows at our sides, forearms hung out pathetically like a dinosaur's, and the muscles locked in a frozen rictus” (Bean 2008: 37).

Only recently has this issue started to emerge in academic discussion. Rahaim suggests that “music scholars insist most emphatically that the body and the voice are, in fact, separate. The body serves as a discursive pivot that modulates from matters of aesthetics to matters of ethics... The consensus is that gesture is bad: uncouth, antispiritual, or at best incidental to real music” (Rahaim 16-17).

Through my lessons in Bali, it has become clearer as to why I had witnessed so many uncomfortable vocalists onstage making these awkward movements with their hands, trying to point disjointedly to something in the words with their actions or, perhaps, as suggested above, trying to keep their hands in one place. I believe this is because we are not teaching how to utilize the body in a way that expresses the sound on stage. In the western classical voice studio, there seems to be a deficit of training and direction for the instrument itself. The general goal is to work primarily with the sound as an isolated product, to meet the required standards of a formalized approach.

I am not suggesting that western classical vocal performance completely ignores the on-stage aspects of the body. However, the movements created on stage represent the text; traditionally, they are not an aid in expressing and creating sound. Visual expressions are often seen as distraction if they are unrelated to the text, and “unintentional.” The challenge of this is that “instinctively, many singers sense the necessity of sustaining the gestural energy in response to the music. At the same time, they do not have the freedom to commit themselves to a full gestural statement. So they end up with a sustained half-gesture which defeats both purposes and neither makes a statement nor structures it.... Many singers, having been told that the only good gesture is no gesture, allow the hands to hang freely at the sides” (Balk 1977: 128).

The vocal learning studio, however, is different than the stage, and like Balinese methods, often utilizes the body to open the voice. In order to produce the sound, representative gestures are added as tools for accessing technique. For example, to create more movement in the voice, the teacher may suggest spinning the index finger in the air, winding an imaginary fishing rod, or walking around the room quickly while singing through a phrase. To freely release a high note the body may fold over, or to loosen a tight sound it might be suggested to imagine the head floating in a bowl of water. These types of gestures and visualizations create a tangible representation of the sound, which serve as models and maps for the mind to direct and recreate the concept in the voice. While these movements differ from teacher to teacher, they have the same function as gesture had in my Balinese lessons: to help access and embody the sound.

A limitation with this method, in my experience, was that the movements were not transferable to the stage. The physical expression of the sound was for studio use only. By

performance time, the singer would need to find a way to access those techniques without visible bodily aids, somehow constructing a presentation where the sound stood alone.

Looking back, there is an obvious gap between the practice received in the studio and the stage. However, if we are “doing” in both environments, what is the difference?

Part of the answer I believe lies in the present system of one-hour-per-week lessons. In this short time, there is very little opportunity for experiential evolvment. Running through the piece in its entirety over and over again would be considered a luxury, let alone conversations and coffee breaks. In this environment, productivity and efficiency takes precedence and the time spent “doing” may not be enough to cultivate and embody the skills necessary for the phrasing and flow of the music. While I am not suggesting that individual work isn’t imperative to artistic development, I am wondering if we increased the time spent in the studio, with shorter intervals in between lessons, whether we could create less of a gap between the skill and the artistry.

Another factor could be lack of face-to-face transmission. A shortcoming in traditional western models of vocal learning is that students are sent off to the practice room to mirror themselves. They are mirroring isolated techniques and not artistry, however; they have not copied enough yet. Again, to embody the phrasing and flow of the music as an artist, the master must lend his/her full expression repeatedly. The role and presence of the teacher within the developmental stages is crucial.

Without *seeing* an accurate and functioning instrument, how are we supposed to mimic or understand how to use our bodies in conjunction with the creation of sound? There is no expression to borrow, nothing to mirror. Consequently, practices can feel directionless when the student leaves their “instructional” lessons, especially since that instruction tends to

leave out the physical aspect of sound movement on the stage. As a student, I had no clue about how I should be using my body to communicate the sound that was trying to come out of me. I was trying to take external concepts and internalize them through notes on a page; to transform the foreign language lyrics into meaningful communication; and to create music from a genuine place all through the very disconnected space of a practice room, alone.

Now, fortunately, with the convenience of cellphones and recording devices, students will often record their lessons, or videotape the gestures so that they can learn on their own. However, this poses a potential problem when it comes to contextual frameworks of the art, as the video/recording is only transmitting a static performance. Face-to-face transmission offers dynamic feedback potential for the confluence of expression—both the physicality and sound—as the teacher can show varying nuances that apply directly to that student.

In an age where the application of technology as a medium of transmission is becoming the standard, we must work harder to become more aware of its possible consequences. Ultimately, the difficulty lies in the lessening of direct human contact. The sound becomes isolated and objectified, the transitions and connections become lost, and although there is a value in the technical skill, “technique is of no value except as it makes communication possible” (Miller 1996: 204). The meaning that derives from the interaction between one element and another is what making and performing music is.

### **3.2 Musicking**

Christopher Small’s term *musicking* may also help clarify this. He makes a distinction between the noun and the verb, as musicking is not defined by the music itself, but by “tak[ing] part, in any capacity, in a musical performance. That means, not only to perform,

but also to listen, to provide material for a performance: what we call composing, to prepare for a performance: what we call practicing or rehearsing, or any other activity which can affect the nature of the human encounter” (Small 1995: 4). He even goes as far to say that the men moving the piano and the lady selling tickets are *musicking*, as their activities all affect the event itself. To music is to consistently change and engage with everything around it to create new meanings.

Even in the case where the performer is the only listener, it is still an encounter between a human being and him/herself with time, place, and objects, all of which generate their own dynamics and meaning. It creates—and is created by—a series of relationships: between the performer and the music itself, the performance space, the performer and the audience, the performers amongst themselves, their individual moods that day, how the rehearsal went, the time of day, the weather, the place. There are endless combinations and factors that play a part in how a piece of music is created in the moment, going well beyond the directions are on the score. It is the context that shapes the performance—no piece is ever the same on the second exposure, even when listening to a recording.

So if *musicking* is about blurring the lines between learning, performing, practicing, listening, and critiquing, then my question is: Why does there need to be such a gap between the studio and the stage? Perhaps this concept is part of the solution, of how we can integrate the effective aspects of Balinese pedagogical methods and enhance our own formal learning environments. Even just a shift in thought could help close the divide in the performer’s experience between creating music on stage, and creating music in the studio.

### 3.3 Integration

Balinese pedagogy *is* musicking. It is the embodiment of the theory itself. Candri and I practiced together in the way we would perform, we allowed the environment to lead our process, and the relationship we developed was key. Whether or not these individual factors were the reason for my personal feeling of success, I found that in my all my experiences learning in Bali that “musical holism and flow are of highest priority, and are stressed at a variety of levels throughout the entire music transmission process” (Bakan 1999: 289).

If we can integrate more holism in our own system we will strengthen the founding goals of the academic institution. After all, students cramming for tests, memorizing isolated facts, creating unrelated acronyms, and piecing together technical details to show their knowledge of a subject does not achieve real learning. It is the context of those facts and their relationships to the environment around them that creates true understanding. As important as the theoretical is, it is not always where the real proficiency is born, especially in learning a motor skill. As I commonly ask my own students in the classroom, “How many of you learned how to ride your bike from a book?” No one ever raises their hand.

It’s getting the feel of the bike that is most important. That is the essence of the skill. Then, to deepen that essence, they may want to explore the intellectualization, which will in turn spark more awareness. The key is that they are always learning from the experience itself, even if that is being reinforced by later reading. The body becomes the book and if the physical experience is limited, it hinders the learning. If we can make the instrument itself more of a priority by acknowledging and embodying the intuitive knowledge that we feel, and connect it with the facts we learn, then I believe we can take these two pedagogies as complementary to one another, providing an opportunity for growth in both directions.

Whether or not it is ideal, or even possible to prioritize more embodiment within a formalized system, my question is simply this: Why don't we start thinking about the synchronization of sound and movement in vocal pedagogy? How can we incorporate the concept of musicking in order to bridge the gap between the studio and the stage? Regardless of whether or not the learning process is based on an evaluated product, I suggest that the activities of musicking should lead to a more holistic way of experiencing the music—since the product of music is, after all, a holistic experience.

What it boils down to is the basis of this thesis: total perception through embodied practice. The integration of the physical, emotional, mental, and spiritual components is the gestalt of what the voice is: a harmonious synergy of intention. Therefore, in pedagogical situations for vocal development, it is imperative to focus on developing the self. The Balinese achieve this intrinsically in their methods by focusing on the alignment of relationships with a goal of delivering a performance authentic to the performer.

The learning experience I had in Bali gave me a new confidence in expression. It has continued teaching me, offering new insights into my present experiences. Although my first few lessons were nerve-racking, the immediate power I felt from the confidence of Candri changed me as a singer and performer. It was the first time that I can say I was truly musicking in the way that felt natural and comfortable to me.

It was also because the process was at the forefront of the learning. Not only was I taking from my own lessons, but I was invited to participate in all musical activities. At Candri's home, similar to many other teachers' homes in Bali, the studio is an open bamboo-covered platform situated in the driveway, where the lesson will surely be interrupted by the lady selling fruit, the neighbourhood kids coming to gawk, and the other family members

going about their daily tasks and duties. The process embraces all the rhythms of the moment.

The western approach to vocal learning is typically not a group-oriented activity and does not invite others to either observe or participate in “private lessons.” Hence the name, usually, vocal learning is done in the privacy of a teacher’s office, where soundproofing and walls cushion embarrassment and create a sense of security for protecting the student’s learning process. It hasn’t become a major trend to post your classical voice lessons on YouTube and gain a bunch of subscribers.

This restricts our ability to learn in an expanded context. With more awareness of others’ individual processes, we can refine our own methods and approaches. Unless we share our personal stories, we are limited to this feeling staying inside the isolated conversation circles of classical vocalists, and our ability to critically assess what is happening on a wider scale is significantly lowered.

My goal for this thesis has been to create more awareness around the complex bodily experience of expression through the voice, and to make singing more accessible for those who feel they cannot, or those who are too afraid to open up and try.

A bird does not learn the theory of flying before it flies. It sees flying, it has wings, and its intuitive wisdom allows it to replicate the action by trial and error. In order to excel, we often attempt to avoid error, perhaps in response to an embedded message that it is bad. But if we could change our perspective to see that the greatest power we have comes from our mistakes, we can begin to trust ourselves with the process. The possibility of failing is the gateway to success, and we must be fearless in our acceptance of that.

Candri offered me that sense of safety. She reminded me of the greatest technology we have as humans: our bodies, our intuition, and our ability to communicate through sound and gesture. The art she connected me with taught me how “the eye of the spirit must see in unison with the eyes of the body, for otherwise there is the danger that one will see something and yet look past it” (Berendt 1983: 7). My experience with Balinese vocal music allowed me to see the sound and hear the gesture, ultimately mirroring back a more complete sense of my own artistry in relationship with myself: an embodiment of total perception.

## Bibliography

Aikin, Bob. 2013. *Impact on the Cognitive Sciences on Teaching*.

<http://cedp.mohawkcollege.ca/2013/BobAitkenResource.pdf>. Accessed May 24, 2014.

Aikin, W. A. 1951. *The Voice: An Introduction to Practical Phonology*. London:

Longmans, Green and Co Ltd.

Anonymous. 2014. *Balinese Dance*. <http://www.balinesedance.org/>. Accessed August 15,

2014.

Appelman, Ralph D. 1967. *The Science of Vocal Pedagogy: Theory and Application*.

London: Indiana University Press.

Arps, Bernard. 2005. *Performance in Java and Bali*. Hoboken: Routledge.

\_\_\_\_\_. 1992. "Tembang in Two Traditions: Performance and Interpretation of Javanese Literature." Ph.D. dissertation, School of Oriental and African Studies, University of London.

Bakan, Michael B. 1999. *Music of Death and New Creation: Experiences in the World of Balinese Gamelan Beleganjur*. Chicago: University of Chicago Press.

Bandem, I Made. *Mengenal Dramatari Arja Di Bali*. Denpasar, Bali, Indonesia: Proyek Penggalan/Pembinaan.

Barber, Katherine. 2004. "Muscle Memory." *The Canadian Oxford Dictionary*, Oxford University Press.

[http://www.oxfordreference.com.ezproxy.library.ubc.ca/view/10.1093/acref/9780195418163.001.0001/m-en\\_ca-msdict-00001-0045746](http://www.oxfordreference.com.ezproxy.library.ubc.ca/view/10.1093/acref/9780195418163.001.0001/m-en_ca-msdict-00001-0045746). Accessed March 11, 2015.

- Barz, Gregory F. and Timothy J. Cooley. 2008. *Shadows in the Field: New Perspectives for Fieldwork in Ethnomusicology*. Oxford: Oxford University Press.
- Bean, Matt. 2008. "Gesture in Art Song and Opera." *Journal of Singing* 54 (5): 37-39.
- Becker, Judith. 2004. *Deep Listeners: Music, Emotion, and Trancing*. Bloomington: Indiana University Press.
- Berendt, Joachim-Ernst. 1983. *The World is Sound: Nada Brahma*. Vermont: Destiny Books.
- Blacking, John. 1973. *How Musical is Man?* Seattle: University of Washington Press.
- Brinner, Benjamin Elon. 1995. *Knowing Music, Making Music: Javanese Gamelan and the Theory of Musical Competence and Interaction*. Chicago: University of Chicago Press.
- Brown, Katherine Butler. 2003. "Hindustani Music in the Time of Aurangzeb." Ph.D. dissertation, School of Oriental and African Studies, University of London.
- Brown, Oren L. 1996. *Discover Your Voice: How to Develop Healthy Voice Habits*. San Diego: Singular Publishing Group.
- Browne, Lennox, and Emil Behnke. 1886. *Voice, Song, and Speech: A Practical Guide for Singers and Speakers*. New York: G. P. Putnam's Sons.
- Bunch, Meribeth and Cynthia Vaughn. 2004. *The Singing Book*. New York: W. W. Norton & Company.
- Callaghan, Jean. 2000. *Singing and Voice Science*. San Diego: Singular Publishing Group.
- Capra, Frijof. Preface to *The World is Sound: Nada Brahma*, by Joachim-Ernst Berendt, xi-xxxvii, Vermont: Destiny Books 1983.
- Collier, Bethany J. 2014. "Looking to the Future: Training a New Generation for

- Balinese Arja.” *Asian Theatre Journal* 31 (2): 457.
- Davis, Jeffrey E. 2010. *Hand Talk*. Cambridge: Cambridge University Press.
- Denzin, Norman K., and Lincoln, Yvonna S. 2000. *The Handbook of Qualitative Research*. Thousand Oaks, California: Sage Publications.
- Dibia, I. Wayan. 1992. “Arja: A Sung Dance-Drama of Bali; A Study of Change and Transformation.” Ph.D. dissertation, Wesleyan University .
- \_\_\_\_\_. 2012. “Revitalizing Arja in Globalized Bali.” *Asian Theatre Journal* 29 (2): 466-94.
- Doscher, Barbara M. 1988. *The Functional Unity of the Singing Voice*. London: The Scarecrow Press, Inc.
- Emmons, Shirlee and Alma Thomas. 1998. *Power Performance for Singers: Transcending the Barriers*. New York: Oxford University Press.
- Fitch, W. Tecumseh. 2006. “The Biology and Evolution of Music: A Comparative Perspective.” *Cognition* 100 (1): 173-215.
- Foreman, Edward V. 1998. *Transformative Voice*. Minneapolis, MN: Pro Musica Press.
- Gilliand, Dale V. 1970. *Guidance in Voice Education*. Columbus, Ohio: Typographic Printing Company.
- Guinee, Linda N. and Katharine B. Payne. 1988. “Rhyme-like Repetitions in Songs of Humpback Whales.” *Ethology* 79 (4): 295-306.
- Gray, Nick. 2006. “No Tree is Untouched by the Wind: Aspects of Composition and Improvisation in Balinese Gender Wayang”. Ph.D. dissertation, University of London.
- Hansen, C.H. 2001. “Fundamentals of Acoustics.” In *Occupational Exposure to Noise:*

- Evaluation, Prevention and Control*. World Health Organisation Special Report, S64. Berlin: Federal Institute of Occupational Safety and Health.
- Herbert-Caesari, E. 1969. *Vocal Truth*. London: Robert Hale & Company.
- Hammar, Russell A. 1978. *Singing: An Extension of Speech*. London: The Scarecrow Press, Inc.
- Hixon, Thomas J. 2006. *Respiratory Function in Singing: A Primer For Singers And Singing Teachers*. Tucson, Arizona: Redington Brown LLC.
- Herbst, Edward. 1997. *Voices in Bali: Energies and Perceptions in Vocal Music and Dance Theatre*. Hanover, NH: Wesleyan University Press.
- Hodkinson Phil, Colley Helen, and Malcom Janice. 2003. "Informal Learning." *Journal of Workplace Learning* 15 (7/8) 313-18.
- Iacoboni, Marco. 2008. *Mirroring People: The New Science of How We Connect With Others*. New York: Farrar, Straus, and Giroux.
- Jones, Earl William. 1989. *Sound, Self, and Song: Essays on the Teaching of Singing*. London: The Scarecrow Press, Inc.
- James, Jordan, Mark Moliterno, and Nova Thomas. 2011. *The Musician's Breath: The Role of Breathing in Human Expression*. Chicago: GIA Publications, Inc.
- Kellar, Natalie. 2008. "Beyond New Order Gender Politics: Case Studies of Female Performers of the Classical Balinese Dance-drama *Arja*." *Intersections: Gender, History, and Culture in the Asian Context*.  
[http://intersections.anu.edu.au/issue10\\_contents.html](http://intersections.anu.edu.au/issue10_contents.html). Accessed March 15, 2015.
- Lansing, J. Stephen. 2005. *Balinese Religion*. Encyclopedia of Religion, ed. Lindsay Jones, volume 2, 745-49. Detroit: Macmillan Reference USA.

- Laskewicz, Zachar Alexander. 2004. *Music as Episteme, Text, Sign & Tool*. Brussels & San Francisco: Saru Press.
- Levitin, Daniel J. 2007. *This is Your Brain on Music: The Science of a Human Obsession*. New York: Plume Printing.
- Merleau-Ponty, Maurice and Claude Lefort. 1968. *The Visible and the Invisible*. Evanston, IL: Northwestern University Press.
- Balk, H. Wesley. 1977. *The Complete Singer-Actor*. Minneapolis: University of Minnesota Press.
- Merriam, Alan P. 1964. *The Anthropology of Music*. Evanston, IL: Northwestern University Press.
- Mason, Phil. 2015. *Quantum Glory: The Science of Heaven Invading Earth*. Maricopa, Arizona: XP Publishing.
- Miller, Richard. 2004. *Solutions for Singers: Tools for Performers and Teachers*. New York: Oxford University Press.
- Mithen, Steven. 2006. *The Singing Neanderthals: The Origins of Music, Language, Mind, and Body*. Cambridge, Massachusetts: Harvard University Press.
- Nair, Garyth. 2007. *The Craft of Singing*. San Diego: Plural Publishing Inc.
- Neilsen, Gerda. 1975. *A New Guide to Good Singing: Practical Hints for Singers and Teachers*. Toronto: The Avondale Press.
- Newell, William H. 2008. "The Intertwined History of Interdisciplinary Undergraduate Education and The Association of Integrative Studies: An Insider's View." *Issues in Integrative Studies* 26: 1-59.
- Pallasmaa, Juhani. 2005. *The Eyes of the Skin*. West Sussex: Academy Press.

- Putra, I. Nyoman Darma. 2009. "Kidung Interaktif: Vocalising and Interpreting Traditional Literature through Electronic Mass Media in Bali." *Indonesia and the Malay World* 37 (109): 249-76.
- Ramachandran, Vilanayur S. 2000. *Mirror Neurons and Imitation Learning as the Driving Force behind "The Great Leap Forward" in Human Evolution*.  
 www.edge.org.  
[http://www.edge.org/3rd\\_culture/ramachandran/ramachandran\\_index.html%3E](http://www.edge.org/3rd_culture/ramachandran/ramachandran_index.html%3E).  
 Accessed January 23, 2015.
- Reichling, Mary J. 1990. "Images of Imagination." *Journal of Research in Music Education* 12 (38): 282–93.
- Reid, Cornelius L. 1972. *Bel Canto Principles and Practices*. New York: The Joseph Patelson Music House.
- Rice, Timothy. 1994. *May it Fill Your Soul: Experiencing Bulgarian Music*. Chicago: University of Chicago Press.
- Rizzolatti, G. and L. Craighero. 2004. "The Mirror-Neuron System." *Annual Review of Neuroscience* 27: 169-92.
- Salaman, Esther. 1989. *Unlocking Your Voice: Freedom to Sing*. London: Victor Gollancz Ltd.
- Sarangadev. 1991. *Sangitaratnakara* [13<sup>th</sup> c.]. Translated by R. K. Shringy and P.L. Sharma. New Delhi: Munshiram Manoharlal.
- Schumacher, Rüdiger. 1995. "Musical Concepts in Oral Performance of Kakawin in Bali." *Bijdragen tot de Taal-, Land-en Volkenkunde* 151 (4): 488.
- Sedana, I. Nyoman. 2005. "Collaborative Music in the Performance of the Balinese

- Shadow Theater.” *Asian Music* 36 1: 44-59.
- Shelton, Jose and Gideon Praveen Kumar. 2010. “Comparison between Auditory and Visual Simple Reaction Times.” *Neuroscience & Medicine* 1: 30-32.
- Small, Christopher. 1995. “Musicking: A Ritual In Social Space.” Lecture presented at The University of Melbourne. <http://www.musekids.org/musicking.html>. Accessed March 11, 2015.
- \_\_\_\_\_. 1998. *Musicking: The Meanings of Performance and Listening*. Middletown, Connecticut : Wesleyan University Press.
- Tenzer, Michael. 1998. *Balinese Music*. Berkeley: Periplus Editions.
- Thomas, A. 2002. “Informal Learning, Home Education and Homeschooling.” In The Encyclopaedia of Informal education, <http://infed.org/mobi/informal-learning-home-education-and-homeschooling/>. Accessed July 20, 2014.
- Tomasello, Michael. 1993. “Cultural Learning.” *Behavioral and Brain Sciences* 16: 495-552.
- Topeng Shakti. “Dance and Gamelan Music Performed by Women.” <http://www.culturebase.net/artist.php?3107>. Accessed October 5, 2014.
- Van Deinse, J. B. and W. R. O. Goslings. 1978. *The Singing Technique*. The Hague/Rijswijk: Government Publishing Office.
- Varley, Julia. 2000. “The Servant’s Story.” [http://www.themagdalenaproject.org/sites/default/files/OP6\\_Maringsih.pdf](http://www.themagdalenaproject.org/sites/default/files/OP6_Maringsih.pdf). Accessed February 28, 2015.
- Vickers, Adrian. 2005. *Journeys of Desire: A Study of the Balinese Text Malat*. Leiden: Kitlv.

- Vickers, Adrian. 1982. "The Writing of Kakawin and Kidung on Bali." *Bijdragen tot de Taal-Land-en Volkenkunde* 138 (4): 492.
- Wakeling, Katharine Elizabeth. 2010. "Representing Balinese Music: A Study of the Practice and Theorization of Balinese Gamelan." Ph.D. dissertation, University of London.
- Wallin, Nils L., Björn Merker, and Steven Brown. 2000. *The Origins of Music*. Cambridge, Massachusetts: The MIT Press.
- Wallis, Richard Herman. 1980. "The Voice as a Mode of Cultural Expression in Bali." Ph.D. dissertation, University of Michigan, Ann Arbor.
- Weidman, Amanda. 2006. *Singing the Classical, Voicing the Modern: The Postcolonial Politics of Music in South India*. Durham, NC: Duke University Press.
- Winsel, Regnier. 1966. *The Anatomy of the Voice*. New York: Exposition Press.
- Wiryomartono, Bagoes. 2014. *Humanities, Social Sciences and Law. Perspectives on Traditional Settlements and Communities: Home, Form and Culture in Indonesia*. Dordrecht: Springer Singapore.
- Wolfe, Pat. 2010. "Brain Matters: Translating Research Into Classroom Practice." Alexandria, Va: Association for Supervision and Curriculum Development.
- Woolf, Virginia. 1957. *A Room of One's Own*. New York: Harcourt.
- Zurbuchen, Mary Sabina. 1981. "The Shadow Theater of Bali: Explorations in Language and Text." Ph.D. dissertation, University of Michigan.