The Shakuhachi and the Didjeridu:
Two Case Studies of Historical Iconology, Performance Practice and Their Relation to Avian Respiration and Song

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Abstract

This thesis provides case studies of two end-blown instruments: the didjeridu, an Australian Aboriginal horn, and the shakuhachi, a Japanese flute, focusing on the correlation between avian symbology, respiration and song and each instruments' performance practices and history. Both instruments are depicted using avian iconology in the ancient art of their respective cultures: the rock art of the Northern Territory and the mandala art of Shingon Buddhism. Using a broad range of interdisciplinary data the thesis argues and concludes that the use of avian symbology was purposeful rather than coincidental, citing multiple analogies between avian respiration and song and each instruments' playing methods and performance practices. Further, ancient avian iconology present in the Taizōkai mandala provides evidence of the early history of the shakuhachi as a *hōki*, or spiritual tool, of Shingon Buddhism. These findings provide an alternative to the specious legend used by the Fuke sect about the shakuhachi's early history, and give new evidence that the shakuhachi was first a tool of Shingon Buddhism before it was a tool of Zen.

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university or other institution, nor does it contain any material previously published or written by another person except where due reference is made in the text.

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Organization and Design of Thesis

This thesis is organized into five sections that contain thirteen chapters. Section One, the introduction, contains three chapters. Chapter One explains the reasoning behind the choice of these two instruments and an overview of my fieldwork. Chapter Two presents my theoretical organological framework. Chapter Three addresses the relevant literature written about the didjeridu, the shakuhachi, the fields of ethnomusicology, organology, and music iconology as well as a description of the literature in relevant areas to my research.

Section Two, Pertinent Background Information, is dedicated to providing the reader with the necessary and relevant background information in preparation for Section Three. It includes chapters about the history and performance practices of the two instruments, avian anatomy and physiology, and bird motifs related to other instruments worldwide. The content of these background chapters is the compiled research of others.

Section Three, The Avian Analogy, contains the explanation of my findings. Chapter Eight describes early iconological depictions of the didjeridu in rock art, myth, and contemporary Aboriginal art in relation to avian motifs. Chapter Nine provides a comparison between avian respiration and song and didjeridu performance practices and provides examples of traditional and contemporary didjeridu music

and birdsong notated in the notation system I have designed. Chapter Ten discusses the relationship between the bird and the shakuhachi depicted in the *Taizōkai* mandala of Shingon Buddhism and suggests an alternative to the prevailing legend about the shakuhachi's origins while Chapter Eleven explains the history of this relationship further by examining ancient Chinese correlations between the mythical bird, the bamboo lü, and Chinese astronomy. Chapters Ten and Eleven present information about Shingon Buddhism and Chinese history that are relevant to understanding the avian/shakuhachi analogy. Chapter Twelve provides a description of the similarities between avian respiration and song and shakuhachi performance practices and organology.

The Conclusion section includes a comparison of the two instruments and my final conclusions. The three Appendices provide a glossary of Japanese and Aboriginal terms and a description of my didjeridu notation program used in the thesis.

Section I

Introduction

Chapter One – Introduction

Introduction

This thesis explores thorugh two case studies, organology; avian iconology; empirical science; performance practice; and social, cultural, and religious associations of two end-blown wind instruments in their indigenous cultural contexts. Each has an approximately 1500-year-old history. By examining these relevant extra-musical associations, a more comprehensive understanding of each instrument's classification and position within its indigenous culture can be discovered.

Instruments

The didjeridu is an end-blown natural trumpet originally crafted of indigenous bamboo. It has a unique playing technique that uses vibrating lips, the muscles of the cheeks and tongue, and circular breathing. It is simple in design, originally constructed of native bamboo, although in the last few hundred years it has been made of indigenous eucalyptus naturally hollowed out by termites. In traditional use, only males play, and the didjeridu is used as an

accompanying instrument to song and dance with clapsticks in both non-secret and secret-sacred ceremonies.

The shakuhachi is an end-blown flute made of indigenous bamboo with a unique oblique outward blowing edge. It has a history of both sacred and secular use and was originally played by men. Performance practices include multiple head and lip positions to achieve multiple microtones and timbres and strong abdominal breathing techniques. In the Sachs and Hornbostel scheme, both instruments are classified as aerophones and "wind instruments proper," because the vibrating air is confined within the instrument itself (Sachs and Hornbostel 1961: 25). While the didjeridu is a natural end-blown straight trumpet without a mouthpiece classified as 423.121.11, the shakuhachi is an open single end-blown flute with finger holes classified as 421.111.12. This thesis examines these two instruments as case studies, exploring their avian symbology and its relation to each instrument's performance practices and history.

I used a case-oriented and qualitative method for my research. This methodology allows for holistic comparison, viewing the case studies as combinations of characteristics. In addition, a case-oriented study, by its nature, is sensitive to complexity and can be used to generate new conceptual schemes (Ragin 1987: ix). It is, therefore, well suited to a study such as this one, which includes multiple

concepts from a diversity of disciplines. Further, case-oriented methods often stimulate the development of new theories (Ragin 1987: 44). It served as the ideal method for my research by allowing me to examine in depth the avian symbology, iconology, and myth related to each instrument and then explore the correlations and possible meanings underlying the use of bird motifs in association with each of these instruments in their respective cultures. In order to accomplish this, I have gathered and interpreted a broad range of interdisciplinary data. Through a study of iconology, empirical science, and the performance practices of both instruments, this dissertation's novel contribution to organology lies in the field of historical and comparative iconology of two end-blown musical instruments that are comparable in age and material of construction and to which a body of historical facts, cultural meanings, mythology, performance practices, avian correlations, and religious beliefs are attached.

Because one is a trumpet and the other a flute, these two instruments may superficially appear to have little in common. Upon closer examination, however, they have similarities that lead to useful comparison, including their age, material of construction, history, iconology, and cultural meaning. Both instruments are end-blown aerophones, traditionally made of indigenous bamboo, and both are

approximately 1500 years old[1]. Both have avian iconology in their history, and both are completely unique to their respective cultures. No other culture in the world has instruments that resemble the didjeridu and the shakuhachi in their essential qualities (see Jones 1967; Kishibe 1984, Malm 2000). Both are very simple in design but have sophisticated performance practices. Each instrument has a history of highly sacred and secular uses in its home culture, and both are highly popular in contemporary society as solo and ensemble instruments outside their cultures of origin.

Other aerophones of the world share some but not all of the above characteristics. While there are other flutes that have relevant avian symobology, including the Solomon Island au'porare and the Native American siyohanka, the au'porare, although bamboo, is a transverse flute, and the siyohanka, though end-blown, is a duct flute made of wood. In addition, the Tibetan dung chen is an end-blown trumpet that uses circular breathing but is made of metal and lacks avian correlations. Although the Indonesian suling is bamboo and end-blown, it also lacks avian correlations. Other aerophones have circular breathing in their performance practice but have reeds (the Turkish sipsi, the Cambodian sralai, the hornpipe, the Chinese suona, the Anatolian zurna, and the quadruple reed Thailand pi) or multiple

[1] The shakuhachi was created in China between 627-649 CE, and the didjeridu first appeared in rock art in approximately 500 CE.

pipes (the Sardinian launeddas, the Egyptian mijwiz and argul, the Basque country alboka, and the bagpipe). Thus, the didjeridu and the shakuhachi are the only two single-pipe instruments in the world that share all of the above described characteristics, and these similarities and their differences make them a fruitful choice for comparison.

Although it is unusual in ethnomusicology to study and compare two instruments from totally different cultural settings, I found such a bi-focal study to be very stimulating intellectually. As a university lecturer of undergraduate ethnomusicology classes and a player, performer, student, and teacher of multiple ethnic instruments from cultures including India, Africa, Egypt, Japan, and North Arnhem Land, I became curious about the myths, motifs, sociocultural, and religious associations of these two instruments' earliest histories. My increased understanding of the iconology, playing techniques, mythical/religious associations of the one instrument informed my understanding of the other. For example, I discovered that the indigenous cultures associate the two instruments with avian breathing and bird mythology, a fact that led me to make detailed physiological and acoustic studies of birds and their place in the two cultures' mythologies. This study resulted in some unexpected insights.

Terminology

Organological iconology is the description, classification, and interpretation of a musical instrument in its historical and cultural setting and its depictions in ancient and modern art. The suffix, derived originally from the Greek verb *legein,* means 'to speak'. Iconology refers to the wealth of meanings related to visual depictions; to understand those meanings requires exploration into numerous types of sources beyond the artistic depiction itself (Wade in Arnold 1999: 303). The aim of organological iconology is to decipher and explain the meaning behind an instrument's representation through the analysis of its symbolism and mythology. Iconology moves beyond individual icons to the study of broader contextual considerations (Wade in Arnold: 302). The term *iconology* as used in this thesis includes the relevant symbology and mythology as well as the visual depiction. Thus, *comparative organological iconology* is a systematically comparative study of two or more instruments that are similar in certain ways. It supports new fields of research at the crossroads of disciplinary studies of the visual, textual, aural, and verbal aspects, including bodies of discourse by native owners, makers, and players of the instruments. Therefore, it can lead to novel discoveries and understandings.

As a concept in the history of ideas, the documented study of the iconology of musical instruments was first explored by painter-scholars of the Italian Renaissance, who sought, through iconology, to increase their knowledge of the instruments of the ancient Greek Culture (Teviotdale in Knighton and Fallows: 179). The first major writer to use the method of comparative iconography in his discussions of musical instruments was Curt Sachs in his books *The History of Musical Instruments*, *A Short History of Music*, and *The Rise of Music in the Ancient World, East and West*. Furthermore, Winternitz's book *Musical Instruments and their Symbolism in Western Art* (1967) had great influence on the study of musical iconology. Composed of essays from the 1940s forward, the gathering of these articles into a coherent study led quickly to the establishment of music iconology as one of the vital disciplines of music history (D.F. 1980: 237).

Fieldwork Overview

The fieldwork for this study gave me the privilege of interviewing and studying with some of the greatest musicians in their fields. Travelling to Nhulunbuy, Kyōto, Tokyo, Uji, New York City, Denver, and Ashland as a participant/observer, I studied the performance practices, sociocultural, and religious associations, pedagogical techniques, and construction methods of each

instrument. To learn the most authentic didjeridu and shakuhachi performance practices, I studied the didjeridu with Djalu Gurruwiwi, Ash Dargan, and Ondřej Smeykal and the shakuhachi with Ronnie Nyogetsu Reishin Seldin and Alcvin Takegawa Ryuzen Ramos.

Djalu Gurruwiwi is a Northeast Arnhem Land elder of the Galpu clan and the custodian of the yirdaki. He is a highly respected elder, musician, and craftsman of the yirdaki and has tremendous knowledge of the yirdaki in its indigenous culture. Ash Dargan is a man of Aboriginal descent reared in a non-Aboriginal home and has been very successful in linking his traditional background with a prominent recording career in the world music genre using the didjeridu. Ondřej Smeykal, from the Czech Republic, is a contemporary didjeridu player who has pushed the limits of the didjeridu creatively and technically. Ronnie Nyogetsu Reishin Seldin is a Dai-Shihan (Grand Master) who has been playing the shakuhachi flute for over 25 years and was one of the first Americans to teach shakuhachi in America in the late 1970s. Alcvin Takegawa Ryuzen Ramos is a Dai Shihan and an instructor in the Do-kyoku repertoire of Watazumi's (1910-1992) lineage. In Kyōto, I also had the privilege of meeting, informally interviewing, and learning from Kurahashi Yoshio-sensei, one of the best shakuhachi players in the world.

I travelled to Shingon Buddhist Temples in Kyōto and the Byōdō-in Temple in Uji to see evidence of the relationship between the fènghuáng, Karura, and the shakuhachi in ancient Japanese art. The Byōdō-in, or Phoenix temple, depicts in the painting and sculpture a clear connection between the phoenix (*fènghuáng*, the mythical bird of China) and music evident in its painting and sculpture. Further, the Phoenix Hall has three wings, symbolizing fènghuáng, the mythical bird of China. Daigoji and Tōji Temple in Kyōto are two of the primary Shingon Temples in Kyōto and house Ryōkai mandalas.

Music-making and learning about these instruments have been crucial and integral elements of this research. Both of these instruments are still primarily transmitted orally, from teacher to student, generation to generation. These teachers are the live holders and preservers of the wisdom of each instrument. I have gained exceptionally valuable and significant information about performance practices, cultural use, meaning, and repertoire through consistent study of these instruments in a lesson format. Through daily playing, I have experienced viscerally subtleties of the repertoire and performance practice that otherwise would not be available to me.

Chapter Two – Organological Framework

Organological Approach

This study focuses not only on the usual method of the classification of the instruments based on a morphological, acoustic, and performative basis but also—indeed primarily—on the instruments in their human settings, including their functions, meanings, symbologies, history, and aspects of their performance practices. A definition and brief history of organology, an explanation of the areas of organology this thesis will focus on, and its theoretical organological framework follow.

Organology in the past has often focused on the elements of instrument construction, classification, and material and acoustic properties. As Dawe comments:

> Since the enlightenment, scholars have been concerned with collecting and cataloguing an enormous range of historical and indigenous musical instruments from around the world. The focus has been largely upon the investigation of their material and acoustic properties, description for probable methods of constructions, sound qualities, the techniques required to produce sounds from them, and their repertoire . . . the study of musical instruments and their methods of construction, "the science of sound instruments" or "organology" . . . has drawn largely on the methodologies and techniques of acoustics, wood studies, materials conservation, museum studies, and biological systematics. (Dawe 2001: 219)

However, such a systematic classification of instruments neglects the instruments' sociocultural elements and leaves mythical and symbolic

elements inherent in the instruments' meaning and purpose undiscovered. An organological study must include these elements if the aim, as in this thesis, is to reach a comprehensive understanding of the selected instruments in their culture. I share the view that musical instruments need to be viewed as

> objects existing at the intersection of material, social and cultural worlds, as socially and culturally constructed, in metaphor and meaning, industry and commerce, and as active in the shaping of social and cultural life. Organology is as much about the study of culture and society as it is about the science of measurement and manufacture. (Dawe 2001: 220)

Organological History and Definition of Pertinent Terms

In the late 19th century, the science of the classification of instruments began in Europe. It was influenced by the need to catalogue and systematize large collections of instruments, including those of foreign cultures. Many of the early systems (including Mahillon in 1880, Sachs and Hornbostel in 1914, Schaeffner in 1932, Galpin in 1910 and 1937) classified instruments based primarily on their acoustic qualities, mode of sound production, and morphological properties. Dissatisfied with the limitations of many of the classifications of the time, scholars Norlind (1932) and Izikowitz (1935) included in their systems the sociocultural context of instruments in addition to acoustical and morphological properties. In turn, Dräeger (1947) contributed to a more comprehensive view of

organology by considering the cultural-historical, sociological, and philosophical characteristics of instruments. Merriam (1964, 1977) also believed that concentrating too much on the structure and technological elements of instruments neglected social and cultural meanings, and from the 1970s to the 1990s, a number of scholars created new classification systems that sought to express more comprehensive views.

These elements are best explained using paradigmatic rather than typological grouping. Paradigmatic grouping derives from the intersection of several facets or dimensions, and is normally a natural and culture-emerging phenomenon, while a typology is always based on the construct of the observer (Kartomi 1990: 21). The mandala is by nature a paradigmatic visual tool that links figures, colours, and symbols, giving interrelated meaning to each through the mandala's design and symbology. The use of a paradigmatic classification system, therefore, is well suited to exploring the evidence within the *Taizōkai* mandala and Arnhem Land rock art, which use symbolic images and depicts underlying relationships among elements.

Delimitations

This thesis will not focus on the acoustic and structural elements of the two instruments. These have been studied in depth by others (see Fletcher, Gutzwiller, Kō & Kitahara, Tarnopolsky, Fletcher, &

Hollenberg, Tukitani, Seyama, Simura, & Lee). Nor will it focus on the archaeological method of research, including descriptions of the two instruments based on measurements, photographs, and x-rays.

Organological Framework

> The application of a range of ideas and theories from the fields of anthropology, ethnography, material culture studies, cultural studies, sociology, social cultural history, and media communications offers a more holistic and synthetic approach to the study of musical instruments. . . . Sound-producing objects are instrumental in retaining cultural memory, act as embodiments of meaning, constructors of identity, icons of ethnicity and as sensors of place. . . . Musical instruments are viewed as part of active and potent symbol systems. (Dawe 2001: 221).

The organological framework I created to convey the results of my two case studies draws from the disciplines of ethnomusicology, cultural anthropology, Jungian psychology, ethnoarcheology, iconology, and biology, as well as the writings of many scholars, including Olsen (1990), Kartomi (1990, 2001), Kárpáti (1980, 1989), Feld (1981, 1983, 1984, 1990), Qureshi (1987, 1997), Leppert (1979, 1988, 1993), Tsuge (1976, 1978), and Jung (1964; see Figure 2-1). It also employs comparative process and empirical research. Tenets of Buddhist doctrines and practices and traditional Aboriginal beliefs and values, combined with a knowledge of didjeridu and shakuhachi construction and performance practices gleaned from fieldwork and

direct music-making experience give further evidence of these two instruments' organological meanings and sociocultural positions.

Organological Framework for Case Studies

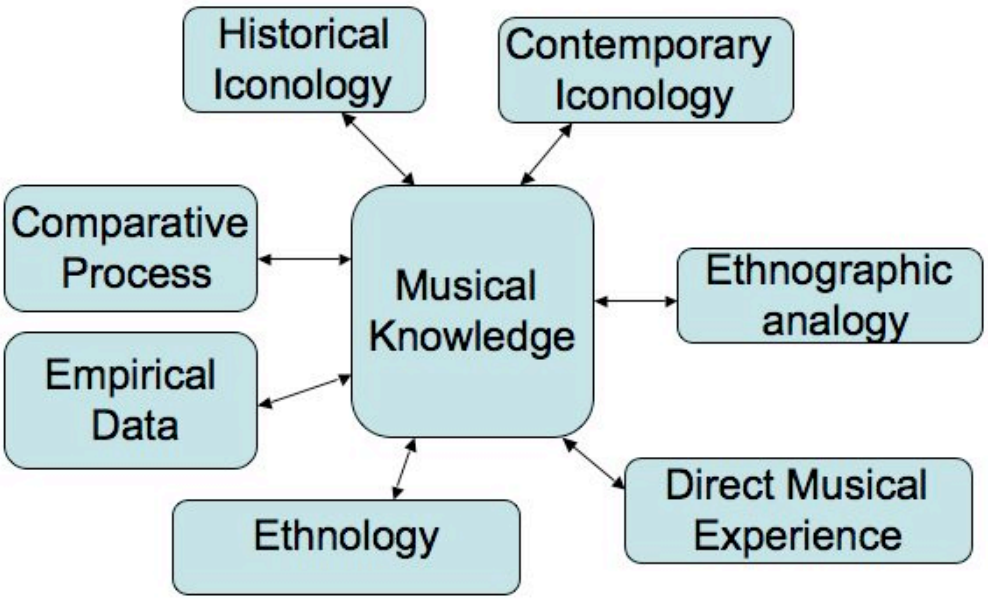


Figure 2-1: Theoretical framework design. Diagram by L. Rubin

The categories of my framework are as follows: Historical and Contemporary Iconology, Ethnographic Analogy, Comparative Process, Empirical Data, Ethnology, and Direct Musical Experience. I define each category and then give a brief explanation of its purpose and relevance to the research.

Historical Iconology

> Many cultures have preserved, iconographic, archaeological or documentary records by means of which historical processes in pre-modern times may be traced; these may be regarded as direct historical evidence, artefacts created at the time in question. Oral histories, song texts . . . may also offer indirect but significant clues to past events. (Widdess in Myers 1992a: 219)

Historical iconology can be a valuable means by which to discover historical data. Images may be understood as an equal partner to text in historical research: the visual construction of realities represents a unique, temporally located reality of a historical past (Bolvig and Lindley 2003: i). Liepe believes that "images are powerful carriers of meaning which participate in the shaping of a wider social and cultural context, and that the main potential of images as historical sources lies precisely in their visual formation" (Liepe in Bolvig and Lindley 2003: 417).

Historical research has made less use of the visual arts than written texts, due in part to the printing press. Since its inception, historians have had access to a huge amount of written source material.

> Historical methods are firmly based on working with texts and the whole apparatus for research has been based on and around the written word. . . . Pictorial source material did not exist for the fathers of historical sciences, or, if they did, only to a limited extent. (Bolvig in Bolvig and Lindley 2003: 230)

For this reason, the written word has attained a prominence that may have limited our understanding of the past.

> Today, it seems unquestionable that the privileging of text within our histories has denied us certain stories and certain views or the past. Allowing text to be the stuff of substance, and image merely that of illustration, has impoverished our models of distant historical places and moments. Culturally conditioned and technologically limited to building the past from and with words—with all the structural constraints therein—we

> have been limited (or so we now believe) as to the shapes and patterns we can conceive and demonstrate. (Colson et al. in Bolvig and Lindley 2003: 187)

Furthermore, the study of musical instruments through iconology can facilitate the study of the instrument within its cultural environment.

> Musical meaning and effect need to be considered as historically and socially situated. (Qureshi 1997: 4)

Since an instrument's visual image reflects its social and cultural functions rather than its acoustic properties, the very limitations of musical images can be of great value to the ethnomusicologist:

> All that remains of music in the image is its trace as a socialized activity. The question arising from visual representation is hence one of music's socio-cultural function. (Leppert 1988: 3)

Iconology, in contrast to iconography, examines the symbol beyond its face value. It finds the intrinsic meaning of an image as a representation of a given culture at an interpretive level (Seebass in Myers 1992: 239). Further, "in order to understand a music picture it is crucial first to establish its relation to the story or myth which led to its making" (Seebass in Myers 1992: 241). No image is ever completely present in isolation—representational figures, motifs, forms, and colours only acquire their full meaning when considered in relationship to other elements, including their relative positions in a painting (Schmitt in Bovig & Lindley 2003: 19).

> While obviating the picture's usefulness as documentation of performance practice, it in no way affects its value for the history of musical thought. The search can lead us past the indisputably valuable "hard evidence" visual art provides about the performers and their instruments; it can lead us into what has been termed the "invisible world of ideas." These are embodied, however obtusely, in the symbolic images, and can be just as revealing to the music historian as the surface evidence. In this respect visual art is a far more valuable resource to study than photographs of early musical performances would be—were they available—because, unlike the real world captured in a snapshot, in art the world is constructed, not real literally but symbolically so, for it represents the world view of an artist . . . not only do we see images of the past as in a photograph, but we grasp the ideas that governed that past and which are fundamental to historical understanding. (Leppert 1993: 16)

Iconographic symbols may suggest to the viewer elements of musical practice that cannot (by the limitations of the visual modality) be expressed aurally.

> Music's effects and meanings, which in performance are produced both aurally and visually, in painting must be rendered visually only. The way of seeing hence incorporates the way of hearing: the artist must produce images in such a way that their meanings will be congruent with those produced by sight and sound together in the lived experience of the original and intended viewer. (Leppert 1988: xxi)

Musical iconology is a relatively new field. Winternitz is considered the Western father of musical iconology. When his book *Musical Instruments and Their Symbolism in Western Art: Studies in Musical Iconology* was first published in 1967, his request to the Catalogue Division of the Library of Congress to include the term *musical iconology* among its subject headings was refused because

"such a discipline does not exist" (Winternitz 1979: 17). According to Winternitz, musical representations in painting, sculpture, and many other branches of the visual arts are of supreme documentary value to musical history because "paintings permit us to draw conclusions about the current popularity of instruments, their religious significance, or their function as embodiments of symbolic meaning" (Winternitz 1979: 43). Winternitz believed that instruments are holders of cultural meaning beyond their capacity as a sonic medium:

> Interest in instruments is not confined to a consideration of them within a purely musical context. They carry meaning beyond their function as tools—that is, beyond their musical significance. And here we encounter aspects such as the function of the instrument within its social milieu, its role as bearer of allegorical thought, as product of the plastic arts, and so on. There aspects that are not strictly musical are, curiously, little investigated today, although much thought was given to them in earlier phases of culture—in the Renaissance and Baroque for instance—not only by scholars and poets, but also by artists. (Winternitz 1979: 20)

Methodological studies in historical ethnomusical iconology are relatively rare. The *Taizōkai* mandala of Shingon Buddhism and the Aboriginal cave art of North Arnhem Land are valuable historical icons in which the shakuhachi's and the didjeridu's early history and sociocultural/religious meaning are evidenced.

The word *mythography*, as defined by Eubanks, describes a methodology linking the symbology, story, and interpretation of myth with a tangible object, in this case a musical instrument:

> Instead of just trying to interpret myth, I'm interested in how it is inscribed in our material culture. Mythography implies a process of "becoming real" that incorporates stories, tropes, things and spaces in ways that I find very useful. (Eubanks 1991: 1)

Moreover, myths, legends, and their symbolism are an integral part of the paradigm that assigns a musical instrument meaning. Like images, myths can shed light upon history:

> The ancient history of man is being meaningfully rediscovered today in the symbolic images and myths that have survived ancient man. (Henderson in Jung and Franz 1964: 106)

Use of relevant mythology is crucial to understanding a musical instrument's meaning within a culture. As Kárpáti comments:

> In contrast to the facts-or rather beside them—there is a flexible chain of tradition, at times of uncertain nature, a series of myths, mythologems, beliefs, and customs, which inform us about the individual and social contexts in which man used objects—in this case musical instruments—and beyond this the important further knowledge offered by the musical instruments as objects related to the complete life and culture of a given society. (Kárpáti 1989: 5)

Classification of instruments by myth occurs in a number of cultures throughout the world. The Arabic 'ud, for example, is part of a classification system based on myths of origin. West African cultures, including the Gio and the Kpelle of Liberia, use myths about an instrument's creation as one basis of instrument classification (Kartomi 1990: 241). Even in China,

> This high culture and apparently scientific schematization cannot hide the fact that the materials of musical instruments

> were primarily evaluated on the basis of a mythical-cultic point of view. (Kárpáti 1989: 16)

A *musico-symbolic system* is defined here as the art of investing an instrument or its image with symbolic meaning, or a series of meanings, in order to express a more sophisticated or complex relationship or concept than a literal concept representation would allow. This system is a complex web of interconnected symbolic meanings that relate within a paradigmatic design. Many ancient cultures connected music to extra-musical elements, such as cosmological influences, including the four directions, the planets, and the seasons, as well as numerological, animal, and plant symbolism.

Ethnographic Analogy and Ethnology

Ethnographic analogy is the study of possible parallels between an ancient culture and a living culture or cultures (Olsen in DeVale 1990: 177). Both the didjeridu and the shakuhachi show relationships between the fifteen-hundred-year-old iconology and contemporary performance practices, iconology, and cultural elements. Ethnology is the study of religious and sociocultural belief systems. The tenets and practices of Shingon Buddhism and how they connect to the shakuhachi help explain the shakuhachi's purpose and position in the *Taizōkai* mandala. On the other hand, the Aboriginal people's exceptional bond with the natural world, their belief system of The

Dreaming, and their intimate and multifaceted knowledge and classification of plants and animals help explain the didjeridu's avian correlations. These sociocultural and religious aspects of the respective cultures give crucial evidence and background about the instruments' meaning and purposes in their indigenous milieu.

Empirical Data

Contemporary scientific knowledge of avian physiology, anatomy, and the mechanics of birdsong, reached through observation and experimentation, provides critical information about the avian relationship to both the didjeridu and the shakuhachi. Much of the information about the specifics of the avian respiratory system and the mechanics of birdsong have been discovered through Western science only within the last forty years. Using a multidisciplinary approach, including empirical data, connects elements and provides clues to ancient choices of symbology.

Direct Musical Experience

> . . . but it was playing the instrument that drew me into the web of meanings emanating from the sounds I was learning to hear and make. (Qureshi 1997: 1)

Actively studying the didjeridu and the shakuhachi in daily practice and performance, formal study and fieldwork, gives me the opportunity for kinaesthetic and intellectual realizations. I have had

awareness of organological relationships, including avian correlations, in the performance practices and music of each instrument. Through fieldwork in Japan and the Northern Territory I actively participated in the full process of making a didjeridu in the traditional manner, and observed in Japan a master shakuhachi maker in his workshop. From these experiences I have garnered many subtleties of the instrument, its history, and its social cultural meaning that I would not otherwise have had access to.

Comparative Process

My case studies of the two instruments include a rigorous comparison of the instruments' symbols and meanings. The didjeridu and the shakuhachi, although from different cultures, share temporal proximity and acoustic/morphological similarities. Fifteen hundred years later, both instruments are now still used in their indigenous cultures and are also quite popular in other areas of the world.

Conclusion

Through the discipline of historical musical iconology, and by gathering data from a variety of disciplines, I suggest conclusions about the organological meanings embedded within these two instruments. By examining these instruments comprehensively as holders of cultural meaning, part of a paradigmatic symbolic system

associating seemingly disparate elements, new information about each instrument can be garnered.

Chapter Three – Literature Review

This section provides a critical review of the published literature on the thesis topic. It includes writings on the didjeridu, the shakuhachi, musical iconology, ethnomusicology, and organology. Research in the areas of avian respiration and song, Shingon Buddhism and the Ryōkai mandala, birds and music in cultures worldwide, and Chinese music theory and legend is also considered.

Didjeridu

Ethnomusicologists whose writings offer information about the didjeridu's history and performance practice include Jones and Moyle. Jones (1967) demonstrates that the didjeridu is without parallel in performance practice when compared to other instruments of its type found in other cultures while Jones (1973) explains elements of the didjeridu's performance practice and includes transcriptions of didjeridu music. Moyle's work on the didjeridu's performance practices exists in jacket notes of the records *Songs of Aboriginal Australia and Torres Strait* and *Songs from the Northern Territory*, both recorded in 1964. In 1977, Moyle also recorded *Songs from North Queensland*, and in 1978, *Aboriginal Sound Instruments*, with corresponding jacket notes about the music.

The acoustics of the instrument is relevant to the topic because it is necessary to understand the mechanics of didjeridu playing in order to understand its breath and performance practices. It has been studied in depth by physicist and acoustician Dr. Neville Fletcher, who has written a number of articles that address the acoustics of the didjeridu, including his 1983 "Acoustics of the Australian Didjeridu," the 1996 "The Didjeridu," and in 2003, "Australian Aboriginal Musical Instruments: The Didjeridu, the Bullroarer, and the Gumleaf."

Authors who have addressed the didjeridu's relationship to Dreaming ancestors, including the Rainbow Serpent and Old Man Karramala, include Warner (1958), which discusses how the didjeridu is used by the Murngin people of North Arnhem Land in ceremony, and Rose (2002), which discusses Wild Goose Dreaming and its relationship to the didjeridu. Furthermore, anthropologist Turner's 1997 book, *Afterlife before Genesis: An Introduction: Accessing the Eternal through Australian Aboriginal Music*, explains his experience in learning to play the didjeridu in a traditional Groote Eyelandt Aboriginal community and the sociocultural meaning of didjeridu music. Moyle (1974) describes the origin legend of the didjeridu and its relationship to the bird Dreaming ancestors.

Chaloupka (1999) first identified the simultaneous position of the goose wing fans and the didjeridu in rock art of the Freshwater

period in North Arnhem Land. Using Chaloupka's findings, Moyle (1981) discusses the didjeridu as a historically relatively recent addition to Aboriginal music, superimposed on an earlier musical culture. From this iconological relationship between the didjeridu and the bird, I discovered analogies between the avian symbology and the didjeridu's performance practices. Further symbolism in rock art is discussed in David (2002), Layton (1992), and Morwood (2002).

Other authors discuss issues pertinent to the didjeridu as a contemporary world-music instrument, primarily focusing on the issues of exploitation and ethics. They include Neuenfeldt's "The Essentialistic, the Exotic, the Equivocal and the Absurd: the Cultural Production and Use of the Didjeridu in World Music" (1994) and "The Quest for a 'Magical Island': The Convergence of the Didjeridu, Aboriginal Culture, Healing and Cultural Politics in New Age Discourse" (1998), Lim's "Issues of Authenticity: When Is a Didjeridu not a Yirdaki? Issues of Authenticity, Commoditization and Control of an Australian Aboriginal Artefact in the Global Economy" (2000), and Welch's "Appropriating the Didjeridu and the Sweat Lodge: New Age Baddies and Indigenous Victims?" (2002). These authors address multiple issues of the didjeridu as a contemporary pan-Aboriginal instrument.

Hadley (2007), addressing the "didjeridu dispersion," uses interviews with didjeridu players to explore contemporary didjeridu practice in the United States. Hadley's thesis is based on his theory that the didjeridu is a hollow log, only given meaning by the narrative stories of the person who plays it. Because the didjeridu is an instrument unique to and originating only with the Northern Territory Aboriginal people, I do not believe that the instrument can truly be separated from its Aboriginal background and related myths and sociocultural implications. Neuenfeldt (1996) comprehensively addresses issues regarding the instrument, including its traditional uses and its use worldwide, including perspectives of Aboriginal and non-Aboriginal players.

The Shakuhachi

The most comprehensive book in English about the history of the shakuhachi is by Kamisangō—*The Shakuhachi- A Manual for Learning*—which was cowritten and translated by Blasdel, originally published in 1988 and released as a second edition in 2008. Furthermore, Tukitani et al. give a historical overview of the shakuhachi, a history of the shakuhachi's organology and notation, and the theory of Japanese tetrachords as it applies to shakuhachi music. Also, Lee (1992) includes a comprehensive history of the shakuhachi, as does Takahashi (1990). Hisamatsu Fūyō (1790-1845)

wrote the only extant historical treatise that discusses the theories and philosophical/spiritual meanings related to the shakuhachi's use as a *Hōki*. Fūyō discussed the importance of the breath in shakuhachi performance practice. Gutzwiller's *Die Shakuhachi der Kinko-Schule* includes English summaries of these three treatises.

Authors who discuss the *Kyotaku Denki Kokujikai*, its history, and its falsification include Yamamoto (1977) and Kamisangō (in Blasdel and Kamisangō 1988 and 2008). Yamamoto discusses this document which is of great importance to the history of the Fuke sect, and his article includes a translation into English of the *Kyotaku Denki*. Kamisangō discusses in detail how Nakatsuka, in the early 20th century, discovered that the *Kyotaku Denki* was falsified, used by the Fuke sect to describe the origins of the shakuhachi for the sect's own purposes.

Blasdel and Howard are two authors who discuss the shakuhachi as a Buddhist spiritual tool. Blasdel's article "The Shakuhachi: Aesthetics of a Single Tone" (1984) explores the shakuhachi as a tool of meditation or spiritual practice. Howard's article "Musico-religious Implications of Some Buddhist Views of Sound and Music in the Surangama Sutra" (1991) draws correlations between elements of Buddhist doctrine regarding sound and the shakuhachi philosophically and questions the validity of the Fuke legend. Neither author

addresses a possible relationship between Shingon Buddhist practice and philosophy and their relationship to the shakuhachi.

Multiple sources discuss the construction of the instrument, including Tukitani et al., Blasdel, and Levenson, but Kudo's Master's thesis *Kinko Shakuhachi: One Maker's Approach* (2006) is the most comprehensive description in English of the process of traditional shakuhachi construction. Kō and Kitahara's *The Shakuhachi: Encyclopaedia of Musical Instruments* also gives a detailed discussion of shakuhachi construction and organology. Two personal biographies about learning the shakuhachi as a foreigner in Japan include Brooks (2000), *Blowing Zen*, and Blasdel (2005), *The Single Tone: A Personal Journey into Shakuhachi Music*.

Ethnomusicology, Musical Iconology, Organology

Comparative Ethnomusicology

Ethnomusicology, originally called *comparative musicology*, is discussed in Merriam (1977), which addresses the definitions of both terms as they have been used in the United States from the 1950s through the late 1970s. Further, Nettl (1973) examines the role of comparison in ethnomusicology and promotes the view that comparison is an essential element of the field. In addition, Kartomi (1993) argues that comparative musicology has always been a part of

ethnomusicology and has, in fact, resurfaced in the late 20th century in a substantial way.

Musical Iconology

Musical iconology is an area with much room for growth, particularly in ethnomusicology. There are articles, primarily from the journal *Music in Art*, that pertain to historical musical iconology, although neither the shakuhachi nor the didjeridu is included. Baldassarre emphasizes the importance of a holistic and multi-disciplinary approach to musical iconology research and is one of the few writings devoted to music iconological method. In addition, musical iconology writings about aerophones include Kaminski's article (2007) on African ivory trumpets and their history, and an article by Alexandrescu (2007) which discusses the iconography of ancient Roman wind instruments. Further use of visual sources to gain information about Japanese instruments can be found in Nelson's "Depictions of Gaku: Some Remarks on the Possibilities and Limitations of Musical Iconography in Historical Research," (2001) and Miyazaki's (1999) "The History of Musical Instruments in Japan and Visual Sources," which offers three cases of analyzing Japanese musical instruments from the 3rd to 6th centuries AD and the 17th century by using visual materials. Kashima, investigating Kugo Buddhist harps, uses Ryōkai mandala iconography while Van Keer

discusses the relationship between myth and musical iconography in ancient Greek art. In addition, Leppert has written multiple books and articles about musical iconology, which focus on Western instruments, including the 1979 article "Concert in a House: Musical Iconography and Musical Thought," the 1988 book *Music and Image: Domesticity, Ideology, and Socio-Cultural Formation in Eighteenth-Century England*, and the 1993 *The Sight of Sound: Music, Representation, and the History of the Body*. Finally, Bolvig and Lindley discuss the elements and concepts of iconology in *History and Images: Towards a New Iconology*.

Organology

In 1961, Anthony Baines and Klaus Wachsmann translated Sachs and von Hornbostel's "Classification of Musical Instruments" from the original German. The Sachs and Hornbostel scheme has been extremely influential and widely used in the field of organology, and the Baines and Wachsmann translation is its published rendition in English. A number of authors have promoted the view that organology must include an instrument's sociocultural, mythic, philosophical, and religious connections in addition to its physical form. These works include Baines (1960), which discusses the need to find a fresh approach to understanding instruments as cultural tools.

Baines addresses organology's responsibility to other branches of historical science.

Furthermore, Dournon (1981) gives a general foundation for the classification of musical instruments that includes their social and cultural context, and Kartomi (1990) discusses the difference between observer-imposed and indigenous culture-based classification systems and the difference between downward logical taxonomic division and paradigmatic, horizontal grouping. Kartomi argues that organology is not merely a study of the acoustic and morphological elements of an instrument but should include the social and cultural aspects as well. The 1990 *Issues in Organology*, edited by DeVale, is a compilation including articles discussing the history of organology in the West (by Jairazbhoy), the ethnomusicology of archaeology (by Olsen), and the conceptual framework of organology (by DeVale). More recently, Dawe (2001) emphasizes the importance of including sociocultural aspects when classifying instruments. Dawe argues that organology is as much about the sociocultural elements of an instrument as it is about its scientific measurements, acoustic qualities, and manufacturing details. Finally, Hood (1982) suggests that the view of organology be expanded to include techniques of performance, musical function, decoration, and sociocultural considerations. He defines the term *organography* and introduces a system of

classification using organograms that have elements reminiscent of the Laban system of notation for dance.

A few authors have focused on specific instruments in specific cultures and the relationship of myth to those instruments. Grame (1972) examines the ʻud, an Arabic stringed instrument, focusing on its related myth and symbolism. He discusses the importance of the tree as the true ancestor of the ʻud and stresses that the legendary material related to this instrument is as significant a part of its history as its physical nature. He further emphasizes the importance of anthropomorphism and zoomorphism in the study of organology. Tsuge's article "Musical Idols: Beasts in the Form of Instruments" further addresses the elements of symbolism related to a musical instrument. He argues that symbolism is often overlooked in organology and gives multiple examples from many cultures citing the relationship between animals, both mythical and real, and musical instruments. Finally, Kárpáti focuses on myth as a crucial part of understanding a musical instrument within its sociocultural context in his articles "Myth and Reality in the Theory of Chinese Tonal System" (1980) and "Myths as Organological Facts: After Rereading Denes Bartha's 'Double Pipe of Janoshida'" (1989). Using Tsuge's categories as a springboard, Kárpáti discusses the issues of anthropomorphism and zoomorphism as they relate to an instrument's organology, and

also addresses how a musical instrument reflects the cosmology of a culture in its form and structure.

Organological writings addressing culture-specific rather than observer-imposed classification systems include those of Zemp, Johnson, and Feld. Zemp's 1978 article about the 'Are'are culture of the Solomon Islands is one of the first writings that explores a classification system created by those within the society rather than by an outside observer. He discusses the 'Are'are's twenty musical types classified into four categories. Through exploring this culture's musical classification system, Zemp adds new insights about different cultural types of musical thinking. Furthermore, in his 1996 article, Johnson addresses the different ways Japanese instruments have been classified throughout Japan's history including classification by length and the Chinese method of classification. He also addresses the differences between indigenous Japanese and Western classification systems.

Feld's 1990 book *Sound and Sentiment: Birds, weeping, poetics, and son in Kaluli expression* is based on his extensive fieldwork with the Kaluli people of Papua, New Guinea. It explores the sociocultural metaphors, origins, symbolism and classification evident in their culture as they relate to music. He particularly discusses how Kaluli music is intimately related to bird motifs and song in its performance

practices, text, dance, and costumes. Moreover, Feld (1981) addresses how metaphors of Kaluli culture and daily life are manifested and mirrored in their musical practices, and his 1983 article explains the intimate connection between the Kaluli drum and its performance practices and bird themes and song. Finally, Feld (1984) draws further analogies between Kaluli music and sociocultural elements.

Related Disciplines

The theoretical framework for this study also includes elements from anthropology, empirical science, Jungian psychology, fieldwork, music performance, ethnomusicology, and comparative process. The following sections discuss the literature relevant to these areas.

Man and His Symbols, first published in 1964, is Carl Jung's last psychological work before his death in 1961. With an introduction by Jung, it is a compilation of articles about symbology, four of which were written by Jung's associates. It addresses the use of symbols in the visual arts, the definition of symbols, and the archetypical symbols found in many cultures, both old and new. Levi-Strauss, a structural anthropologist, wrote many books regarding totemism, primitive belief systems, and myth including *The Savage Mind* (1972), *Totemism* (1973), and *Myth and Meaning* (1995). He argued that a culture was a system of symbolic communication and that myths

could be broken down into their fundamental units, which he called mythemes.

In terms of research methods applied in this study, Ragin (1987) discusses the use and methodology of case studies, and Endelman (1997) gives an excellent example of comparison, albeit from a discipline other than those underlying this study. The fieldwork for this thesis required interviewing abilities, which are discussed in Seidman (2006).

Birds and Music in Other Cultures

Other cultures worldwide depict a relationship between music and birds through myth, instrument construction, interval preferences, and other performance practices. The Native American siyohanka flute and its legend of origin are described in many references, including Erdoes and Ortiz (1984). Feld has done extensive research on the relationship between birds and Kaluli music, as mentioned previously, and Picken (1981) discusses the tetrachord prevalent in Chinese music and his belief that it may stem from the song of the cuckoo bird.

Other authors discuss the origins of music in general and the effect birdsong may have had on early man's creation of music. These include Gray, Kraus, and Atema (2001), "The Music of Nature and the Nature of Music," and Head (1997), "Birdsong and the Origins of

Music." Fitch (2006) compares human music with different animal communication systems including birdsong.

Avian Research

In order to understand thoroughly the relationship between the bird and the didjeridu, I read scientific journals that address the mechanics and anatomy of avian respiration and song. The discovery of avian circular breathing in biological Western science occurred as recently as 1971, beginning with Schmidt-Nielsen's article "How Birds Breathe" in *Scientific American*. Other authors—including Lasiewski, King and McLelland, Powell and Schied, Freethy, Dyce, Proctor and Lynch, Frederickson, and Whittow—discuss the mechanics and uniqueness of the avian respiratory system. Furthermore, Fitch (1999) discusses possible causes and reasons for the unique physiological tracheal elongation that occurs in some species. This study is relevant to this thesis because the magpie goose of North Arnhem Land is one of the species that has an elongated trachea.

The science of birdsong also made great strides in the late 20th century. This progress includes the comprehensive work of Suthers regarding motor control and mini-breaths in birdsong. In addition, such books as Catchpole and Slater's 1995 *Bird Song: Biological Themes and Variations*, Marler and Slabbekoorn's 2004 *Nature's Music: The Science of Birdsong*, and Mindlin and Laje's 2005 *The*

Physics of Birdsong offer relevant information about the mechanics of birdsong and how it is produced physiologically in a bird's body. Other authors of scientific articles about birdsong include Beckers, Konishi, and Franz and Goller. Finally, Fletcher (2006), Tarnopolsky and Fletcher (1999), and Reed, Suthers, Fletcher, and Blevins (2006) provide acoustic information about birdsong.

Shingon Buddhism and the Ryōkai Mandala

Shingon Buddhism and its tenets directly relate to the shakuhachi's presence in the Ryōkai mandala. Authors of books about Shingon, or Japanese Mantrayana Buddhism, include Yamasaki (1996), Yamamoto (1987), and Rambach (1979). Yamasaki (1996) and Yamamoto (1987) discuss this religion in detail. *Tantric Buddhism in East Asia* (2006), edited by Payne, includes articles about the history of Tantric Buddhism in Japan, Korea, and China. Rambach (1979) discusses many elements of Shingon Buddhism. Furthermore, many books about Kūkai, the founder of Japanese Shingon Buddhism, discuss the elements of Shingon Buddhism. These include Abe's (1999) book that includes English translations of some of Kūkai's major works with commentary by Hakeda, and Shiba and Takemoto (2003).

Reischauer (1995), *Ennin's Travels in T'ang China*, discusses Ennin, a Tendai Buddhist priest who played the shakuhachi with

shōmyō chanting and studied the Ryōkai mandala in China. In addition, Ikkyū was a well-known Zen monk who was one of the first to refer to the shakuhachi in his poetry. Arntzen (1973) offers multiple examples of Ikkyū's poetry, and Sanford (1980) gives evidence of Ikkyū's connection to the Ryōkai mandala by direct reference in his prose works. The concept of upāya is discussed in Pye (2003), *Skilful Means: A Concept in Mahayana Buddhism*, and Siddham calligraphy is discussed in Stevens (1981).

Sawa and Sawa (1972), *Art in Japanese Esoteric Buddhism*; Izutsu and Ōmori (2002), *Sacred Treasures of Mount Kōya: the Art of Japanese Shingon Buddhism*; and Ishida (1987), *Esoteric Buddhist Painting*, all give overviews of the nature, purpose, and artistic elements of Shingon Buddhist art. Ten Grotenhuis' beautifully illustrated 1999 book *Japanese Mandalas: Representations of Sacred Geography* discusses the mandalas of various Buddhist sects in Japan. Moreover, Yamamoto (1980), *Introduction to the Mandala*, and Chandra (1971), *The Esoteric Iconography of Japanese Mandalas*, provide extensive information about the Ryōkai mandala and its history, meaning, and symbology. In addition, Mammitzsch has written a number of books about the Ryōkai mandala, including the 1981 *The Ryōbu Mandara of Shingon Buddhism in Religious and Historical Perspective* and the 1991 *Evolution of the Garbhadhatu.*

Further, Snodgrass (1988) is an exceptionally comprehensive book on the subject. Numerous books written in Japanese about the Ryōkai mandala offer excellent pictures from many stages of the mandala's history. These include Ishimoto (1978), *Eros and Cosmos in Mandala;* Ishida's *Mandara no Mikata* (1984), *Ryōkai Mandara no chie* (1979a), and *Mandara no kenkyu* (1979b); Ōmura (1973), *Sanbon ryobu Mandara*; and Toganoo (1926), *Mandara no Kenkyu*.

The Mahavairocana sutra, the written text that gives direction about how the Ryōkai mandala was to be painted, was translated into English by Yamamoto in 1990. Books that speak specifically about the deity Karura (Garuda) include Bakshi (1979), *Hindu Divinities in Japanese Buddhist Pantheon*, and Chadhuri (2003), *Hindu Gods and Goddesses in Japan*. Nagar (1992) speaks about Garuda in multiple cultures, and Waterbury (1952) focuses primarily on ancient bird motifs evident in plastic art forms.

Zen Buddhism and its influence on Japanese art forms are significant to the shakuhachi's history because the shakuhachi has been a tool of Zen at least since the Edo period Fuke sect. Suzuki (1959) and Hasumi (1962) both discuss the effects Zen Buddhism has had on Japanese art forms. Further, Carter (2001) is a study about how Shintoism, Buddhism, Confucianism, and Zen Buddhism affect Japanese cultural values and ethics while Finney (1991) discusses

Zen's infusion into American society, an issue related to shakuhachi transplantation to America.

Ancient Chinese Music

Needham's colossal *Science and Civilization in China* (1962) addresses in detail many elements of China's early culture. Volume IV has a large section (written with Robinson) on ancient Chinese acoustics and Chinese music theory. It examines in depth the ancient Chinese concept of chi in relationship to acoustics, classification of sounds by pitch and timbre, and the development of the pentatonic scale. It also includes the legend of the origin of the original twelve tones of the Chinese scale from the ancient bird fènghuáng, the significance of bamboo in ancient Chinese culture, and the use of pitch pipes both musically and as a method of measurement. In addition, Temple and Needham (1991), *The Genius of China: 3,000 years of Science, Discovery and Invention*, has a chapter on ancient Chinese music, as does Wellesz (1957), *Ancient and Oriental Music*. Finally, Kuttner (1969) discusses China's early musical concepts, and Brindley (2007) examines in detail the importance and meaning of Chinese cosmology to the concept of music in ancient China.

The chapter in May (1983) by Han and Mark discusses acoustic theory in Chinese history, beginning with the earliest records, and explains the mythical origin of music and the tones given by the

mythical bird fènghuáng. Kárpáti (1980) also discusses the ancient legend in "Myth and Reality in the Theory of Chinese Tonal System." Sterckx (2000) discusses the early relationship between animals and music in ancient Chinese thought, and a large section of Modirzadeh (2001) discusses ancient Chinese music theory, as does Kuttner (1965).

In the ancient cosmology of China, astronomy, astrology, music, and mathematics were intimately related. Books on Chinese astronomy and astrology include Aylward (2007), *The Imperial Guide to Feng Shui and Chinese Astrology*; Ho (2003), *Chinese Mathematical Astrology: Reaching Out to the Stars*; and Sun and Kistemaker (1997) *The Chinese Sky During the Han: Constellating Stars and Society*. Finally, Kelley and Milone (2005), *Exploring Ancient Skies: An Encyclopaedic Survey of Archaeoastronomy*, explains the link between the *Taizōkai* mandala and ancient Chinese Astronomy.

Conclusion

Some recent organological studies have included the study of an instrument's sociocultural, mythic, and symbolic meanings in addition to its physical construction and morphological properties. This expansion within the field allows a far more detailed and comprehensive understanding of an instrument's meaning and an opportunity for deep examination of the paradigmatic relationships

among its performance practices, cultural use, mythic associations, symbols, and construction. My findings add to this body of knowledge by examining historical and contemporary iconology, using a holistic approach that includes additional disciplines to uncover new and notable understandings of both the didjeridu and the shakuhachi.

Section II

Relevant Background Information

This section provides pertinent background information for this study, offering a foundation of information compiled but not original with the researcher. Chapter Four discusses the use of bird analogies in cultures other than the Northern Territory and Japan. Chapter Five explains the mechanics of avian respiration and song. Chapters Six and Seven provide comprehensive overviews of the didjeridu and the shakuhachi, respectively.

Chapter Four – The Bird and Music Worldwide

Introduction

Birds are associated with specific instruments in a number of cultures throughout the world. These include the Native American flute siyohanka, the Kaluli drum *ilib,* the Middle Eastern ‘ud*,* and the ‘Are’are transverse flute ‘au porare. Archaeological remains in Europe and China have produced examples of flutes made from bird’s bones. In addition, some cultures depict relationships between birds and the concept of music. For example, the Kaluli people of Bosavi, New Guinea, base the primary elements of their musical culture on the bird (see Feld, 1981, 1983, 1990) and Picken has suggested that the prominence of the tetrachord in Chinese music originates from the

cuckoo bird. The following explores a few of these relationships between instruments and birds worldwide, thereby demonstrating that the relationship between the bird and music is not exclusive to the shakuhachi and the didjeridu.

Ancient Flutes and the Bird

The earliest flutes have a direct physical relationship to birds. Bird bones lend themselves extremely well for use as a wind instrument because of their strength and essentially hollow structure. Fragments of bird bone flutes have been recorded from the Upper Palaeolithic in Europe, and the world's oldest flute, found in the Geissenklosterle Cave in southern Germany, was made 35,000 years ago from a swan's wing bone. Also, ancient flutes made of the ulnae of the gryphon vulture have been discovered in France and the Czech Republic (Picken 1981: 227). Flutes made approximately nine thousand years ago from the wing bones of cranes have been discovered in China. This early use of bird bones to construct flutes in separate cultures around the world indicates an ancient tie between birds and flutes in a morphological context.

Native American Flute and the Bird

The Native American flute, or siyohanka, is directly related to the bird in origin, myth, and design. The legend below, told by Henry

Crow Dog in 1967, describes how the Native American flute was given to man by the bird. It is part of Brule Sioux Lore (Erdoes & Ortiz 1984: 275-278):

> The flute is always made of cedarwood. In the shape it describes the long neck and head of a bird with an open beak. The sound comes out of the beak, and that's where the legend comes in, the legend of how the Lakota people acquired the flute. Once many generations ago, the people had drums, gourd rattles, and bull-roarers, but no flutes. At that long-ago time a young man went out to hunt. He strayed farther than he expected and spent the night in the forest. Suddenly there was an entirely new sound, of a kind neither he nor anyone else had ever heard before. It was mournful and ghost like. The sound was like a song, sad but beautiful, full of love, hope, and yearning. He fell asleep, and dreamed that the bird called *wagnuka*, the redheaded woodpecker, appeared singing the strangely beautiful song and telling him, "Follow me and I will teach you."
>
> When the hunter awoke, the sun was already high. On a branch of the tree against which he was leaning, he saw a redheaded woodpecker. The bird flew away to another tree, and another, but never very far, looking back all the time at the young man as if to say, "Come on!" Then once more he heard that wonderful song, and his heart yearned to find the singer. Flying toward the sound, leading the hunter, the bird flitted through the leaves, while its bright red top made him easy to follow. At last it lighted on a cedar tree and began hammering on a branch, making a noise like the fast beating of a small drum. Suddenly there was a gust of wind, and again the hunter heard that beautiful sound right above him. Then he discovered that the song came from the dead branch that the woodpecker was tapping his beak. He realized also that it was the wind that made the sound as it whistled through the hole the bird had drilled.
>
> "*Kola*, friend," said the hunter, "let me take this branch home. You can make yourself another." He took the branch, a hollow piece of wood full of woodpecker holes, that was about the length of his forearm. He walked back to his village bringing no meat, but happy all the same.
>
> In his tipi the young man tried to make the branch sing for him. He blew on it, he waves it around, no sound came. It

made him sad, he wanted so much to hear that wonderful new sound. He purified himself in the sweat lodge and climbed to the top of a lonely hill. There, resting with his back against a large rock, he fasted, going without food or water for four days and nights, crying for a vision which would tell him how to make the branch sing. In the middle of the fourth night, *wagnuka*, the bird with the bright red top, appeared, saying "Watch me," turning himself into a man, showing the hunter how to make the branch sing, saying again and again "Watch this, now." And in his dream the young man watched and observed very carefully.

When he awoke, he found a cedar tree. He broke off a branch and, working many hours, hollowed it out with a bowstring drill, just as he had seen the woodpecker do in his dream. He whittled the branch into the shape of the bird with a long neck and open beak. He painted the top of the bird's head with washasha, the sacred red colour. He prayed. He smoked the branch up with incense of burning sage, cedar, and sweet grass. He fingered the holes as he had seen the man-bird do in his vision, meanwhile blowing softly into the mouthpiece. All at once there was the song, ghost like and beautiful beyond words drifting all the way to the village, where the people were astounded and joyful to hear it. With the help of the wind and the woodpecker, the young man had brought them the first flute. All the other young men began to whittle cedar branches into the shape of bird's heads with long necks and open beaks. And that's how the flute was brought to the people, thanks to the cedar, the woodpecker, and this young man, who shot no Elk, but knew how to listen.

The above legend depicts the direct and intimate relationship between the siyohanka and the bird in the Native American culture, both in terms of its origins and its physical construction. The siyohanka physically and visually depicts similarities to avian anatomy. The Figure 4-1 shows how siyohanka flutes, even today, are crafted to include elements of avian physiology, including eyes and beaks. Further research shows how similar a bird's anatomical design

is to the flutes: the syrinx is analogous to the player's embouchure, the trachea to the flute's body, and the beak to the flute's end hole (see Figure 4-1).

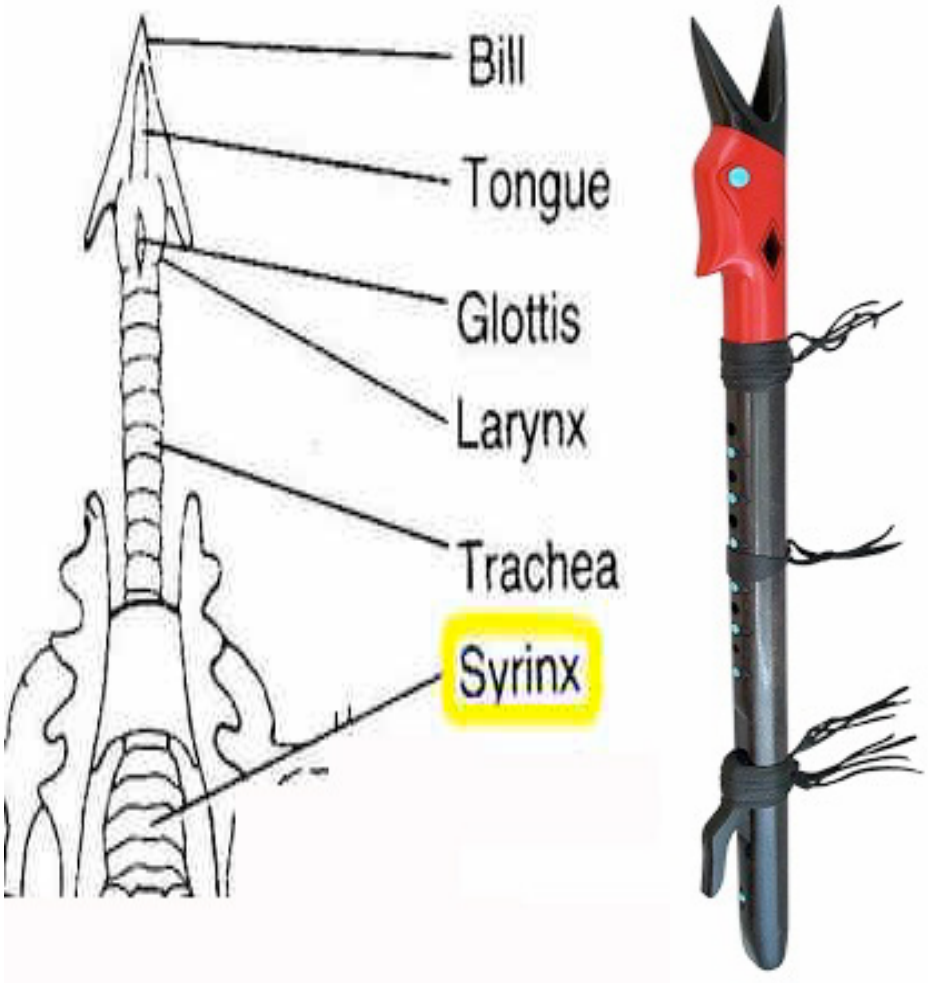


Figure 4-1: The relationship between the anatomy of the syrinx, trachea, and beak of the bird and the design of the Native American flute. (photo of flute, L. Rubin, diagram of avian anatomy http://www.birdwatching-bliss.com/bird-song.html used with permission)

Both the Native Americans and the Australian Aborigines venerated their ancestors and the natural world. Both cultures historically contained many tribes or clans who lived semi-

nomadically, with few buffers between them and the natural world that both surrounded them and affected their lives. It is, therefore, not surprising that both used avian elements in their instrument design, symbolism, and myth.

Kaluli People and the Bird

The Kaluli people of the central Bosavi area live in a remote portion of the jungle in Papua, New Guinea. Before the missionaries arrived, these people were traditionally animistic and are ardent ornithologists, very adept at identifying and locating birds by sound (Feld 1990: 30). The Kaluli base their musical tradition upon the bird, and Kaluli ornithological taxonomy is deeply symbolic. As Feld writes:

> The most impressive part of Bosavi ornithology is the degree to which Kaluli people construct culturally metaphoric ideals from natural historical observations that are accurate in their zoological minutiae.
> . . . . . .
> Kaluli ornithology is not a one-dimensional rigidly ordered taxonomic hierarchy, but a set of images about bird behaviour, morphology and particularly sound. (Feld 1990: 30, 218)

The integral and intimate relationship between the bird and Kaluli music shows itself in the melodic and textual elements of their song, the visual attributes of their dance, and the attitudes and thoughts within the culture, which deeply connect the bird to the creative musical expression. Kaluli poetics, integral to song, are considered bird language (Feld 1990: 34). There are two elements

that make up a song: sound and text. The sound is "bird sound" and the text is "bird sound words": bird sound plus bird-sound words equal song (Feld 1990: 219). The conceptualization of song as bird sound and bird talk, however, is only part of the overall importance of birds as an integral aesthetic element in Kaluli music. Thinking about birds inspires song, and when performed, song is sung in a bird voice. Men wear bird feathers to make themselves beautiful and evocative, and dance is patterned as bird movement. Specific staging prepares the audience to see the performer as a lone bird (Feld 1990: 220). When people are moved to tears by the song, they are said to have heard the voice of someone who has become a bird or the words inside the song as the call of a bird.

Kaluli vocal song forms and drum performance practice are directly related to specific musical elements of particular birds' songs. The vocal song form *gisalo,* which appears both in ceremony and as the song vehicle of spirit medium séances, denotes an intimate relationship between the pitch movement in birdsong and its melodic organization. *Gisalo* is a distinct song form in a specific pentatonic mode. The music includes a three- or four-pitch descending melodic contour that copies the *muni*, or beautiful fruitdove (*Ptilinopus pulchellus*), which has two calls, one of which has slow, distinct descending pitches (Feld 1990: 31). In addition, the dramatic

performance using song, dance, costume, and weeping presents the *gisalo* performer "in the form of a bird" (Feld 1990: 37).

The Kaluli drum *ilib* has extremely close ties to the bird in its construction and performance practices. In Kaluli culture

> The single most important fact about the drum sound, and the single most important trope for all Kaluli aesthetic action—is bird mediation. . . Each feature of performance, context, staging, and sound leads back to this central notion: through the mediating scheme of bird transformation, Kaluli expressive behaviours are metaphorically empowered to communicate social ethos and emotion. (Feld 1983: 87)

Feld explains how *ilib* performance practices directly imitate a particular native bird, the tibodai, or Papuan Bellbird. This bird's song consists of a long series of identical notes of the same pitch at equal time intervals, is extremely long, and has an unusual throbbing quality. Although it is not loud, its song can carry for long distances (Diamond as cited in Feld 1983: 82). Feld writes:

> These qualities, equal pulsation at the same pitch, extraordinary length and consistency, throbbing quality, and resonant carrying power are in fact the most desired acoustic properties of the drum. (Feld 1983: 82)

Like the Native American and the Australian Aboriginal cultures, the Kaluli are a society deeply connected to the natural world around them. Multilayered perceptions of birds indicate interplay between what Kaluli know from their observational and practical experiences as hunters and naturalists and the avian elements in their music. Feld comments:

> If it is true that Kaluli expressive forms are constituted by analogies with nature, then it follows that the relations among bird perception, classification, symbolism, and inspiration underlie the meaning of bird sound metaphors in the form and performance of weeping, poetics, and song. (Feld 1990: 43)

The Chinese Tetrachord and the Cuckoo Bird

Picken also explored the relationship between musical performance practices and birdsong. He states, "The work of Feld has shown undeniably . . . that man does learn music, on occasion, from birds" (Picken 1981: 246). Picken notes the widespread use of the fourth as a melodic unit by the ancient Greeks and other peoples of Eurasia and inquires into possible origins of the tetrachord (Picken 1981: 229). He posits:

> Imitation of the cuckoo bird is one possible source of the tetrachordal melodic units so conspicuous in the vestiges of the music of Ancient Greece, and perhaps of that unit throughout Eurasia. (Picken 1981: 246)

Picken believes the tetrachord may have developed from ancient imitation of the birdsong of three specific birds, all of whose calls give prominence to the interval of a fourth. He states:

> We are aware of only two possible sources from which this musical idea of the tetrachords might have been derived: as imitation of a birdcall, such as that which accounts for the ritual song of the Kaluli people . . . . In Greece three possible avian candidates susceptible of human imitation have been known since ancient times: the cuckoo, the hoopoe, and the hoopoe lark. (Picken 1981: 233)

Picken argues that the cuckoo was the most probable source because its descending song goes from a minor third, to a major third, and then to a perfect fourth, or a chromatic tetrachord. If the sound of the cuckoo influenced the music of ancient Greece, birds may have influenced music throughout Eurasia. Picken asserts:

> This is surely firm evidence that the falling fourth of the cuckoo's call has musical implication for a musician's ear. There is no reason to doubt the reality of this fourth as a significant musical unit, perceived as a fourth by Man, sung by a commonly unseen bird. (Picken 1981: 243)

Picken cites the ancient Korean song "Cuckoo," for voice, hourglass drum, and clapper, as an example of a musical piece possibly influenced by the cuckoo's song in its melodic features and song text. The earliest known popular song of its type, it may also be the oldest song for which an accurate date can be established. The song contains in its melody descending open fourths and descending fourths with minor thirds (Picken 1981: 241). The song also accurately produces the relative lengths of the two syllables of the cuckoo's song. The name of the bird, which is mentioned in the song text, is used as the title of the song (Picken 1981: 242).

Picken suggests an additional historic relationship between the fourth and avian elements, this time between the tetrachord in ancient Greek music and early folk flutes made of avian bones. In the tenth to twelfth centuries, some flutes of Northern Europe were made

of swan and crane bones. The three finger holes usually played quasi-tetrachordal note groups with intervals of varied size (Picken 1981: 227). In practice, a flute of this type would have been overblown to the first harmonic, the octave, and then to the second harmonic, the fifth. The same flute could play an octave consisting of two tetrachords separated by a tone of disjunction. This means that any tetrachord could have been converted to an octaval note set by the physical properties of the flute (Picken 1981: 227). A pipe with a beating reed, single or double, would not be able to generate an octave from a single tetrachord in this manner. Folk bone flutes, therefore, might have opened the way in Greek musical culture to an early experience of different types of tetrachordal and octaval structures (Picken 1981: 228).

Additional Avian Relationships: The ʻUd and the ʻAu Porare

The Middle Eastern lute, the ʻud, has avian associations in its construction, mythic origin, and performance practices. The myth describing the ʻud's origin explains:

> In the making of the ʻud . . . the transmission of music from the "moaning" of the bulbul (bird) to the tree, which then, slain by men, was able forever to render the songs that it had learned from the birds. (Grame 1972: 28)

This myth is not only figurative but also literal because the plectrum of the ʻud is made from the claws of a bird. Grame notes "thus the

bird in one sense does sing on the strings of the lute in reality as well as in fancy" (Grame 1972: 28). Further avian symbology link the 'ud to a specific bird, again the cuckoo. In the Finnish epic "The Kalevala," the hero Wainamoinend constructs tuning pegs for the 'ud from the gold and silver tones of the cuckoo (Grame 1972: 28).

The 'Are'are people live on the island of Malaita in the Solomon Islands. Both the name and the sound of their transverse flute 'au porare is intimately related to birdsong. Made of bamboo, the name of the instrument comes from the bird *porare (porphyrio porphyrio*) (Zemp 1978: 43-44). According to 'Are'are myth, the 'au porare flute was invented by man to imitate the cry of the *porare* birds. Its purpose was to attract and kill the birds because they were stealing from his garden (Zemp 1978: 50).

Conclusion

Imitation of birdsong in melodic song structure and performance technique and the use of bird motifs in instrument construction are evident in cultures differing greatly geographically and culturally. Myths and legends depicting the origin of the flute, instrument design depicting avian influence visually and morphologically, the prominence of the tetrachord, and the ancient use of avian bones to make flutes give further evidence of this close tie worldwide between the bird, birdsong, music, and musical instruments.

Chapter Five – Avian Respiration and Song

Introduction

This chapter describes elements of the bird's respiratory system and song relevant to my findings. The first section explains how the bird's respiratory system works and how it compares to mammalian tidal breathing, and the second describes the bird's method for producing song and how it is similar to a wind player's use of air.

The Avian Respiratory System

The avian respiratory system is the most efficient breathing system in the entire animal kingdom. It is different in both large and small details from all other land vertebrates. Almost every part of a bird's body directly communicates with the avian system of air sacs, nine thin-skinned balloon-like sacs that are an anatomical attribute unique among

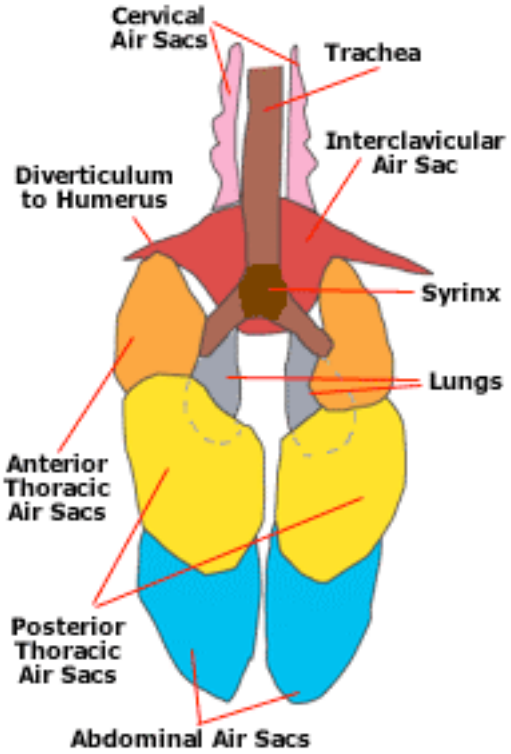


Figure 5-1: The avian air sac system.
(© 2010 Foster & Smith, Inc. Reprinted as a courtesy and with permission from DrsFosterSmith.com (http://www.DrsFosterSmith.com)

vertebrates (see Figure 5-1). In addition, the bones of birds are pneumatic (contain air, not marrow) and these air spaces are connected to the respiratory system (Schmidt-Nielson 1971: 73). The total volume of the respiratory system in a bird is far larger than that in a similarly sized mammal. The avian respiratory system allows a continuous stream of air to pass through the lungs in a very efficient one-way flow, or circular breathing. Blood percentages of oxygen and carbon dioxide are similar in birds and humans, but efficiency of oxygen uptake is far greater in the avian lung than in the mammalian (Kamaka, pers. comm., 2007).

Mammals use their diaphragm to power inspiration and expiration, but birds do not have a diaphragm: air is moved in and out of the respiratory system through pressure changes in the air sacs. Birds ventilate their air sacs by moving their keeled sternum in a dorsal-ventral plane to create a bellows-like movement of air into and out of the air sacs (Codd et al. 2008: 161). Expiration is not passive, but requires certain muscles to contract to increase the pressure on the air sacs and push the air out. The air sacs act as bellows to ventilate the lung (Whittow 2000: 234). Birds have small lungs (only two percent of the bird's body volume), which do not expand and contract during the breathing cycle as ours do. A bird's lung is much firmer and not collapsible like a mammalian lung (Schmidt-Nielsen

1971: 76). Avian muscles work opposite to the mammalian: the lungs expand on exhalation and diminish on inhalation.

Avian Circular Breathing

While mammals move air in and out of the lungs through the same pathway, a process called tidal flow breathing comes into operation. A bird's respiratory system allows a continuous stream of air to move in a very efficient one-way flow, called circular breathing, which fills the avian body with fresh oxygen throughout the breathing cycle (Schmidt-Nielsen 1971: 76). The bird's unique circular breathing was first discovered in the early 1970s. Until then, the details of the avian respiratory cycle were a mystery to modern science (Janes, pers. comm., 2008). One complete breathing cycle includes two inhalations and two exhalations. In the first inhalation, the breath of air flows through the trachea and syrinx (vocal organ) into the right and left bronchi. In the trachea the fresh air is mixed with any remaining air left from the previous exhalation. The bronchi pass the air directly through the lung into the posterior air sacs in the abdomen (Schmidt-Nielson 1971: 75). These abdominal air sacs expand on inhalation, acting as bellows to pull in the breath.

During the first exhalation, the abdomen contracts and forces the air from the abdominal sacs into the lungs. Once in the lungs, the air passes through tiny air passages called parabronchi, where oxygen

and carbon dioxide are exchanged. On the second inhalation, the air in the lungs, now full of carbon dioxide due to the gas exchange, is driven out into the anterior air sacs.

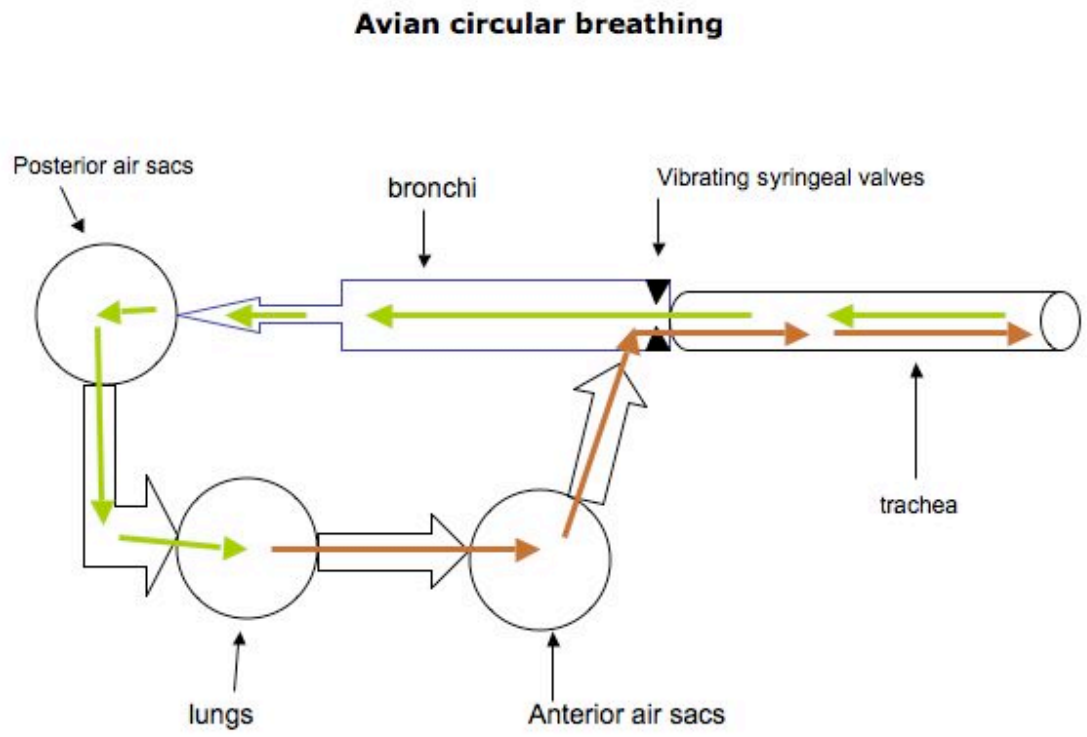


Diagram 5-1: Avian circular breathing.
(Diagram adapted from diagrams by N. Fletcher and S. Janes pers. comm. 2008. used with permission)

Simultaneously, the abdominal sacs again fill with fresh air. During the second exhalation, the anterior sacs contract, driving the air into the trachea, where it passes up and out of the body. This completes one complete respiratory cycle (Schmidt Nielsen 1971: 74-79: see Diagram 5-1).

Two groups of secondary bronchi, caudal and cranial, branch out to create fan-shaped coverings on the surface of the avian lung

(see Figure 5-2). These bronchi play an important role in channelling air through the lungs in the cycle of circular breathing.

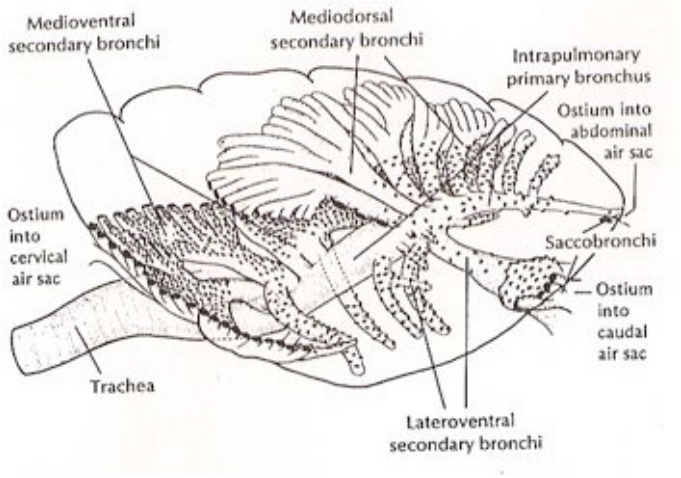


Figure 5-2. Fan-shaped avian bronchi. Sturkie's Avian Physiology, Powell in Whittow, figure 3 p. 236, "Bronchial arrangement in the left lung of the mute swan" © Elsevier (1965) used with permission.

Avian Vocal Production: The Mechanics of Birdsong

Bird vocalization includes both birdcalls and bird songs. Bird songs are longer and more complex than calls. The characteristics of birdsong are dependent upon the properties of vibration of the syrinx, the acoustical properties of the vocal tract, and the movement of the beak from which the sound is finally emitted (Beckers 2006: 454). The syrinx (meaning 'twin' or 'double flute' in Greek) is an organ devoted only to vocal production and is unique to birds. The bird also has a larynx, but unlike humans, the avian larynx is not involved in sound production. Situated in an air sac, the syrinx is a modification of the airway where the trachea and the bronchi meet inside the thoracic cavity. It consists of a bony framework, which contains vibratory structures, either labia or membranes, and muscles that

control the shape of the framework. The syrinx has anatomical similarities to human lips (Kamaka, pers. comm., 2007) and human vocal cords (Suthers, pers. comm., 2008). The airflow moves through the syrinx, induced by the action of the respiratory muscles, and produces sound waves when affected by the syrinx's vibrating structures. These waves go through the avian trachea and beak and out into the environment.

Different types of birds have different types of syrinx, and songbirds have the most sophisticated type. In fact, a songbird has two syrinx, located at the cranial end of each bronchus, each of which can be controlled independently of the other (Beckers 2006: 454). This two-voiced system can create two different sounds simultaneously. The two-part syrinx can also produce a continuous sound, alternating from one side of the syrinx to the other (Beckers 2006: 455). A bird can also sustain high syllable-repetition rates for long periods of time without taking a pause for normal inspiration. In order to do so, birds take a special kind of breath between each syllable during song called a *mini-breath*. This system allows the left side to continue to produce sound, for example, while the right maintains respiratory air supply, which increases the duration of the time the syllable repetition can occur (Beckers 2006: 455).

The fundamental frequency produced by a songbird is changed by the action of the syringeal muscles, which regulate the tension of the vibrating labia or membranes. In other words, a bird can raise or lower pitch by altering the tension and position of its syringeal membranes. Once created by the action of the air passing through the syrinx, these tones may be filtered by the vocal tract to become pure tones. Birds sing many phrases that are trains of pure sine waves without a harmonic spectrum of overtones (Greenewalt 1969: 126). The frequency of the sound can also be changed by alterations in the air sac pressure, controlled by the respiratory muscles (Beckers 2006: 455). The avian sound production system is, therefore, a source filter system wherein the syrinx creates the source vibrations and the vocal tract determines the amplitudes of the produced sound frequencies. The vocal tract does not, however, create complex phonetic patterns independently of the syrinx. The movement of a bird's beak can also adjust the frequencies to obtain the desired sound (Beckers 2006: 456).

Birdsong is the result of muscle coordination between the respiratory system and the vocal tract. Both the timing and the tempo of the song begin with the bird's respiratory cycle (Marler and Slabbekoorn 2004: 273). The muscles of the syrinx, acting conjunctively with the muscles that ventilate the respiratory system,

primarily control the timing and frequency of sound. Expiratory muscles compress the abdominal and thoracic air sacs to increase pressure so air flows through the syrinx, and song is created by the oscillation of the wall of the syrinx induced by the force of air through it (Marler and Slabbekoorn 2004: 273). Contraction of the syrinx's labial muscles creates changes in the size of the aperture of the passageway. Air flows across this aperture, which creates sound. Varying the tension or elasticity of these oscillating labia controls the fundamental frequency and its regulation. Achieving ideal respiratory pressure, and the correct configuration of the syrinx, requires monitoring of these variables by the bird as it sings. The bird adjusts the movement of the syringeal muscles to compensate for pressure changes during song.

As with wind musicians and human vocalists, respiratory air is an essential but potentially limited resource for song in birds because the volume of air available can limit the length of a desired note or phrase. Canaries, however, can sing in a seemingly continuous sound for up to a minute. During a single song, they may produce hundreds of syllables. To achieve this lengthening of a phrase, the bird uses mini-breaths to replace the lost air. Studies have shown the mini-breath replaces about the same volume of air that is exhaled to produce the syllable (Marler and Slabbekoorn 2004: 285). For this

reason, there is little-to-no net change in respiratory volume during a mini-breath song. Syllables, rather than whole songs, appear to represent the functional units of avian sound production (Marler and Slabbekoorn 2004: 280). By taking mini-breaths in between each syllable, songbirds sustain high syllable-repetition rates for over 30 seconds at a time without taking a pause for normal inspiration.

However, some birds use a different technique to sing longer songs, one that does not involve mini-breaths. Called *pulsatile respiration*, it is used for trills and does not require a reversal of airflow. Expiratory muscles continue to contract and maintain a positive pressure below the syrinx during the entire trill (Marler and Slabbekoorn 2004: 281). Although pulsatile respiration can double the maximum syllable-repetition rate possible, the column of respiratory air is depleted unlike the mini-breath method (Marler and Slabbekoorn 2004: 285). A third highly sophisticated breath technique used by songbirds is singing during inspiration as well as expiration (Marler and Slabbekoorn 2004: 286). Finally, the songbird is able to sing both dissonant and harmonic sounds by singing two overlapping notes simultaneously. These differ in pitch and may or may not be harmonically related to each other. The double tones require airflow through both sides of the syrinx as the muscles on each side alter in

tension to create unrelated sounds independently modulated in both amplitude and frequency (Marler and Slabbekoorn 2004: 286).

In addition, a bird has a more refined sense of hearing in terms of speed than a human (Greenewalt 1969: 134). Birds can hear trills and rapid modulations far better: a human's time discrimination is fifty to a hundred times slower than birds. Therefore, hearing the syllabic nature of some birdsong may elude us: though we can clearly hear a tremolo or trill with a frequency of thirty cycles per second, a trill faster than one hundred cycles per second only sounds like noise to us.

Avian Trachea

The avian trachea is composed of cartilaginous rings and smooth muscle. Tracheal volume is 4.5% larger in birds than in comparably sized mammals, creating more dead space within the bird's trachea. Birds compensate for this increased dead space with a deep and slow breathing pattern (Whittow 2000: 235). Large birds breathe more slowly than smaller birds. During respiration, a portion of the "used" air coming from the anterior air sacs remains in the trachea and, when mixed with the new fresh air coming in, ensures the right concentration of carbon dioxide. In this way, the avian lung is supplied with air that is high in oxygen without being too low in carbon dioxide.

One particularly interesting and unusual feature of certain birds, including the magpie goose from North Arnhem Land, is an elongated trachea. The trachea of the magpie goose is 150 centimetres long and coiled within its sternum. This length is more than triple the trachea of a similar-sized goose, like the Canada goose and the Snow goose, which have trachea of 44 cm and 35 centimetres respectively. Various hypotheses have sought to explain the cause of an elongated trachea. A probable reason is that it increases the formants of a bird's sound. For most birds, the length of the trachea is proportional to body size (Hinds and Calder 1970: 438). Therefore, tracheal elongation creates formants associated with a larger bird, which makes the magpie goose sound like a much bigger bird than he actually is (Fitch 1999: 42).

Conclusion

The uniqueness, efficiency, and air utilization of avian respiration and song make the bird unsurpassed in the entire animal kingdom in these areas. Its use as a symbol of sophisticated breathing practices is, therefore, understandable. Because the bird is the only animal that has feathers, motifs of feathers make excellent avian symbols. Using this chapter as a foundation, discussions of the similarities between avian respiration and song and shakuhachi and didjeridu breathing practices are presented in the following chapters.

Chapter Six – The Didjeridu of the Northern Territory

Introduction

The didjeridu is a straight end-blown trumpet, originally made from indigenous bamboo and more recently of indigenous eucalyptus naturally hollowed out by termites. The instrument plays an extremely important role in Northern Aboriginal society both culturally and spiritually. The didjeridu is used traditionally to accompany both sacred and secular music, and its primary purpose is to accompany the Songman. The didjeridu has a variety of unique playing techniques. In addition, the performance practices of the didjeridu are without precedent or parallel in any other oral culture of the world (Jones 1973: 269). Through musical creativity and innovation, an instrument made of natural materials and with a simplistic design can become a virtuoso instrument, capable of great varieties of timbre, rhythm, and vocal tone colour (Jones 1955: 462). This chapter offers an overview of the history, performance practices, myth, and cultural elements relating to the didjeridu.

The Environment

The instrument is found indigenously only in the northern part of Australia, and as recently as one hundred years ago, it had a restricted distribution in Australia. The didjeridu exists in its

indigenous form in communities from Roebourne in Western Australia, the Kimberly, the Arnhem Land peninsula, and east to the Cape York area of Queensland (Jones 1973: 269). Didjeridus were originally only located where the bamboo and the trees that were used to create them grew naturally and in contact or trading zones (Neuenfeldt 1993: 3).

The top end of the Northern Territory, the plateaus and their coastal lowlands, offers a complex range of habitats for the region's species. The area contains some of the most important tropical wetlands in the world. More than 1500 species of plants have been recorded in a range of tropical habitats including mangrove, monsoon forest, tropical grassland and woodland.

The rivers and reeks are the lifeblood of the region (Chaloupka 1999: 36). The region's physical dichotomy of plateau and plain is mirrored in its climate, which is affected by two alternating monsoons. The Northwest winds in November bring the rainfall of the wet season, and Southeast winds bring the dry season in April (Chaloupka 1999: 37). Members of at least twenty language groups populated the Arnhem Land Plateau region and the adjacent coastal lowlands at the time of the first European contact (Chaloupka 1999: 70).

The region also features a wide variety of birdlife (over 270 species). Over one in three of Australia's bird species have been sighted in the region. It is a refuge for water birds, which were once widespread throughout Australia. Floodplains flank the major northern rivers and creeks. In the wet season, rushing floodwaters overflow into the estuaries, and the whole area becomes a vast reservoir. During this time of year, the waterholes are filled with huge numbers of birds (Chaloupka 1999: 35). At the height of the floods, the magpie geese build their nests in the clumps of spike rushes. Later in the year, as the waters recede, the geese congregate by the hundreds of thousands in the drying swamps and feed and fatten on the new accessible onion grass (spike rush corms, *Eleocharis* sp.).

Didjeridu Origins and Morphology

Chaloupka states plainly that the didjeridu originated in the coastal lowlands adjacent to the Arnhem Land Plateau (Chaloupka 1999: 189). It then moved into the Kimberley and Pilbara regions of Western Australia and to the east along the Gulf of Carpenteria and into Queensland (Chaloupka 1999: 189). The first didjeridus were made of indigenous bamboo (*bambusa arnhemica*), which grows plentifully in the Western Northern Territory. According to Moyle:

> The suggestion here is that the first didjeridus were of bamboo; and that because of the availability of bamboo in the north-western region of the Northern Territory, the first didjeridu

> players may well have belonged to that region. (Moyle 1981: 322)

Bamboo didjeridus were popular and numerous in the Northern clans as late as the nineteenth century: the word *bamboo* was still used as late as the 1960-70s as a name for the instrument (Moyle 1981: 322). Fifteen-hundred-year-old rock art from Western Arnhem Land depicts didjeridus with transverse bands, which may represent nodes of bamboo, although these may only be decorative (Chaloupka 1999: 189; see Figure 6-1).

Figure 6-1: Didjeridu with striping, possibly indicating bamboo nodes. (Chaloupka 1999: 189 © New Holland Publishers. used with permission)

The first didjeridus seen and collected by Westerners are from the Western Arnhem Land region. Most of these are *Bambusa*

arnhemica specimens collected from the Coburg Peninsular area, where the first European settlements were established in the 1800s.

One of the earliest European accounts of the didjeridu is from Raffles Bay, Northwest Arnhem Land, in 1835. The instrument was described as being made of bamboo and about three feet long. In 1846 a mariner named John Sweatman noted, "They have a kind of musical instrument made of a bamboo pipe about three feet long and one to two inches in diameter from which they draw a succession of monotonous but not disagreeable sounds" (Parker 2003: 11). In 1893 R. Etheridge, Jr., wrote that the didjeridus he observed were made of bamboo and that "the trumpets were 'probably made of (the species) *B. arnhemica* . . . and appear quite difficult for the uninitiated to blow'" (Moyle 1981: 322). Charles Percy Mountford made some of the first recordings of the didjeridu in 1948. In 1951 Collin Simpson, a radio journalist made the following observation of the didjeridu played in a traditional context:

> Now the didjeridu-man has come in, and he sits down beside the Songman. He stretches out one thin black leg and spreads his big toe wide from his other toes. The end of the didjeridu projects just beyond the end of his rested foot and is about two and a half inches across, bigger than the other end, which he raises to his mouth. The didjeridu is wet; he has poured water down the hollow wooden tube to give it better tone. About a quarter of its length is painted red-black-red-black in narrow rings, the rest is unpainted wood, smooth from its use in many hands . . . the didjeridu-man's lips are lost in the instrument, his cheeks and his chest rise and fall. The vibrant drone of the didjeridu winds out and through the Songman's chant. (Parker

2003: 11)

Based on descriptions of the instrument by 19th century explorers, and the use of the name *bamboo* to refer to the instrument in the Aboriginal lingua franca of the area, it is probable that didjeridus were constructed of bamboo for much of its fifteen-hundred-year history.

Bamboo was originally used as the preferred material to construct didjeridus because the bamboo was softer and easier to cut with stone tools than hardwood. In 1893, Etheridge wrote that "the very curious trumpets" were made from bamboo with the centres removed, probably removed by live coals being dropped down the middle of the stalk (Moyle 1981: 322). A dry length of the bamboo was first cut or broken off and then burned at both ends. The ends were made smooth using the surface of a rock. The nodes along the bamboo were pierced with a stick to create a hollow tube. There are only two species of bamboo native to Australia, and of these only one, *bambusa arnhemica,* is wide enough in diameter to be used for a didjeridu. This type of bamboo is also called *mole*, another Aboriginal name for the didjeridu used by the Gundjeihmi of Western North Arnhem Land (Chaloupka 1999: 325; Lister 2002: 1).

The wooden didjeridu may also have been made in the past, although they probably became far more common after contact with the Macassan and the West, who introduced the Aborigines to steel

tools that made cutting the wood far easier than using stone (Chaloupka 1999: 189). The wooden instruments are more durable than the bamboo and less susceptible to cracking. They are made of eucalyptus wood that is naturally hollowed out by termites (Moyle 1981: 322). The termites nest in the branches of these trees, eating the wood from the inside out. Only certain eucalyptus species house the termites, and of the eucalyptus species indigenous to North Arnhem Land, only half a dozen types are eaten by the termites and can be crafted into didjeridu. The most common trees are the stringybark (*Eucalyptus tetrodonta*), the woollybutt (*Eucalyptus miniata*), red river gum (*Eucalyptus camaldulensis*), ironwood (*Erythrophaeum laboucherii*), and bloodwood (*Eucalyptus gummifera*). After the branch is removed from the tree, the didjeridu is stripped of its outer bark and the inside is further scraped out with metal tools to improve the tone of the instrument. Today, wooden didjeridus are the norm, and in fact bamboo didjeridus constructed from *Bambusa arnhemica* are quite rare and difficult to obtain.

Onomatology

Although currently, in worldwide use, the most common name for this Australian end-blown trumpet is the *didjeridu* (or *didgeridoo*), the instrument has at least forty Aboriginal names in its indigenous homeland. There are almost as many different Aboriginal names for

the didjeridu as there are specific Aboriginal language groups in the areas where the instrument is indigenously found (Moyle 1981: 322). Through tradition and language variations, individual Aboriginal clans have used different names for the didjeridu. Some names are dialectically similar to a language group's names for bamboo, including *yiraki*, *didjeridu*, and *yidaki*.

Yirdaki is one of the most internationally well-known Aboriginal names for the didjeridu. Northeast Arnhem Land yirdaki playing styles have received the majority of international study and exposure of traditional didjeridu music. The orthographically correct spelling of *yirdaki* is "yirdaki" or "yidaki," but not "yidaki." The *rd* or *d*, a phoneme in the Yolngu languages, is absent in English and requires retroflexion of the tongue in order to articulate. Stress falls on the first syllable of the word, not the second (Lim 2000: 1).

The history of the name *didjeridu* is unclear, although it has been generally accepted that it was created as an onomatopoeic word, the early white Australian settlers basing the name on certain "mouth sounds" (Moyle 1978: 7). Mouth sounds can be defined as a mnemonic device of metered vocalisation, similar to South Indian *solkattu* (rhythmic solfege) and North Indian *tabla bols*, and are used as tools for learning and remembering complex song patterns. It has been suggested more recently, however, that the name *didjeridu* may

instead have Gaelic origins, derived from the Gaelic word *dudaire* or *duidire*, which means trumpeter or puffer (Lonergan 2002). Both Irish and Scottish Gaelic include the word *dudaire*, which is pronounced "dooderreh" or "doodjerra." In the spoken English of Ireland today, the word refers to a constant pipe smoker or a nosy person, but in an Irish-English dictionary of 1904, the word meant "a trumpeter or horn blower, blowing of a horn, or the act of crooning or humming" (Lonergan 2002). The word *dubh* in Gaelic means 'black' and is pronounced "duv" or "do." The word *duth*, pronounced "doo," means 'native or hereditary.' It is conceivable that Irish or Scots Gaelic speakers gave the name *dudaire dubh* or *dudaire duth* (pronounced "doodereh doo" or "doojerreh doo") to the person playing the native instrument, and then the word became associated with the instrument itself (Lonergan 2002). The earliest examples of the word *didgeridoo* in print include the *Australian National Dictionary* in 1919 and *The Bulletin* in 1924. The spelling *didjeridu* was first used in the first publication for the Australian Institute of Aboriginal Studies in 1963 (Moyle 1981: 321). According to the Australian Institute for Aboriginal and Torres Strait Islander Studies, the accepted English spelling is now *didjeridu*.

Acoustic Elements

The didjeridu's preferred length can vary regionally. Most instruments are one to two meters in length, three to five centimetres in diameter at the top, and five to seven centimetres at the bottom of the instrument (Moyle 1981: 322). The instrument is often decorated with ochre and clay designs of totemic symbols using techniques similar to bark paintings (Jones 1955:461). In some cases, designs may be burned into the wood. No finger holes or reeds of any kind are added, but beeswax is often attached to the top to improve the shape and size of the mouthpiece. Traditionally, there appears to be no standard shapes, sizes, or pitches required in making the instrument.

The didjeridu has a wide expressive range from slow and melodic to highly percussive, rhythmic, and sharp. There is room in traditional playing for individual improvisation and embellishment for the creation of new styles and techniques (Jones 1973:273). Comparing the didjeridu with trumpets from other oral civilizations shows the didjeridu to have unique attributes: in no other area in the world are rhythmic patterns or individual techniques of such sophistication and complexity so evolved. Other instruments of this type are primarily for playing simple harmonic patterns, for signalling purposes, or for use as a megaphone (Jones 1973: 269).

Most didjeridus are pitched between B1 and A2. The pitch of the instrument is dependent on length and diameter (Moyle 1981: 322) and the lowest audible tones are between 60-92 hertz (Fletcher 1996: 12). In traditional performance contexts, the precise tuning of the didjeridu is important in some clans and unimportant in others. In the Wangga and Kunborrk music of Western Arnhem Land, for example, the mago (didjeridu) is often the same pitch as the pitch of the Songman's voice (Lister 2002). The instruments used in these styles are generally shorter and fairly straight, with the bore of the instrument often of a larger diameter than those from other areas. Conversely, the pitch of the instrument appears to be unimportant and may or may not match the vocals of the Songman in Bunggul pieces, an East Arnhem Land style of music known for its lyrics that often depict epic journeys. The sound quality of the didjeridu, however, is important in the culture, and much attention is devoted to creating an instrument that has a clear, resonant tone (Neuenfeldt 1996: 40). Instruments used in this East Arnhem Land style of playing may be straight or sinuous. They are much narrower than the Western Arnhem Land mago and have a less-tapered bore. This slender, more parallel shape increases the backpressure of the instrument and enables the overtone to be played more easily (Lister

2002:1). *Backpressure* here refers to the amount of resistance the instrument gives the player's mouth and embouchure.

The didjeridu is played traditionally with the player seated on the ground, with the distal end of the instrument balanced on the foot of one leg and the other leg bent. The hand opposite to the straight leg holds the instrument. Sometimes the distal end of the didjeridu is put into a bucket or other resonating chamber to increase its volume. Water can be put through the instrument before playing to improve the tone. This is accomplished by pouring water though the instrument, or players may fill up their mouths with water and spurt it into the instrument (Turner 1997: 19).

Modern History

The Contact period of North Arnhem Land began when the Macassan fisherman first came to the coasts of Arnhem Land. From the Indonesian island of Sulawesi, the Macassans came annually to hunt trepang, or sea slug, a commodity not considered valuable to the Aborigines because it required boiling in water to remove its toxicity (Cawte 1996: 69). Each December, sailing with the monsoon, substantial fleets of ships with up to 2000 men aboard came to North Arnhem Land (Chaloupka 1999: 191). The Aboriginal people worked with the Macassans and received as part of their payment metal tools including iron knives and tomahawks. The Macassans also brought

steel axes and hatchets to the North Arnhem Land people (Parker 2003: 8). These tools enabled the Aborigines to make eucalyptus didjeridu with far greater ease. Overall, good relations existed between the two groups, and although the Aborigines adopted some Macassan customs and practices, the prolonged contact did not appear to disrupt the Aboriginal lifestyle to a significant extent (Chaloupka 1999: 192). Because of the colonization of North Arnhem Land by the Europeans, the Macassan stopped coming to Arnhem Land in 1907.

Approximately fifty-four European ships from a number of different European nations made contact with the Aboriginal people between 1606 and 1770. Dutch explorers of the early 1600s were probably the first Europeans to have contact with the North Arnhem Land Aboriginal people. Captain Joosten Van Closter, one of two shipmasters of the Dutch East India Company, named Arnhem Land in 1623 (Chaloupka 1999: 193). His ship was the first to meet the Northern Aboriginal people and chart the Australian coast. In 1824, Europeans at Fort Dundas and Port Essington first settled the Northern Territory. Because Arnhem Land was colonized in the 19th century, later than most of Australia, many Aboriginal people lived a traditional way of life there far longer than in other areas.

North Arnhem Land Music

Songs, dances, and ceremonial performances formed the basis of Aboriginal North Arnhem Land cultures. Through these songs and dances, the Aboriginal people sustain their culture and maintain a sense of self within the world (Marett 2005: xvi). Traditional Aboriginal music is primarily a vocal art form focused on songs. Each verse has a limited number of words that may have multiple meanings. Melodic instruments are absent so that the instruments do not compete with the words, the chanting, and the melody of the Songman (Neuenfeldt 1993: 2). Because the Aboriginal culture is an oral one, art, music, and song are extremely important mediums for transmitting the history, customs, and beliefs from one generation to another (Parker 2003: 13).

According to Elkin, a 1950s researcher of Arnhem Land music and culture, traditional Aboriginal music could be divided into three main groups: sacred, secular and secret (Elkin 1953a: 86). Secular music was performed within a public area, and all tribal members were allowed to participate. Subject matter could include current gossip, ballads, and stories involving the flora and fauna of the environment and their origins (Elkin 1953a: 87). Sacred music included mourning ceremonies with subject matter based on the Dreaming, and has sacred and mythological references. Sacred music

might or might not be performed in the camp. Secret music was performed in a sacred place, and its subject matter concerned the mother goddess, totemic heroes of the Dreaming, mythology and doctrine (Elkin 1953a: 89). No one in the clans who has not been formally initiated in this ritual knowledge could participate in these ceremonies. These secrets and rituals were the fundamental link to the Dreaming.

The Dreaming

The Dreaming is a key concept in Aboriginal spirituality. An extremely strong and intimate relationship exists between the Aboriginal people and the land they live upon and with. This land is the tangible evidence that the myths of creation are true (Chaloupka 1999: 45). The Aboriginal people believe that the landscape and all the beings that live upon it, including themselves, were created by the ancient beings of the ancestral past, or the Dreamtime (Chaloupka 1999: 45). The Dreamtime is the state and process of life that is continuous and eternal, and is timeless, but expressed in time. It is the point when the heroes, the ancestors, and the Mother Goddess walked and created the landscape of the earth (Elkin 1953a: 89).

The Dreaming is both continuous and eternal, and it is the time when the world was first born from darkness into light and ancestral beings travelled on heroic journeys across the landscape. Through

their representation in ritual, these acts of the totemic beings become re-enacted. The Dreaming becomes present when these beings are contacted and represented through the ritual and ceremony of song and dance. This timelessness of the eternal Dreaming is realized through music, acting and dancing in ritual, and through the art of painting. Music was an essential element of a symbolic and sacramental ritual of re-enactment (Elkin 1953a: 89). According to Aboriginal cosmology, the great Dreamtime Ancestors shaped the earth, its mountains, oceans, continents, rivers, and rock formations (Lawlor 1991: 114). Their activities are still present and affect the earth and all life processes. These creator beings formed the first people, and gave them their language, their religions, and their laws and rules to live peacefully together. These Dreamtime beings also gave their people magic songs and chants that would enable them to call upon the spirit ancestors for help in times of drought, war, and disease (Allen 1976: 42).

Totemism

Totemism is a worldwide sociological phenomenon, an intricate system used to structure the society and the universe. Totems are selected from the natural and supernatural environment. In most instances, these totems are animals or plants with which a group of people feel a bond of kinship. Totemism is the central feature of

Aboriginal religious life. It is based on a philosophy that regards humans, nature, and land as one (Chaloupka 1999: 69).

Religion is a Western term with a precise meaning; however, in Aboriginal life religion is part of a sacred attitude that includes the law, biological behaviour of animals and birds, kinship systems, and so on—all of which are aspects of a single reality. Oldmeadow believes that Brown's quote about the Native Americans of North America is true in large measure also about the Aboriginal people of Australia:

> The world of nature was their temple, and within this sanctuary they showed great respect to every form, function and power . . . their reverence for life and nature is central to their religion: each form in the world around them bears such a host of precise values and meanings that taken altogether they constitute what one would call their "doctrine." (Oldmeadow 2007: 9)

The Aborigines' semi-nomadic lifestyle ensured that they remained immersed in the realm of nature (Oldmeadow 2007: 10). The world around them contained not only beauty and harmony but signs of divine intent to which men could and should conform themselves. The sacred was always materially incarnated in the realm of nature (Oldmeadow 2007: 10, 16). As with visual art, Aboriginal music unites with the invisible laws of nature.

Song Cycles

The origin of the song cycles came from the Dreamtime, when the beings of the Dreamtime created and named the aspects of the

landscape as they journeyed. In traditional Aboriginal culture, song cycles were the primary musical form and the principle carriers of knowledge, identity, and power. The song cycles reconnected the members of the clans to the creative power of the Dreaming (Maddern 1988: 595). Songs had many purposes and were a great source of power. They were considered a man's most valuable personal possessions (Maddern 1988: 595). Group corroborees and gatherings for significant events such as a death or initiation of a clan's member most commonly included a Songman, clapsticks, didjeridu, and dance. *Corroboree*, or ceremonial meeting, is a generic word used to include different genres of performance of dance, music, and song. The didjeridu was used traditionally for entertainment in corroborees that included all members of the clans as well as secret and sacred initiation ceremonies for only select men (Parker 2003: 13). A song performance performed within a ritual such as an initiation existed simultaneously in the third dimensional human world and in the world of the Dreaming (Turner 1997: 26).

Songs were both sacred and secular, and could describe mythological events or give information that was crucial for the survival of the people of the clans. Aboriginal songs often recounted the activities of the supernatural beings that were active in the creation period before they incarnated as material animals, plants,

natural formations, and humans. In their state of being in the Dreaming time, these beings were capable of extraordinary feats (Turner 1997: 20). Songs could be used to summon rain, assist in healing, improve fertility, and for many other varied powers (Maddern 1988: 595). During initiations, the initiates would learn the songs of their clans, which gave them symbols of identity and signs of ownership. Song maps—or songlines—could also contain details of the location of water and food or could be deeds to the land. Songlines depict mythic events and actions of the Beings of the Dreamtime at successive sites along a walking trail winding through a region. Songlines are also fundamental to Aboriginal initiation knowledge and religion. Each Aboriginal clan inherited its own network of songlines (Chatwin 1988: 13).

The Songman was an extremely significant member of the clan. Songmen were men of a high initiated status, who had the most intimate knowledge of their clan's secret beliefs, rituals, folklore, mythology, legend, and gossip. The Songman combined the abilities of a powerful spiritual man with a musical voice and ear and an excellent and enduring memory. The Songman had great psychic power and learned many of his songs in dreams and visions from the spirits of the dead. Songs were also passed from one Songman to his successor. Very few songs had subject matter far removed from the

sacred beliefs and myths of the clan. The songs brought the listeners to the Dreaming as a time of creation that was both past and ever-present (Elkin 1953a: 89).

Traditional North Arnhem Land musical performances are composed of four elements: voice, sticks, didjeridu, and dance. Of these four, only voice was rarely, if ever, used as a solo instrument (Lister 2002). Sometimes, two Songmen sing at once, but hardly ever do two didjeridu players play simultaneously. The didjeridu is traditionally not played as a solo instrument. One or more singers may assist the lead Songman, although the leader determines what is to be sung. If there is an unaccompanied recitative at the end of a verse, the lead Songman is the last to finish (Moyle 1981: 323). Hand clapping of the audience is also a part of the ceremonial experience, and sometimes the didjeridu player himself will use either a clapstick or his finger to tap his instrument. The didjeridu player may also play the clapsticks while playing by placing one on the ground next to him, holding it with his foot, and hitting it with the other clapstick in his hand.

The didjeridu player, or "puller," adds tone colour and a rhythmic base to the songs and plays introductions, interludes, and codas. The didjeridu also serves as a rhythmic accompaniment for dance. The Songman is in control of the performance, however, and

communicates with the didjeridu player through playing his clapsticks or chanting mnemonic syllables. These mnemonic "mouth sounds," used as a form of communication between the Songman and the player of the didjeridu, impart information such as the type of rhythmic accompaniment and tempo required for the performance (Lister 2002). The didjeridu player also sends coded signals to the dancers through his playing to signify a change of tempo or step pattern. The rhythmic relationship between the words, the didjeridu, and the clapsticks is constantly shifting and changing (Neuenfeldt 1993: 2). The virtuosic player is highly valued and has the ability to deliver accurate and clear tonguing, breath control, and rhythm and has an excellent musical memory (Jones 1955: 462). The player organizes his rhythms around the stick pattern, which can be relatively simple or quite complex.

The Rainbow Serpent

In many clans, the didjeridu has a close connection to the mythical Rainbow Serpent. The Rainbow Serpent is the most supreme and potent deity of the Northern Australian Aborigines (Cowan 1992: 80). This Rainbow Serpent is considered the most powerful of all spirits and is the deity who created the world and everything in it (Allen 1976: 68). The Rainbow Serpent symbolizes the sacred body of the mother earth and the spiritual order of the universe. The head of

the Rainbow Serpent may have a feathered ornament or headdress, and may be depicted with prominent teeth, a serrated tail, and whiskers (Chaloupka 1999: 50). The Rainbow Serpent is a symbol of procreation and fertility and an important religious object for most of the clans of Northern Australia.

Themes of androgyny are prominent in the mythology of the Rainbow Serpent in Western Arnhem Land. For example, the serpent is the fertilizing principle in nature and is therefore identified with men (Warner 1958: 270), but is also seen as the mistress of the Earth and the Underworld (Cowan 1992: 81) and the first mother of all beings, who held all of the original ancestors inside her body and was speared to release them (Taylor 1990: 330). The Rainbow Serpent is also associated with the wet season, where thunder is his voice and lightning is his tongue (Warner 1958: 383-5). The Rainbow Serpent also has a strong relationship to the qualities of swallowing and regurgitation developed in Arnhem Land initiatory rituals, swallowing the dry season and then regurgitating it to bring forth a period of abundance (Taylor 1990: 329).

In certain cults, the sound of the didjeridu can represent the sound of the mythical Rainbow Serpent (Moyle 1981: 327; Warner 1958: 274). According to Ash Dargan, world-renowned didjeridu

player, a member of the Larrakia Nation, and ambassador of his culture:

> The serpent moving across the landscape is the Dreaming itself. The movement of the great Rainbow Serpent is of a type of motion of a time, the Dreamtime, when the world was more liquid than it is now. The sound of the didjeridu moves things back into the space and experience of the Dreamtime. The sound of the didjeridu is the sound of the movement of that great archetype, the Snake of the earth, the Great Being. She is the mother aspect of the earth, moving around shaping things as they are, creating the weather patterns. The didjeridu drone is that sound moving across the landscape. The Rainbow Serpent had feathers coming out from behind its head, and sometimes had a fungus growth underneath its chin where its neck is. Every colour is luminescent like the rainbow, and the Being herself is massive in size. As the Rainbow Serpent moves around, it is the sound and the power of the earth, but in movement, in constant movement. (Dargan, pers. comm., 2007)

Sacred Purpose

The didjeridu holds a high place of reverence in traditional North Arnhem Land culture. According to Mandawuy Yunupingu, principal didjeridu player of the band Yothu Yindi, the didjeridu is deeply entrenched in Yolngu spiritual existence and is a sound to be cherished because it is the sound of Mother Earth (Neuenfeldt 1996: viii). In fact, Yunupingu, Carmody, Davidson, Hudson and Dargan all affirm the sacred origins of the didjeridu (Neuenfeldt 1996: 7). The didjeridu is also used to help the spirit of a dead person transport over to the other side, to the Dreamtime, during mortuary ceremonies (Turner 1997: 3). Sacred instruments were stored in secret places

and used only for ceremony and then used again when the clans returned to a certain area (Parker 2003: 13). Often these ceremonial didjeridus were very long, producing deep tones, and sometimes the player had to lie down and play the instrument from that position in order to play it (Moyle 1981: 327).

Healing Use

According to Mandawuy Yunupingu, the Yolngu people have, for a long time, used and recognized the healing powers of the didjeridu. He is quoted as saying, "Through the provision of exercises for breathing, the didjeridu holds collective powers in the healing process" (Neuenfeldt 1996: vii). In some cases, the didjeridu is also used for physical healing as the player concentrates his breath on an afflicted part of the patient's body (Neuenfeldt 1996: vii). During my stay in Gove, Djalu Gurruwiwi used the didjeridu as a healing tool a number of times and spoke often of its use in healing (Gurruwiwi, pers. comm., 2008).

Gender - Traditional Culture

According to Mandawuy Yunupingu, didjeridu origins are sacred and secret to Yolngu men, and the didjeridu is considered a male orientated instrument that has a serious role to play in men's ceremony (Neuenfeldt 1996: vii). In traditional culture, the younger

men of the community played the didjeridu and the women did not play (Dargan, pers. comm., 2007). There is further a belief that some of the rhythms played during men's secret initiations would be harmful or dangerous to women if they were to hear them (Dargan, pers. comm., 2007).

Technique

Styles

Moyle separates didjeridu styles into two types, 'A type' and 'B type' (Moyle 1981: 323). 'A type' is defined as a style focusing upon the drone, with its accompanying colours of timbre, pitch inflections, syllables, vocalized sounds, humming, and chanting. The hooted overtone is not used. This style is prominent in Western Arnhem Land. 'B type' includes the overblown toot, whose pitch varies (usually between the seventh and the eleventh above the fundamental pitch) with each instrument and is found in Eastern Arnhem Land. This overblown tone is used both decoratively and structurally within a song cycle. Eastern Arnhem Land 'B type' techniques are generally found east of the Liverpool River, along the east coast of Arnhem Land, and Groote Eylandt. Western A types are found in the Goulburn and Croker Islands, the Arnhem Land west of the Liverpool River, the coastal areas on both sides of Darwin, and south into Kimberly (Moyle 1981: 323).

Language groups also separate these two didjeridu types. Prefixing language groups are prominent in the west, and Yolngu languages are prominent in the east. The prefixing languages consist of all non-Yolngu languages of Arnhem Land. The term *prefixing* refers to pronominal prefixes attached to a verb, which Yolngu languages lack (Heath 1978: 3). According to Heath, the prefixing languages are as different from the Yolngu languages as any two groups on the entire continent of Australia (Heath 1978: 12). This is evidenced in the music as well, and though the groups use the same instrument, each group plays quite differently (Moyle 1981: 323). In Eastern Arnhem Land, the rhythms are more percussive, with less emphasis on the drone. Style 'A type' playing is rich in harmonics, a characteristic that is often emphasized in performance practices. As discussed earlier, the instruments from each region also differ in structure and design.

Sounds

There is a tremendous variety in timbres and sounds available on the didjeridu, beyond the apparent monotony of the drone. Expert players demonstrate this variety with remarkable technical virtuosity (Jones 1967: 23). There are many methods and techniques for producing different sounds. The pitch of the instrument can be altered by a whole tone both higher and lower in pitch by tightening,

loosening, or changing the shape of the lips, jaw, and cheek muscles. Movements and placement of the tongue, lips, jaw, cheeks, and size and shape of the mouth cavity similarly alter the timbre. Vowel sounds can be vocalized and sung by singing through the instrument, or the sound may be altered by silently shaping the mouth into the form of consonants and vowels without using the voice box. Depending on the vowel sound mouthed, the didjeridu can generate sounds as varied as a deep organ-like tone to a reedy and nasal sound (Jones 1955: 461).

Glissandos, trills, humming, singing, sounds mimicking animals, and other vocalizations through the didjeridu are all elements of traditional didjeridu performance practices (Dargan, pers. comm., 2007). Rapid oscillations of the tongue can create a trill or growling sound and pulses from the diaphragm can create vibrato type effects (Jones 1955: 461). Single, double, or triple tonguings are used to create sophisticated rhythmic structures. Tongue techniques that create different timbres include moving the tongue over the soft palate, behind the upper or lower teeth, or through the lips, creating a strong buzzing sound. Many players supplement the basic drone by singing or chanting vocal sounds, of either the tonic note of the instrument or a fifth, fourth, or octave above or below the fundamental (Dargan, pers. comm., 2007). As a result of the two

distinct vibrations, one blown and one sung simultaneously, beats or interference waves set in and combination tones occur (Dargan, pers. comm., 2007).

Onomatopoetic rhythmic phrases may also be sung rather than mouthed for a richer, thicker timbre (Mununggurr 2006). The voice can be used in falsetto, normal range, or humming and can project loud screeches, sustained or staccato notes, gliding notes, and glissandi. Therefore, the didjeridu player must also be considered a didjeridu singer (Jones 1973: 269). Sometimes aspects of the sound such as the blown fundamental, blown overtone, or vocal effects have specific symbolic meanings. The fundamental pitch can symbolize the drone of wild honeybees. A blown overtone can represent the cry of a dolphin or a call to performance of an ancestral didjeridu player. Vocal shrieks can symbolize the call of certain birds, including the brolga, the seagull, and the sooty oystercatcher (Neuenfeldt 1996: 46; Gurruwiwi 2001).

Circular Breathing

Although a variety of different playing techniques exist in the various Arnhem Land communities that use the didjeridu, one technique common to all of them is circular breathing. Circular breathing is a practice of breath control wherein a small amount of air is kept in the cheeks and used while the player simultaneously inhales

through the nose in order to create a continual sound. Circular breathing can be used to create a continuous drone of a fairly constant pitch or can be used as a rhythmic technique by using the breath as a crucial element of a percussive rhythm. By creating a continuous sound emanating from the instrument, the player is freed artistically from the confines of running out of air. There is an ebb and flow of sound timbre, volume, and harmonic emphasis in this continual sound. This ebb and flow is part of the beauty of the instrument and should not be eliminated (to create a continual unchanged sound) but rather embraced because, through it, the ebb and flow of nature's rhythms are felt and heard (Dargan, pers. comm., 2007). The breath can be inhaled singly, with two breaths inhaled quickly in succession, or inhaled irregularly to create sophisticated rhythmic structures and odd meters.

Circular breathing is rare in world music and non-existent in Western music history (Turner 1997: 8). It is used traditionally in the performance practice of the Tibetan prayer horn and advanced shakuhachi technique. Some contemporary wind musicians, including saxophonists and clarinet players, now utilize it. It requires exceptional control and coordination of the cheeks, lips, jaw, tongue, lungs, and diaphragm (Jones 1955: 461). The breath is a significant element of didjeridu performance practice. As Kev Carmody says:

> My old great uncle taught me that you take the air from the mother earth, put it in your lungs, blow down that hollow tube and you make a sound. But a little bit of your spirit goes out with that Mother Earth. You've got to blow it as lightly as you can till there's just hardly any breath coming out of ya and you're still making a sound. He said that's where it really comes, that real gentleness of the didge . . . Breath is just as important as the sound coming out of the end . . . that's what the old fellow told me. (Neuenfeldt 1996: 14)

Ash Dargan also emphasizes the importance of the breath in didjeridu music and using his voice to create dual simultaneous sounds while droning:

> This is an expression of movement like the breathing exercises, you know, the exhalation of breath on this instrument is where the journey happens, and the breathing is nice and deep when you are getting into the meditation of the movement . . . I will bring in my voice at the same pitch as the didge to create a deeper resonance, a deeper voice of the serpent, as Baime, and a brrrr sound as well to create movement through different types of terrain. (Dargan, pers. comm., 2007)

Djalu Gurruwiwi, Ash Dargan, and Ondřej Smeykal all explained in my interviews with them that the breath is the cornerstone of didjeridu music and rhythm.

Rhythms

Traditional didjeridu rhythms are most often in duple or triple time, but can sometimes be in odd meters such as five, seven, and thirteen. Northeast Arnhem Land style particularly is highly percussive and rhythmic. Free rhythm, polymeter, multimeter, additive meter, and syncopation are all aspects of traditional didjeridu's performance practice (Jones 1973: 272). In some performances, the Songman

sings and plays his clapsticks while the didjeridu musician plays a free rhythmic accompaniment. Sometimes the meter of the singer and his clapsticks are polyrhythmically related to the didjeridu rhythm. The Songman may be playing and singing in duple time while the didjeridu is playing three beats within the same measure. In this form, the measure of each is the same length and tempo, but the subdivision of the beat differs for each. Alternatively, the didjeridu pattern may alternate within the song from compound 6/8 to duple 2/4 and back again. The number of beats within a measure may alternate throughout the piece with the subdivision remaining the same, such as alternating between 3/4 and 2/4 time. In additive didjeridu rhythms, the music may change in meter at each bar, with the final time signature neither divisible by two or by three (for example, 3/4 + 7/4 + 5/4 + 2/4= 17/4) (Jones 1973: 272). Syncopation is also a significant element in didjeridu rhythms, as is emphasizing the off beats of a phrase with volume, tone, or agogic accents. Traditional understanding of rhythms and specific sounds are handed down orally from one generation to the next and are intimately related to the natural world. As David Hudson, a didjeridu performing artist, put it, "Rhythms come from the land. They come from inspirations from water and inspirations from the wind" (Neuenfeldt 1996: 35).

Transmission

The Australian Aboriginal culture has been an oral culture for approximately 50,000 years. Wisdom, stories, geographic, and cultural knowledge have traditionally been transmitted through art and ritual. Like all Aboriginal music, didjeridu music and technique is orally passed down from generation to generation. In traditional Arnhem Land culture, all of the boys learn to play the didjeridu at an early age. The widespread demise of both the Aboriginal population and their culture through Western influence has severely affected the passing down of many songs, some of which have been permanently lost. Recordings created over the past sixty years have documented a significant amount of Aboriginal music, although secret initiation music and music lost through earlier genocide can never be recovered. There is no indigenous form of notation for Aboriginal or didjeridu music, and the early fieldwork transcribers used traditional Western notation for their transcriptions.

The 20th century and the onslaught of Western culture among the Aboriginal people saw the demise of many of the Aboriginal elders. Ash Dargan, as a young man, sought to learn traditional didjeridu from his Aboriginal relatives but found it difficult to find elders that were untouched by Western culture and Westernization.

Ash returned for the first time to his Aboriginal culture in 1989, when he was 22. He considers himself very lucky because, as he says:

> I caught the last elders in my region before they passed on. They were the last ones that had gone through all of the initiations—they were raised up in a pure society before these influences came upon them. They went through all the high levels of degree learning, and they were clever men, all of them—high ceremonial leaders in their younger days, and they were all bamboo men, which means ceremonial didge players. (Dargan, pers. comm., 2007)

The Didjeridu's History and its Relationship to Rock Art

Because of the tropical climate of the Northern Territory, wood and bamboo used to make didjeridus decompose quickly from the moisture, heat, and termites. This fact combined with the absence of an Aboriginal written language makes it difficult to judge the age of the didjeridu by conventional means (Parker 2003: 6). However, there is significant evidence from the rock paintings of North Arnhem Land that gives tremendous insight into the history of the music of North Arnhem Land (Moyle 1981: 324).

Although it is clear that the Aboriginal people have lived in Arnhem Land for at least 50,000 years, the flora that are used to make the didjeridu, specifically the *bamboo arnhemica* and the six species of eucalyptus that the termites eat, did not begin to grow in Arnhem Land until 1500 years ago. The most reliable way to find the accurate age of the didjeridu in the absence of writing is to look at the

rock art left in caves for evidence of the didjeridu in illustrations (Parker 2003: 7). Chaloupka's (1999) detailed study and chronology of the rock paintings of Northern Arnhem Land offers valuable information about the history of this area. Dating the rock paintings has become more accurate through recent technological improvements in radiocarbon technique, which allows measurement from tiny samples of the paintings.

The major concentrations of rock art in Australia are in the tropical far north of North Arnhem Land. It is within the Arnhem Land plateau, first occupied some 50,000 years ago, that the most complex and extensive amount of Australian rock art is found (Chaloupka 1999: 20). Because the paintings were painted in chronological order, the more current superimposed upon the past, understanding of the sequence of the rock art is possible. The changes in cultural patterns of local populations are graphically represented in the region's rock paintings (Chaloupka 1999: 24).

Based on detailed research of the rock art of North Arnhem Land, the history of Arnhem Land can be divided into four phases: the Pre-Estuarine period, Estuarine Period, Post-Estuarine or Freshwater period, and Contact period (Chaloupka 1999: 89). The Pre-Estuarine period dates from 50,000 years ago to 7,000 years ago, followed by the Estuarine period that lasted from 7,000 to 1,500 years ago. The

Post-Estuarine or Freshwater period, responsible for Arnhem Land's coastal wetlands, dates from 1,500 to the present. Within this Freshwater period is the Contact period, which began approximately four hundred years ago with the introduction of the Macassan sailors to the coast. The didjeridu came about during the third phase, and the increase of wooden didjeridus occurred during the fourth.

The Pre-Estuarine stage shows evidence of human life on the Arnhem Land plateau from as long as 50,000 years ago. During the Pre-Estuarine period, the sea was lower than it is at the present time, which means that the current Arnhem Land was not on the coast, but rather four hundred kilometres inland. During the Estuarine period, the sea began to rise, and by the time of the Post-Estuarine or Freshwater period, the area became more coastal and more fertile. At that point, the current habitat came into existence and stable sea levels created freshwater flood plains, river deltas, and wetland habitats.

During the beginning of the Freshwater period, the didjeridu first appears in rock paintings (Chaloupka 1999: 325). In these new habitats, the bamboo and the eucalyptus used to make didjeridus had an environment in which to grow (Parker 2003: 7). It is possible didjeridus could have been made earlier of other materials or were used earlier than their appearance in rock art. However, the

synchronicity of didjeridu's first appearance in rock art and the addition of bamboo to the environment provide strong evidence that bamboo didjeridus first appeared 1500 years ago. This last major ecological change in the northwestern area of Arnhem Land altered the environment of North Arnhem Land to a region of freshwater wetlands. These emerging freshwater lagoons and seasonally flooding plains became significant habitats for water birds and new species of plants (Chaloupka 1999: 185). The wetlands and the adjoining river areas became the region's richest environment. Magpie geese, which became a major food source, and many other birds first inhabited North Arnhem Land during this time (Chaloupka 1999: 186). The Magpie goose (*Anseranas semipalmata*) is the sole member of the *Anseranatidae* family. Also developing in this habitat was the *Bambusa arnhemica F. Muell*, a long-lived bamboo species endemic to northern western Australia that appears to be unaffected by both fire and flood. It tends to grow along the banks of slow-moving rivers and streams.

The didjeridu's first appearance in rock art occurs at the same time the magpie geese and other water birds began to colonize the new wetlands. There are paintings of men holding didjeridu trumpets in Inagurdurwil, Cannon Hill, Mt. Brockman, Upper East Alligator River, and Deaf Adder Gorge. In the paintings depicting rituals or

entertainment in which this instrument is used, there are people carrying goose-wing fans (Chaloupka 1999: 189). Therefore, it is probable that the didjeridu was invented during this period, for carrying a goose-wing fan was only possible during the Post-Estuarine period when the geese first came to populate North Arnhem Land. It was also during this time geographically that *Bamboo arnhemica* emerged with the new flora.

In some of the rock art, there is a stick beater next to the didjeridu player. Based on the study of these rock paintings, the didjeridu was probably superimposed onto a long tradition of a vocal and percussion song genre that had been clearly established during much earlier periods (Moyle 1981: 324). According to Moyle, the didjeridu's "intrusion" into Arnhem Land approximately 1500 years ago may have helped preserve elements of older song styles (Moyle 1981: 329).

Conclusion

Through varied, unusual and sophisticated techniques, the didjeridu provides most of the non-vocal musical elements required in traditional North Arnhem Land music. In order to do so, it functions simultaneously as a drone instrument of definite pitch, an instrument of multiple timbres that adds colour, and a rhythmic instrument capable of tremendous intricacy (Jones 1973: 269). Spiritually

revered in its culture and intimately connected to the Rainbow Snake, the didjeridu is a sacred instrument used for both secret initiations and group corroborees. A seemingly simple instrument constructed of a simple piece of wood or bamboo, the didjeridu uses techniques unique to itself, without parallel in any other culture. With its unusual performance practices, singular timbre, spiritual origin, and cultural use, the didjeridu is a remarkable and extraordinary element of the culture of the top end Northern Territory Aboriginal people.

Chapter Seven – The Shakuhachi of Japan

Introduction

The shakuhachi has a colourful and unusual history, originating in China at the beginning of the Tang dynasty (618-907). Transplanted into Japan in the 7th century, the shakuhachi has gone through a variety of transmutations and levels of popularity within multiple levels of society, altering in both construction and purpose (Blasdel and Kamisangō 1988: 69). The Japanese shakuhachi is the only flute in the world with an outward-facing blowing edge (Tukitani et al. 1994: 105). Like most of Japan's musical instruments and much of its culture, the shakuhachi was brought to Japan from China. In the course of its history, it has transformed from a delicate instrument of the gagaku orchestra into a heavy, solid flute that doubled as a weapon. The shakuhachi and its music can be separated into five types: the gagaku shakuhachi, the tempuku, the hitoyogiri, the Fuke shakuhachi, and contemporary shakuhachi (Kō and Kitahara 1990: 68). Its history can be separated into four sections, which correspond to four periods in Japanese history: Ancient, Middle Ages, Edo, and Contemporary.

Onomatology

The shakuhachi is named for its standard length. The shaku was the standard unit of length used in both ancient China and Japan, and ten sun equalled one shaku, although, during each dynasty, the length of a shaku differed. *Shakuhachi* means one shaku and eight (*hachi*) sun. A shaku in the 21st century is approximately one foot or thirty centimetres in length. Each sun is approximately 1.2 inches or 3 centimetres. The contemporary standard length of a shakuhachi is the 1.8 length, which is pitched to D4. Other common shakuhachi lengths vary from a length of 1.6 to as high as 3.0.

History - Ancient (600-1185 AD)

The shakuhachi came to China with the transplantation of Buddhism at the beginning of the Tang Dynasty (Blasdel and Kamisangō 1988: 71). According to the *Jiu Tang Shu*, a Tang dynasty document of historical facts, the shakuhachi was invented by Lü Cái between 627-649 AD (Tukitani et al. 1994: 103). Lü Cái, called Rosai in Japan, was a foremost musician of the Tang dynasty and was very active in instigating a major renovation of the musical program in China between 627-649. Before the redevelopment, Chinese flutes had been separated into two categories: long and short. The long flutes were more prominent, and were made in twelve sizes, each one matching a note of the traditional twelve-tone system used in China.

During this renovation, the short flute was also separated into twelve pitches. One of the earliest written references to the shakuhachi is found in the Tang documents:

> Lü Cái made twelve types of shakuhachi, all differing in length and pitched to the 12 pitches. (Blasdel and Kamisangō 1988: 71)

This ancient shakuhachi was an end-blown flute made of bamboo whose top end faced outward from the player and was cut obliquely to create a mouthpiece.

Japan was deeply affected by the culture of the Tang dynasty, particularly in the areas of religion, the arts, music, and language. The shakuhachi was brought to Japan in the late seventh century as part of the gagaku (literally 'elegant music') orchestra. The gagaku shakuhachi had six holes and a slender body and was used in the gagaku orchestra of the court (Blasdel and Kamisangō 1988: 69). These flutes were smaller and thinner than the modern D shakuhachi. Other instruments of the gagaku ensemble included the hichiriki, a double reed aerophone; the ryūteki transverse flute; the shō, a bamboo mouth organ; percussion instruments; and string instruments; the biwa, the wagon, and the koto. The shakuhachi was a part of the gagaku orchestra until the mid-ninth century. During the ninth century, the music of the Imperial Court experienced a comprehensive overhaul. The music that had been imported from

China and Korea was altered to conform to Japanese aesthetics and taste, and during this time, the shakuhachi fell into disuse in the court orchestra (Blasdel and Kamisangō 1988: 74). It is unclear what caused the shakuhachi's lack of popularity in the court ensemble. After the ninth century, the shakuhachi could only be found in Japan: its use had died out in China, and other flutes replaced it.

Eight original gagaku shakuhachi are preserved in the Shōsōin, built in 756 at the temple of Tōdaiji in Nara. The *Saidaiji Shizai Rukichō* is a list of instruments imported from Tang, China. Written in 780, it records one patterned bamboo shakuhachi and eight additional shakuhachi. Not all of these instruments are bamboo: some are made of jade, stone, and ivory, although they have nodes carved into them suggesting they were copied after actual bamboo. The one bamboo flute is made of hachiku bamboo (Kō and Kitahara 1990: 68) and is carved in a highly elaborate and detailed manner. Preserved from the same era is a shakuhachi owned by Prince Shōtoku, who lived in the late 6th century. Prince Shōtoku was an influential figure in Japanese history, considered responsible for instigating Buddhism as the state religion.

Although there are actual instruments preserved from this early era of history, very little is known about the music from this period (Kō and Kitahara 1990: 68). There are no manuscripts left of musical

notation or instructions of playing techniques, although there is reference to a famous gagaku musician, Prince Sadayasu, using shakuhachi notation as a guide to reconstruct a gagaku piece (Blasdel and Kamisangō 1988: 74).

History - Middle Ages (1185-1600)

Very little is known about shakuhachi music during the 10th and 11th centuries. The next written reference is from 1158, at the end of the Heian period (794-1185), when the emperor ordered a revival of the shakuhachi (Blasdel and Kamisangō 1988: 75). By the early 13th century (Kamakura period: 1185-1333), the shakuhachi was no longer played exclusively by the nobility: the instrument was played by a wide range of people from decidedly different social classes, including commoners and blind priests, considered two of the lowest classes in Japanese society. The aristocracy continued to play the flute for another two centuries (Lee 1992: 76).

There are a number of documents from this period that prove that the shakuhachi was played by different classes of society. In the comprehensive treatise *Kyōkun Shō*, written in the 13th century, there are references to blind monks and Sarugaku actors (actors of popular drama, which later became the noh theatre) playing the shakuhachi. The 14th century document *Yoshino Shūi*, which discusses the events in the Imperial Court, refers to the Imperial

Prince Kanenaga as a proficient shakuhachi player (Blasdel and Kamisangō 1988: 77). The *Taigen Shō*, a comprehensive musical treatise written in the early 16th century, has a chapter entitled "Shakuhachi." In this chapter, there is reference to the shakuhachi being played by both gagaku musicians and dengaku (folk harvest dance) performers (Lee 1992: 72).

Beggar priests are mentioned in documents as early as the 14th century, but by the 15th century the name *komosō* was still uncommon (Blasdel and Kamisangō 1988: 82). By the mid-sixteenth century, the connection between the shakuhachi and the beggar monks called *komosō* (priests carrying only a straw mat) became clear. They are the predecessors of the *komusō* of the later Edo period (Lee 1992: 72). The name *komosō* comes from the word *komo*, which was a simple straw mat used for sleeping and worn to keep out the rain and cold. These beggar monks were referred to by other names as well, including *boro* (or ones wearing rags), *mumahijiri* (saints living like horses), *boroboro*, *bonji*, and *kanji* (Blasdel and Kamisangō 1988: 82; Lee 1992: 72). Each of these words has a religious overtone that also speaks of poverty, wandering, and begging. They were a loosely organized group without set headquarters or monasteries.

Organology - The Middle Ages

During the Middle Ages, the number of shakuhachi finger holes altered from the six of the gagaku shakuhachi to five. It is not known what caused the change in the number of finger holes (Lee 1992: 62). The *Taigen Shō* speaks of four separate shakuhachi, pitched at E4, G4, A4, and B4. These instruments, as evidenced by the *Taigen Shō* illustrations, show five-holed shakuhachi with only one bamboo node.

The tempuku and the hitoyogiri are two flutes that are an integral part of the shakuhachi's history. The tempuku has a different mouthpiece but similar body and hole configuration to the shakuhachi. It flourished between the 12th and 15th centuries. Tempuku means *ten* (heaven) and *puku* (to blow). Nothing is known about this instrument's origin or the background of the ethereal aspect of its name. Tempuku illustrations depict it as having some similarities in design to the shakuhachi of the Middle Ages. Made of a piece of *hotei chiku* bamboo with three nodes, about 26 cm in length, the exact length was probably determined not by acoustics or by pitch, but by finger widths between the nodes (Blasdel and Kamisangō 1988: 85). The position of the holes was determined by the diameter of the bamboo and the positions of the nodes, and as a result, the pitches of two instruments could be very different in their intervals both between each pitch and the actual pitches themselves. This created

considerable variation and a lack of standardization among instruments. Although end-blown, the tempuku, unlike the shakuhachi, has an inward rather than outward mouthpiece. The players, primarily samurai, probably made their own tempuku. The instrument was most popular in the latter half of the 16th century (Blasdel and Kamisangō 1988: 85).

The name hitoyogiri referred to all shakuhachi flutes of the Middle Ages of all lengths and pitches. The hitoyogiri appeared in the Muromachi period (1392-1586), began to die out by the early 17th century, and soon after became extinct. It was quite popular as an instrument from the mid-sixteenth century through the Edo period. The term *hitoyogiri shakuhachi* came into use during the 17th century to distinguish it from the larger, heavier Fuke shakuhachi, which was developing as part of the Fuke sect. Both the tempuku and the hitoyogiri had a higher pitch and a shorter length than the Fuke shakuhachi. The hitoyogiri was made of a single-node section of bamboo and was, therefore, much smaller than the contemporary standard 1.8 shakuhachi (D4) of 54.5 centimetres. With five holes, it varied in length and pitch, although the most common flute had a tonic of A4.

The founder of hitoyogiri playing and the composer of its first pieces is considered to be Sōsa, a man who was probably a hermit,

although there is no written evidence about when or where he lived (Blasdel and Kamisangō 1988: 87). Sōkun (1570-1625), a samurai who later devoted his life to the study of the hitoyogiri, became famous for his playing and for being the second founder of the hitoyogiri. A number of collections of hitoyogiri pieces and instruction books were published by Sōkun in the 17th century. These included a large collection published in 1608—"Pieces for the Short Vertical Flute"—which is considered the oldest recorded document containing written pieces for the hitoyogiri. These early pieces are written in Japanese katakana syllabary. They are important to the history of the shakuhachi because these seventy very short instrumental solo pieces appear to be the precursors to the solo honkyoku music of the Fuke shakuhachi sect. During Sōkun's time, there were a number of different pitches of hitoyogiri being played, but fifty years later, the A4 was probably the only one still in use (Blasdel and Kamisangō 1988: 88).

In the early Edo period, the hitoyogiri was still very popular. There were a number of musical instruction books and music books available to the public in the late 17th century. Hitoyogiri music was divided into two types: solo, called *te,* which later became *honkyoku*, and *rankyoku*, or ensemble music, which later became *gaikyoku*. Musicians tended to be specialists in one type of music or the other.

By the 18th century, the public began to lose interest in the hitoyogiri. By the early 19th century, it was played very little, and by the end of the 19th century, it was extinct. The reason for its demise was its lack of flexibility. The fingering of the hitoyogiri was similar to the present day shakuhachi, but half holing was not possible due to the small size of the holes. The *meri* and *kari* positions, which on the shakuhachi create additional pitches and timbres, were difficult if not impossible to accomplish because of the small diameter of the blowing hole (Blasdel and Kamisangō 1988: 89). Therefore, the number of playable pitches was very limited, unlike the contemporary shakuhachi that is able to play not only the twelve chromatic pitches of an octave but also subtle microtonal inflections between notes. The hitoyogiri's range was an additional reason for its eventual demise. It could only play an octave and a fourth as compared to the two and a half octaves available on the shakuhachi. The shakuhachi's flexibility in fingering was also far better than the hitoyogiri's. The Fuke shakuhachi eventually replaced the hitoyogiri because of the hitoyogiri's limitations.

Japanese Musical Theory

Imported theories of mode have been used in the analysis of Japanese music, but have not always been relevant to the actual tonal structure of the music (Tokita 1996: 3). Both Gagaku and Shōmyō

brought with them from China a highly developed Chinese theory of mode. Although by the tenth century Japanese theoretical writings showed that the Japanese were adapting this theory to their own melodic aesthetic, Chinese terminology and concepts continued to be utilized for centuries (Tokita 1996: 3). Music theorist Uehara analysed the music of various Japanese genres in the late nineteenth century and focused on music of the Edo period, distinguishing the scales of urban area and the country areas as *in* and *yō* respectively (Tokita 1996: 4).

The next significant theory of Japanese scales was developed by Koizumi in 1958. He approached Japanese music form an ethnomusicological point of view, seeing Japanese modes as constructed of units of a fourth which he called tetrachords (Tokita 1996: 5). Koizumi believed in some genres of Japanese music it is difficult to attribute the tonal center to only one tonic: sometimes there are two or more tones with this function within the scale. These multiple tonics are he called *kakuon*, or nuclear notes (Koizumi 1977: 73). Usually, two *kakuon* are a fourth or fifth apart from each other, and make a frame that has within it an intermediate tone. These units Koizumi called a tetrachord (Koizumi 1977: 74). The intermediate tones can range from a minor second to a major third above the lower kakuon. Koizumi identified four types of tetrachords.

Minyō tetrachord (tetrachord I) is the tetrachord of folk songs, with an intermediate tone a minor third above the first kakuon. The miyako-bushi tetrachord (tetrachord II) is the tetrachord of urban melodies, which includes shakuhachi music. Its intermediate tone is a minor second above the first pitch, or, in shakuhachi terms, tsu meri. Tetrachord III is the ritsu tetrachord, and tetrachord IV the *ryūkyū* tetrachord (Koizumi 1977: 75). When two tetrachords of the same type are combined one above the other, four pentatonic scales result (Tokita 1996: 5). During the Edo period, this miyako bushi scale became extremely popular in all musical genres, often replacing the ritsu scale, a scale of Chinese descent used for shōmyō and gagaku.

The Shakuhachi as a *Hōki*

Buddhism originally came from India, then to China, and established itself in Japan in the seventh century. An aesthetic understanding of the shakuhachi's music and performance practices must include an understanding of the importance of music and sound in the principles and ideology of Buddhism. Sound in Buddhism is the most important medium and means through which the Buddha teaches the dharma and by which beings receive salvation (Chen 2001: 44). Music also has the ability to be penetrative and plays an essential function in transmitting the dharma or divine law. In Mahayana Buddhism, hearing is considered the best method for

beings to achieve the mind of enlightenment (Chen 2001: 47). The concept of sound as a medium for enlightenment is prominent in Buddhist philosophy. The *Surangama Sutra* gives a long discussion about entering into the consciousness of *samadhi* through the medium of sound (Blasdel 1984: 214; Chen 2001: 47). In chapter six of this sutra, Avalokitesvara Bodhisattva explains his means of achieving the wisdom through the medium of sound to penetrate the nature of all things. "I enter samadhi by means of hearing, meditation, and practice" (Chen 2001: 46).

The experience of penetrating the truth of all things through hearing is considered by Bodhisattva Manjusri as the best means for living beings to achieve enlightenment. He speaks about this in the *Surangama Sutra* after the statement of Avalokitesvara Bodhisattva:

> I now submit to the World Honoured One That all Buddhas in this world appear to teach the most appropriate method, which consists in using pervasive sound. The state of Samadhi can be Realized by means of hearing. Thus was Avalokitesvara freed from suffering.
>
> 0 you who (have achieved) the sound profound, The seer of sound, of sound the purifier, who, unfailing as the sound of ocean tides, Saves all beings in the world, make them secure, ensure their liberation and attainment of eternity . . . Hearing is complete and perfect . . . The five other organs are not perfect, but hearing really is pervasive . . . The faculty of hearing, beyond creation And annihilation, truly is permanent . . . For the faculty of hearing is beyond All thought, beyond both mind and body. (Chen 2001: 47)

In the *Sukhavatyamrta-vyuha Sutra*, a significant *Mahayana Sutra*, Buddha says that in *Sukhavati* (utmost joy) there is no suffering and the world is filled with wonderful music (Chen 2001: 38). According to the *Sukhavatyamrta-vyuha*, in *Sukhavati*, celestial music is always heard, a desirable and marvellous phenomenon in a pure land (Chen 2001: 42). This sutra further emphasizes the importance of the sounds of nature: worldly music, natural music, and even celestial music are inferior to the sound proceeding from the trees of *Sukhavati.* When these precious trees are moved by wind, a beautiful sound emerges, which makes a hundred thousand kinds of music at the same time. This music is pure, flowing, sonorous, subtle, peaceful, graceful, and most importantly, it contains the sound of the dharma (Chen 2001: 43). In the *Sukhavativyuha Sutra*, the Buddha tells Ananda the function and character of this tree music in *Sukhavati*:

> Five tunes, naturally harmonized, flows from the trees when breeze moves over . . . When the breeze passes and plays on the trees, producing the sounds with infinitely wonderful dharma. These sounds flow over all Buddha realms. Whoever hears such sound will obtain profound patience and never retreat until achieving Buddhahood. These beings will possess purified organs of hearing and suffer no affliction. (Chen 2001: 43)

Zen (which means meditation) is a form of Buddhism that originated in India and came to Japan in the 12th century (Woodson 2001: 2). Bodhidharma was an Indian monk who, adhering to the

teachings of the Buddha, brought meditation to China in the 6th century. Zen was adapted by the Chinese to conform to their aesthetics and cultural leanings and include aspects of their indigenous religion Taoism, thus becoming Chan Buddhism. Zen philosophy did not conform to scriptures and ritualistic ceremonies, and its ultimate purpose was to achieve enlightenment and expand and develop spiritual power and intuition (Woodson 2001: 4). Bodhidharma taught that meditation was the means to enlightenment without reliance on the written word or on the doing of good acts to achieve merit. Three major Zen schools came to Japan at different times. Rinzai Zen, the school the Shakuhachi Fuke sect would later align to, arrived first in 1101 AD. Its focus was on the use of the kōan (literally 'public document') as a dialogue between the master and the disciple, with the aim of leading the practitioner beyond the rational mind to achieve enlightenment. Meditation was used as a means to discover the answer to the kōans and to achieve enlightenment (Woodson 2001: 18).

Zen had a significant effect on many Japanese art forms, including music, calligraphy, painting, martial arts, and the tea ceremony. In Zen art, the purpose of the form, colour, and other elements of composition is to embody and express the infinite meaning of the cosmos. Art gives form to the relationship between

man and the Absolute. In Zen philosophy, the greatest art form is the soul's inner journey to God, and all art originates from the expression of this journey (Hasumi 1962: xi). For example, Buddhist chanting is concerned less with the shapes of melodies than with the quality of sound, which is believed to reflect the chanter's mental and physical state (Chen 2001: 45).

According to Hasumi, there are four qualities of Japanese Zen art. They are a love of nature expressed in the art form, the effort to attain simplicity in art, the quality of intuition used by the artist in order to create, and the relationship of the artist to the Absolute expressed in the art form. The love of nature is considered a guide to the transcendent world of the spirit (Hasumi 1962: ix). Elements of shakuhachi music aesthetics are evident in this Zen appreciation of nature. The timbre of the shakuhachi is supposed to sound like the wind whistling through the bamboo groves (Seldin, pers. comm., 2007).

The most important aesthetic principle in Japanese Zen art is harmony. This includes harmony of forms, harmony of expression, harmony of materials, and the harmony between heaven, earth, and man (Hasumi 1962: xi). Mastery of technique is an important requirement for Zen art of high calibre, although outward technique by itself is not art. Technique is developed by evolution of the inner

reflection and spiritual maturity of the artist. Only through the evolution of the soul does the artist attain true inward technique (Hasumi 1962: xii). In other words, excellent technique is not only a question of artistic dexterity, but of the artistic process deep within the practitioner. In Zen art, artistic expression and creation is actually the psychic unfolding of the personality. A consummate artist with great skill does not necessarily mean perfection in form and shape, but rather in the expression of the human soul, a reflection of a psychic stage in the evolution of the artist.

A high degree of focus on the purity of sound in the Zen art forms occurred during the Middle Ages (Blasdel 1984: 215). During the fifteenth century, Zen was flourishing in Kyōto. One of the most important references to the shakuhachi as a religious tool during this time came from the writings of the Zen priest Ikkyū (1394-1482). Ikkyū was a priest of the Rinzai sect who was a rebel character and often challenged authority. Ikkyū believed that sound was an important tool in the process of enlightenment and, therefore, in Zen practice. Ikkyū wrote that the shakuhachi "encourages cognition" (Blasdel 1984: 215). He expressed his philosophy in his book of poems called the *Kyōun Shū* (*Crazy Cloud Collection*). Several of the poems from this collection are about the shakuhachi. The importance of the shakuhachi to meditation and the relationship between music

and sound to those seeking enlightenment is clear in Ikkyū's poetry. The following poem refers to one of the essential tenets of Zen Buddhism and a crucial principle in shakuhachi study: enlightenment by a single sound (*Ichion Jōbutsu*). It is also the means by which Ikkyū is said to have obtained his enlightenment (Blasdel 1984: 216).

> The incomparable Tonami, who roams the heavens and the earth
> Playing the shakuhachi; one feels the unseen worlds
> In all the universe there is one song
> Our flute player pictured here. (Blasdel 1984: 216)

Another of Ikkyū's poems speaks of the relationship between the shakuhachi and meditation:

> "21 Dengaku"
>
> I take out the shakuhachi from beneath my sleeve,
> to blow it while waiting and the
> The wind through the pine—
> scatters flowers as though a dream
> How much longer will I have to play
> until my heart is quiet again? (Blasdel and Kamisangō 1988: 81)

It is clear that Ikkyū played the shakuhachi and carried it with him during his travels and while teaching. Legends about the beginnings of the Fuke sect and the komusō include Ikkyū and a foreign monk named Rōan, who had a close relationship to Ikkyū. Rōan, also known as Kyochiku Zenjil, called himself *Fūketsu Dōsha*, which means "A Searcher in the Way of the Wind and Holes" (Blasdel and Kamisangō 1988: 79). The records of the famous shakuhachi temple of the komusō located in Kyōto state that Rōan was the

founder of the temple. An ancient scroll of Rōan drawn by the priest Shokei in the 15th century depicts Rōan playing an end-blown flute while walking. Other sources also speak of this monk, crediting him with founding the komosō tradition (Lee 1992: 71). Ikkyū and Rōan were probably among the first monks to use the shakuhachi on religious pilgrimages. The shakuhachi they played was probably the same type of instrument showed in the *Taigen Shō*.

During the Middle Ages, there were other monks like Ikkyū and Rōan who used the shakuhachi as a meditative tool. The practice of *suizen*, or blowing zen, came from the two words *sui*, to blow, and *zen*, meditation. It was the integral ideology behind playing the shakuhachi as a religious tool or *hōki* (Tukitani et al., 1994: 111). In *suizen*, the shakuhachi was not played for entertainment or performance for an audience, but as a Zen tool of meditation and inner exploration. This term demonstrates the importance of the breath, connected to meditation, that is attached to this instrument.

Little is known about the exact type of instrument these komosō monks used. Because they were wandering mendicants, it is probable their flutes were hand made, without standardized pitch, shape, or length. According to the *Boro no Techō*, the *Handbook of Boro Monks* written in 1618, these monks' flutes were five holed and consisted of three nodes of bamboo.

By the sixteenth century, the name for the mendicant shakuhachi *komosō* changed to a new homophonic form of the word that had a different meaning. This new name came from two characters: *ko* (emptiness) and *mō* (illusion) rather than *komo* (straw mat). This change indicates that the komosō were seen with more of a spiritual leaning than an impoverished one and were given higher consideration in society (Lee 1992: 72). These wandering monks were the predecessors of the Edo period Fuke sect *komusō*.

The first direct reference to *komosō* is found in a mid-sixteenth century collection of poetry called *Sanjūniban shokunin uta awase,* which states:

> The komosō are absorbed in visiting the houses of both rich and poor, begging and playing shakuhachi—that is all they do. (Blasdel and Kamisangō 1988: 82)

The word *absorbed* in the above quotation refers to being absorbed in the divine, from the Sanskrit word *samadhi*, which means being fully absorbed in the state of ecstasy. The use of this word and the words *ko* and *mō* demonstrates the strong aspect of spiritual discipline connected to the shakuhachi during the 16th century (Blasdel and Kamisangō 1988: 83). Illustrating this poem shows a picture of the flute, a chōkan (long) shakuhachi, used to play Buddhist pieces. These longer flutes produced low tones that could further encourage a meditative experience (Lee 1992: 72).

The komosō monks believed in the shakuhachi as a spiritual discipline: both the playing of the shakuhachi and the sounds of its tones were a medium to help attain enlightenment. Documents from this period confirm this conviction. The *Kangin Shū* of 1518 is a collection of poems called *kouta*, a genre of songs performed during the Middle Ages. The shakuhachi is mentioned within these poems as an instrument with a meditative quality. A poem entitled "Komosō" asks:

> Amidst the spring flowers who should care that the wind blows?
> It is not the wind but the shakuhachi of the komō.
> (Lee 1992: 72)

For hundreds of years prior to the Fuke sect's establishment, the komosō wandered the Japanese countryside begging and playing shakuhachi.

Numerous qualities of the shakuhachi's performance practice are conducive to its use as a *hōki*. The practitioner must concentrate his mind and his breath to play the long, steady tones of honkyoku. To produce the different sounds of the *meri* and *kari* positions and the specific breath techniques of the shakuhachi, the practitioner must have control of his breath and embouchure in specific and subtle ways. The tone of the shakuhachi itself is meditative and the instrument is of medium volume, an appropriate symbol for a path of moderation. Just as each person's spiritual path is unique, each player

creates his own individual tone because the mouth and embouchure and breath are such an inherent part of the resultant timbre. These qualities of the shakuhachi and the playing of honkyoku encourage the elements of introspection, meditation, and spiritual discipline in the Zen practitioner (Blasdel and Kamisangō 1988: 111).

Edo Period (1600-1868)

The Fuke Sect - History

The beginnings of the Fuke sect are unclear and surrounded by mythology. The Fuke sect gained formal recognition by the Edo government as a Zen religious sect, creating an authorized religious group focused on the practice of playing the shakuhachi and begging for alms. There is very little evidence about the beginnings of the sect in the early 17th century. Even before their official recognition by the government in 1677, however, the komusō were organized into sixteen sects and had established lodges for their members' travel that later became temples.

The Fuke sect was open only to samurai. The bushi, or samurai class, was the highest social class in Japan. Members were highly educated, and it had a long history of practice in Zen Buddhism. The samurai had been constantly engaged in war since the 12th century and had relied on the precepts of Zen for spiritual support. They sponsored Zen in the temples, in Japanese culture, and in the arts

(Woodson 2001: 2). Because of the consolidation that occurred during the Edo period by the Tokugawa military government after a long period of civil wars in the 15th to 16th centuries, these masterless samurai, called ronin, no longer had work. For them, to work in another profession would have been unacceptable, and many saw no other honourable profession available to them other than begging and taking a spiritual path of renunciation as a Buddhist monk. The ronin began to join the Fuke sect in large numbers.

The Fuke sect was a mutually beneficial creation for the government and for the samurai. At the onset of the Edo period, the ronin were a liability to the Edo government, and they were watched carefully. Even so, the ronin joined with the Christians and became involved in a rebellion. The government responded by tightening their authority, and as a result of this increased governmental authority, the komusō banded together and formed religious sects to provide protection for themselves (Blasdel and Kamisangō 1988: 105). It became obvious to the komusō that it would behove them to obtain legitimate governmental support of their spiritual movement. This support, they hoped, would help eradicate the undesirable aspects of their movement, promote the loftier qualities, and give their group a higher opinion in society. In an attempt to separate themselves from the lower class komosō, the ronin changed their name to komusō,

emphasizing the Zen qualities of the name by substituting *mu,* 'nothingness,' for *mō,* 'illusion' (Blasdel and Kamisangō 1988: 106).

The Fuke sect allowed the ronin to combine mendicancy, a spiritual path, spying, and criminality if they desired. The komusō could continue to carry a weapon (a dagger and the thicker, heavier, Fuke Shakuhachi), could belong to a prestigious sect only open to samurai (no one else was allowed to play the instrument), had the ability to travel widely (quite difficult at the time), and could become spies for the government. In the early Edo period (1603-1868), there were about one hundred and twenty Fuke temples throughout Japan, although they originally consisted of only simple lodges for the monks (Sanford 1977: 415). Affiliated as a branch of Rinzai Zen, there were three main temples located in Kyōto and Edo (Tokyo) and many smaller temples throughout the country.

The Kyotaku Denki

The *Kyotaku Denki* is the only published document about the origin of the Fuke sect, and is now considered by many scholars to be fabricated (Yamamoto 1977: 47). The exact date of its creation is unknown, but the original text was probably written between 1765-1770 (Sanford 1977: 416). Its purpose was to prove that the komusō had a long-standing Zen history and tradition before the days of the Tokugawa regime. The Fuke sect obtained official governmental

recognition as a collateral line of the Rinzai Sect of Zen Buddhism by using the connection between the Zen Master P'u-k'o (in Japanese 'Fuke') whom the komusō claimed as their founder, and Lin-chi (in Japanese 'Rinzai') the founder of the school of Zen Buddhism (Gutzwiller 1984: 54). The story of the supposed Zen origins of the shakuhachi and its religious and spiritual background are described in the *Kyotaku Denki:*

> Fuke, who is considered the founder of the Fuke sect, was a monk of the Tang dynasty (618-907 AD) in China. He was constantly ringing a bell, and his disciple, Chōhaku, was so impressed with the sound that he designed the shakuhachi out of bamboo to imitate the sound of Fuke's bell. Chohaku composed a piece called "Kyotaku" (later 'Kyorei') which means 'empty bell'. Chōhaku passed music of the shakuhachi down as a secret Zen transmission through sixteen generations, down to a monk in the thirteenth century named Chang T'san. Chang T'san met the Japanese monk Gakushin, who was studying Zen in China, and taught the mysteries of the shakuhachi to him. Gakushin brought the shakuhachi to Japan, and is considered to be the patriarch of the Fuke school of Zen. Gakushin's disciple, Kichiku, requested of his guru that he might go into the world and play the shakuhachi while travelling. Gakushin readily agreed. On the first night of Kichiku's travels, in a transcendent (meditative or dreamlike) state, Kichiku has a dream:
>
> Kichiku was poling a punt, alone on the sea, admitting the full moon. Suddenly a dense fog covered everything, and the moonlight, too, grew dim and dark. Through the fog, he heard the sound of the flute, desolate and sonorous . . . Kichiku had never before heard such an exquisite sound.
>
> Kichiku awoke and immediately began to play the music he had heard in his dream on his flute. He returned to his guru to tell him what had transpired, and Gakushin was very happy with Kichiku's dream. Gakushin named one of the pieces "Kokū," which means 'Flute in an Empty Sky' and the other "Mukaiji," which means 'Flute in a Misty Sea.' Together with Chōhaku's

> original song, Kyotaku (or Kyorei) these three pieces compose the first three primary pieces of the honkyoku repertoire. (Blasdel 1984: 216)

Nakatsuka, an early twentieth century scholar, was the first to consider the possibility that elements of the *Kyotaku Denki* were fictitious (Yamamoto 1977: 47). He was not looking to discount the document, but had undertaken a study of the *Kyotaku Denki* and, during his research, found that records of temple histories, lineages of priests within the temple, and teachings of various priests discussed in the document were actually made up at a later date. From his investigations he came to the conclusion that the document was purposely fabricated—forged so the sect could achieve the support of the government. Although proven false in the early twentieth century, this legend and the history of the shakuhachi it portrays were regarded unequivocally as the Zen history of the Fuke sect throughout the Edo period and even into the twentieth century, if for no other reason than its widespread dissemination (Yamamoto 1977: 47).

According to Nakatsuka, who has made the most detailed study to date of the documents of the Fuke sect, the Fuke sect did create a stronger and more definite connection to Zen mysticism than had existed previously. The Fuke sect did play the flute as an aspect of Zen meditation and did create a larger, heavier, root-end instrument.

The Fuke legend in the *Kyotaku Denki* had a background in an early 16th century document *Boro no Techō* that explained the way of the komusō (Blasdel and Kamisangō 1988: 107). The sect did not, however, grow out of primarily a musical or religious need but rather a political one (Blasdel and Kamisangō 1988: 106). Because the ronin could have caused a tremendous amount of difficulty, the government chose to recognize the sect and use its members as spies.

The qualities of purity and otherworldliness are important aspects of this legend of the shakuhachi and of its music, whose original pieces originate as the result of divine revelation. A primary aesthetic of honkyoku is yūgen, a concept that can mean 'deep' or 'mysterious' and encourages "purposeful indeterminacy," evidenced in the free rhythm and slow tempo of honkyoku (Gutzwiller 1983: 248). The three pieces named in the legend—Kokū, Mukaji, and Kyorei—are the first and most important pieces of the honkyoku repertoire. These original *suizen* pieces are notable for their simple phrasing, wedge-shaped (*kusabi buki*) phrases endings, and lack of ornamentation: pieces designed specifically for *suizen*.

Another important document regarding the Fuke sect was the "Charter of 1614." Although according to the Fuke sect, Ieyasu, the founder of the Tokugawa Shogunate, supposedly wrote this charter himself, the original does not exist either in the government or the

Fuke sect archives. The Fuke sect told the government that the original was burned in a fire. Because there is no remaining document with the governmental seal, it is probable that this document was fabricated as well (Sanford 1977: 418). This charter gives the Fuke sect numerous privileges and was probably forged in the late 17th century. The unique privileges awarded the sect in the Charter's eleven articles include giving all komusō license to be beyond the authority of local governments and jurisdictions, answering only to the shogunate himself through the *jisha-bugyō*, a shogunate office responsible for the issues of Buddhist temples and Shinto shrines. The komusō were given free passage on boats, free access to plays, and were by law treated with consideration by everyone who came in contact with them (Sanford 1977: 418). The sect itself was by governmental law exempt from taxation.

While the *Kyotaku Denki* tried to establish a history for the komusō with historical Zen roots, the "Charter of 1614" tried to justify the actual situation of the komusō movement of the late-seventeenth century. The Fuke sect wanted regulation of the sect's members to be done by the sect itself. The government felt that the Fuke sect might be able to regulate the problematic ronin and so agreed to their requests and special privileges. By the 1840s, however, it was clear to the government that the Fuke sect could not control its members and

that the privileges and their abuse of them had caused problems and did not give the government the control it had hoped for. The Charter was repealed, therefore, in the 1840s (Sanford 1977: 420).

Fuke Sect - Way of Life

Even though the Fuke sect had political origins and some questionable members, the practices and lifestyle of the monks of the Fuke sect were focused on and directed toward a sincere desire for spiritual enlightenment. The sect itself did had a significant degree of authority over its members in the late-seventeenth century. It created strict rules regarding membership. All Fuke sect members were required to be a member of the bushi class who had not violated any of his class laws. In order to join, a samurai had to be guaranteed by a Fuke sect member of good standing. A fairly large membership fee was required, and the applicant had to provide a certification of his non-Christian beliefs, a written promise to uphold the rules of the sect, and a document showing his reasons for wanting to become a komusō.

As a member, the newly initiated monk received a Buddhist name, three seals, three items, and a long and short sword (Sanford 1977: 421). He was expected to know the story of the origin of the shakuhachi (from the *Kyotaku Denk*i) and to believe that the shakuhachi, as a tool of Zen, could have a significant effect on his

evolution and his spirituality. The three seals and the three items were proof of a komusō's membership in the Fuke sect. The three items were a shakuhachi, a *tengai* hat, and the *kesa* (Sanford 1977: 421). The Japanese *kesa,* or *kasaya* in Sanskrit, was a shawl worn by devotees of Buddha, originating in India in the 4th century BC and coming to Japan with Buddhism in the 7th century. The *tengai* was a basket-shaped hat whose purpose was to mask identity, which signified going beyond the ego and withdrawing from the material world. Made of reeds, it covered the wearer's entire face to ensure anonymity. Only the area around the eyes was not tightly woven so that the monk was able to see out. The Fuke monk was never allowed to remove his *tengai* hat except when he was in a Fuke temple, and only Fuke monks were allowed to wear the *tengai*.

The three seals included the *honsoku*, the *kaiin*, and the *tsūin*. The *tsūin* was the Fuke monk's travel permit that allowed the monk freedom of travel throughout Japan. The *kaiin* was an identification document that proved the monk was a member of the Fuke sect. Because it was renewed twice yearly, it was an important means of control the head temple had over the wandering monks. The *honsoku* was a document that explained the main tenets of the sect. It explained the connection between the Fuke sect and the Chinese "founder" P'u-k'o, as well as an explanation of the use of the *tendai*

by the Fuke monk. The *honsoku* varied slightly in text, but generally included the entire Chapter 29 of the *Lin-chi lu*, the Zen teachings of master Lin-chi, and the following explanation of the meaning of the shakuhachi.

> The shakuhachi is an instrument of the Dharma and there are numerous meanings to be found in it. The shakuhachi is made of three joints of bamboo and is divided into two sections. Each of these elements symbolizes something. The three joints are the Three Powers (Heaven, Earth and Man). The (differentiation between the four) upper and (one) lower finger holes represents the sun and the moon. The five holes are also the Five Elements (Earth, Air, Fire, Water and Space). Taken as a whole, the shakuhachi is the profound wellspring of all phenomenal things. If a man plays the shakuhachi, all things will come to him. His mind and the realm of light and dark will become one. The tengai hat is an implement of adornment of the Fuke Sect—it is an item of clothing authorized to our sect alone.
> Above the holy mountain, a singular moon,
> Its light reflected in myriad streams.
> P'u-k'o was a solitary wind
> Whose virtue still perfumes the three kingdoms (Sanford 1977: 422).

The wandering Fuke monk wore simple dark blue trousers and shirt or a long kimono. Around his neck he wore a *kenkon-bari*, a wooden sign called the "Heaven and Earth" placard (Sanford 1977: 426). On one side of the sign was the monk's spiritual name, and on the other, the words *non-born, non-dying*, a Buddhist saying that referred to the experience of the constant and eternal Buddha nature beyond the confines of time. This saying referred to the transience of the temporal world and the timelessness of the transcendent consciousness as understood by an enlightened person.

The daily life of the Fuke monks at the temples was quite regulated and disciplined. The komusō monks engaged in *suizen* meditation, *zazen* (seated meditation), and sutra chanting. Daily activity at the temple centred on playing the shakuhachi. The daily schedule for the monks included practicing martial arts, practicing the shakuhachi, and begging. Each monk was required to beg three days a month, and when begging, they played pieces including "Tōri" ('passing') and "Hachigaeshi" ('returning the Begging Bowl'). The original three pieces "Kyorei," "Kokū," and "Mukaiji," also called the *koden sankyoku* or 'three old pieces,' were played at religious rites including funerals.

Part of the spiritual discipline of these komusō monks was to beg while playing the shakuhachi during their religious travels. The shakuhachi was not only used as a means to get alms, however. It was used as a major spiritual practice and a means to achieve enlightenment (Blasdel and Kamisangō 1988: 97). The komusō also practiced healing using their shakuhachi by taking the problems and illnesses of people upon themselves while playing *suizen*. The komusō were seen as empty vessels, into which the problems of others people could be "poured" (Seldin 2000). The compositions played by the monks were not considered music but meditation. *Suizen*, the practice described early regarding the Middle Ages komosō's practice,

was refined and realized during the Fuke sect. Blowing meditation, and enlightenment through a single sound (*ichion jōbutsu*) were primary concepts of the spiritual discipline of playing the shakuhachi.

The monks would travel from temple to temple and exchange pieces with each other. These pieces, called *honkyoku* (original pieces, as opposed to *gaikyoku*, ensemble pieces) are the solo pieces of the shakuhachi repertoire and were later consolidated into a group of thirty-six by Kurosawa Kinko in the 18th century. Honkyoku were pieces that were a spiritual practice not only for the players but also for the listeners.

The musical techniques and qualities of honkyoku reflect its origin in the practice of *suizen* and Zen spiritual discipline. The rhythm is free and dictated by the breath, and melodic ornamentation allows for a fair amount of spontaneous individual creativity (Blasdel & Kamisangō 1988: 112). The form of each piece is unique, and the pieces as a group do not subscribe to a specific compositional form. While playing honkyoku, individuals are encouraged to interpret the piece in their own way: an unusual quality in a country where most music genres are highly regulated.

Morphological Elements of the Fuke Shakuhachi

The Fuke shakuhachi began to develop between 1550-1650 and is the direct predecessor of the present-day instrument. The early

Fuke shakuhachi had only three nodes and did not use the root end. During most of the Edo period, this shakuhachi was referred to as the Komusō Shakuhachi. It had five holes like the tempuku and the hitoyogiri. In the late 1500s, the standard shakuhachi pitch was A4, but until the end of the 16th century a variety of lengths of shakuhachi were in use.

Japanese shakuhachi since the Edo period have been made from a species of bamboo found in Japan called *madake* (Kō and Kitahara 1990: 74). By the early 17th century, the shakuhachi had increased in length and had become thicker and heavier. This new version also incorporated the heavy root end of the madake bamboo to be bottom of the instrument, the shakuhachi bell. The instrument also lengthened as the number of nodes changed from three to five during this period. There were both acoustical advantages to these changes as well as practical ones: the instrument could now double as a weapon for the ronin and, because of its longer length, could now play the popular miyako bushi scale (Blasdel and Kamisangō 1988: 95). The Fuke shakuhachi's large finger holes, which could be half and quarter holed, and larger diameter, which allowed the player to change the angle of how the breath was blown, gave the shakuhachi the ability to play virtually any note of any scale.

Kurosawa Kinko

Kurosawa Kinko (1710-1771) was a komusō monk who travelled throughout Japan collecting honkyoku from the different Fuke-shu temples. Kinko notated and arranged these pieces, combining similar variations of the same piece and adding a higher level of musicality to others. A high ranking samurai and a retainer of Kuroda, Lord of Mino, he was an excellent shakuhachi musician as well as a komusō monk and deeply devoted to the spiritual aspects of the shakuhachi. He is credited with the saying *chikuzen ichinyo*, 'bamboo and Zen are one' (Gutzwiller 1984: 57). He also taught shakuhachi at both Edo Fuke temples.

Notation of shakuhachi music began during the 18th century. Although honkyoku was (and still is) primarily transferred by oral transmission in a teacher-to-student method, the written notation served as a reminder, a memory device, and a method of preservation. Kurosawa Kinko's work resulted in a group of thirty honkyoku pieces, plus the three original pieces. Three additional pieces were later added, bringing the number to thirty-six (Gutzwiller 1984: 57). These thirty-six pieces later became the basis of the Kinko ryū (school) repertoire. The Kinko ryū honkyoku pieces are always played on a 1.8 length shakuhachi and are characterized by a more rhythmic quality than other types of honkyoku (Seldin, pers. comm.,

2007). Kurosawa's devotion to the spiritual nature of the shakuhachi, combined with his exceptional musicianship and determination to consolidate, preserve, and notate the honkyoku of the Fuke monks, ensured the preservation of this unique music. Without his efforts, it is probable that most of this music would have been lost forever when the Fuke sect was banned in the 19th century. Kurosawa also worked on the organology of the instrument, improving it and developing the modern shakuhachi.

Hisamatsu Fūyō

Hisamatsu Fūyō (1790-1845), a pupil of the grandson of Kurosawa Kinko, wrote the only extant documents that discuss the spiritual theories and background of the shakuhachi as a *hōki*. Fūyō discusses the practice of *suizen* as a *shugyō* (Gutzwiller 1984: 57). *Shugyō* is a religious discipline that promotes the process of liberation from the rational mind. This freedom from the rational mind, Fūyō states, will allow the practitioner to reach the level where truth is understood in the form of the "Absolute Tone," called *tettei on* (Gutzwiller 1984: 58). Fūyō wrote three essays between 1823 and 1838 about the shakuhachi as a *zenki* or tool of Zen: "Hitori Kotoba," "Hitori Mondō," and "Kaisei Hōgo."

"Hitori Kotoba" was written before 1830. In it, Fūyō discusses how to play the shakuhachi as a spiritual discipline. According to

Fūyō, the purpose of playing honkyoku is not to express emotions or to give performances but rather to develop the spirit of the practitioner (Gutzwiller 1983: 250). He explains that the beginning player must release worldly thoughts and the chatter of the rational mind and focus on his hara, or lower navel area. The student should keep his eyes closed when playing in order to encourage the exploration of the inner world beyond the rational mind. The player should not strive for beautiful tone. The techniques of *meri* and *kari* are considered very significant, as are the spaces of silence, *ma*, between each phrase. Fūyō believed that mastery of playing technique must occur before the understanding of the spirit of honkyoku could be understood and experienced by the adept. Skipping the element of technique would cause students to become only "theoreticians of the way of bamboo" (Gutzwiller 1983: 250).

"Hitori Mondō" was written in 1823 in a question-and-answer form. It discusses the fundamental nature of shakuhachi playing and its purpose. Again, the qualities of *shugyō* are addressed. Fūyō states the purpose of *suizen* is to "play in a state of freedom from the rational mind" (Gutzwiller 1984: 57). The "Hitori Mondō" also gives guidelines for playing etiquette and instrument construction. For example, one should refuse to play the shakuhachi for financial gain or personal advantage because it is a tool of Zen. It is not important

how many pieces a person knows, but rather how one plays a single piece. The shakuhachi student should not stray from the established form of the pieces, although once a practitioner has truly recognized and mastered the shakuhachi as a tool of Zen, the form of the pieces is no longer important. Everyone plays uniquely because everyone is a unique, different person. The external form of the instrument is not important to the disciple who plays the shakuhachi as a tool of Zen and shugyō. The practitioner should treat his shakuhachi as a living thing, something to bond with inextricably. Fūyō reminds the adept of the adage, "I become the shakuhachi, and the shakuhachi becomes me" (Gutzwiller 1983: 250).

The third essay is called the "Kaisei Hōgo," written in 1838. It addresses the importance of the breath to shakuhachi practice. Fūyō uses the word *kisoku* to describe the spiritual practice of playing the shakuhachi (*ki* or *chi* means 'spiritual essence,' and *soku* means 'breath'). In the Kaisei Hōgo, Fūyō talks about *kisoku*:

> In truth, the success of shakuhachi *shugyō* is dependent only on the Spirit and the breath. If the Spirit becomes enlightened, the breath becomes Spirit. If the Spirit is motionless, then the breath is in a state of perfection. That means completely to enter into Zen. (Gutzwiller 1984: 61)

He further discusses the essential element of the breath in shakuhachi playing:

> If the spirit is enlightened, breathing becomes spirit. If the spirit is immovable, breathing becomes perfect. This is the real

> entrance to Zen. As spirit resides in the body, sound is shaped breathing. Shakuhachi forms breathing into sound and is the vessel of *kisoku*, spiritual breathing. (Gutzwiller 1983: 250)

In the "Kaisei Hōgo," Fūyō states that, since the beginning of the Fuke sect, there was a decline in the spiritual focus of *suizen* because of the connection with the military class. Fūyō indicates that Kurusawa Kinko re-established the true nature of the shakuhachi, but there were only a few monks who understand the *shugyō* of the "Way of the Bamboo." Fūyō believed the practice of *kisoku* ('spiritual breath') and *mui* ('purposeless activity') would obtain the goal of enlightenment (Gutzwiller 1983: 250).

Combining a musical instrument and a tool of Zen, the belief systems connected to the shakuhachi offered the unique outlook that enlightenment, called *satori* or *kensho* in other Zen schools, could be reached through music. Fūyō's three essays are the only remaining historical documents written on the theory of *suizen* and the use of the shakuhachi as a tool to attain enlightenment through sound.

Fuke Sect - Final Phase

By the 19th century, misuse of privileges and a laxity in discipline increased within the Fuke sect. For example, by this time, any layman could join the sect if he could pay the entrance fee. Even though the Fuke sect, by government edict, was allowed solo rights to playing the shakuhachi, many laymen played the shakuhachi

personally and in ensemble music as well. Among the komusō monks, there were some who were particularly masterful on the shakuhachi, who were in charge of teaching the younger monks. This practice was called *fuki awase*. Initially, lessons were only conducted at the temple, but as more laymen began to play and the Fuke sect's rules relaxed somewhat, public studios called *fuki awase sho* developed in the towns and cities (Blasdel and Kamisangō 1988: 115). It appears that the temples did teach the shakuhachi to laymen, and teaching centres in towns were willing to issue playing licenses.

As the heads of the sect continued to lose control over their monks, the komusō became less disciplined and more troublesome, attacking villagers and extorting them for money (Blasdel and Kamisangō 1988: 118). In the 18th century, Japanese culture in general was lethargic after over a hundred years of peaceful rule. In this age of peace, spies for the government were no longer necessary, and because the sect was less valuable to the government, their special privileges diminished. In the late-eighteenth century, there were attempts to resurrect and increase the sect's special privileges. These efforts were unsuccessful, however, and by 1847, a government decree denied the Fuke their special privileges by revoking the "Charter of 1614." In spite of the effort of the Fuke sect

to control its members and reassert its reputation, it never regained its original strength.

In October of 1875, the government officially prohibited the Fuke sect. The Meiji Restoration restored the emperor to power and became a catalyst for industrialization in Japan. In the mid-nineteenth century, Commodore Matthew Perry of the United States forced Japan to enter into trade with America, thereby beginning an opening of Japan's doors to the Western world for the first time in centuries. One of the goals of the new government was to abolish the samurai class, and therefore the Fuke sect was banned. Temples were shut down and the komusō were secularized. By October of 1871, the government officially banned the Fuke sect, and by 1872, the government banned begging. This development contributed to the difficulty of using the shakuhachi as a spiritual instrument by wandering monks since travelling mendicancy was how they had made their living. The shakuhachi was becoming more and more popular as a *gakki*, a musical instrument, and its use as a *hōki* was close to extinction. One of the only options open to these monks was to play the shakuhachi as a musical instrument rather than as a spiritual tool (Blasdel and Kamisangō 1988: 123).

The contemporary period of the shakuhachi began when Yoshida and Araki Kodō of the Kinko School encouraged the

government to allow the shakuhachi to be played as a musical instrument, and by anyone of any class. This request saved the instrument from probable extinction and began the period of the modern shakuhachi and its music. The secular playing of both honkyoku and gaikyoku achieved great popularity, and new styles of playing developed throughout the country.

Contemporary Shakuhachi

While the Fuke sect was in its demise, the rise of the shakuhachi as a musical instrument was increasing in Japanese society. The creation of different and distinct schools of shakuhachi playing began to develop. In the late Edo period, the two main schools, later merging together, were the Kinko and the Ikkan. Because there were no longer strict rules governing shakuhachi practice, people could play in different styles and discover their own preferred musical techniques. Shakuhachi players in Tokyo (Edo) played primarily in the Kinko style, and those who were interested in playing *suizen* were drawn to the Meian temple in Kyōto.

The Kinko School began with Kurosawa Kinko and continued from father to son until the third generation, at which time Hisamatsu Fūyō became head of the Kinko-ryū (Blasdel and Kamisangō 1988: 119). It was primarily responsible for promoting continued interest in the shakuhachi after the demise of the Fuke sect. Today, the Kinko

School focuses on the original thirty-six honkyoku pieces notated by Kurasawa Kinko, although most students learn gaikyoku pieces before they study honkyoku. The Kinko style is centred in Tokyo although, because of its long standing, there are elements of its style found throughout the country (Blasdel and Kamisangō 1988: 129).

The Meian style players focused on honkyoku and *suizen* after the Meiji Restoration. The Meian society, created in 1883, was the beginning of the Meian school of shakuhachi. In 1881, the government legalized begging, and some were hopeful the komusō lifestyle could be restored (Blasdel and Kamisangō 1988: 124). These groups acted cooperatively, deciding on modes of behaviour and dress, and distributed licenses to beg with the shakuhachi. Unlike the Fuke sect, anyone could join (Blasdel and Kamisangō 1988: 125). In 1950, the Meian society constructed a temple in Kyōto, and twice a year different sects offer honkyoku in honour of Rōan, or Kyochiku Zenji (Blasdel & Kamisangō 1988: 79). Shakuhachi players come each year to participate in this ceremony, regardless of their particular school.

The third main group is the Tozan School, begun by Nakao Tozan (1876-1956). He was highly innovative and very successful in popularizing the shakuhachi. In fact, currently the Tozan School is the largest shakuhachi school in Japan by a large margin. The Tozan

school has no traditional honkyoku: Tozan and other composers of his school composed their own Tozan "honkyoku" from a musical rather than spiritual standpoint (Blasdel and Kamisangō 1988: 131).

20th and 21st Centuries

Shin-Nihon Ongaku

Shin-Nihon Ongaku was a movement that occurred in Japan during the 1920-30s, during which traditional instruments were changed in physical structure to allow them to play Western, equally tempered scales. After the Meiji Restoration, Western musical training became extremely popular in Japan, a development that adversely affected the popularity of many traditional Japanese instruments. The shakuhachi during this time was redesigned so that it could play Western scales and be played with Western instruments. The influence of the Western tempered scale created changes in shakuhachi construction, including changes in the position and angle of the finger holes (Tsukitani in Tokita and Hughes 2008: 153). Unlike earlier style instruments whose finger holes were evenly spaced, this adjustment allowed the player to produce major second and minor third equal temperament intervals without changing the blowing angle (Tsukitani in Tokita and Hughes 2008: 153).

Flute construction: Jinashi and Jiari flutes

There are currently two main types of shakuhachi flutes available: *jinashi* and *jiari*. Jinashi are shakuhachi usually in one piece made without ji, the urushi paste used in the bore construction of jiari shakuhachi. Jinashi flutes are typically longer, thicker, and heavier than jiari shakuhachi and usually have a rough and breathy timbre (Ramos 2009). Twentieth century developments in shakuhachi construction, including jiari flutes with lacquered bores, caused more exact pitch and other musical subtleties to become available to players (Kurahashi, pers. comm., 2007). The addition of the ji to the shakuhachi bore gives the instrument stability in timbre and pitch and larger volume and allows the shakuhachi to be played with the koto and shamisen in sankyoku ensembles as well as Western instruments (Tsukitani in Tokita and Hughes 2008: 153). In fact, most professional shakuhachi players prefer jiari flutes (Seldin, pers. comm., 2007) Before the 20th century, shakuhachi were made from one single piece of bamboo, but now most shakuhachi are made in two parts, designed for ease in craftsmanship and travel (Tsukitani in Tokita and Hughes 2008: 152).

Contemporary Use

After World War II, there was a renewed interest in honkyoku and suizen, and the influence of these pieces on modern honkyoku

repertoires has been extensive. The instrument has also achieved global use in jazz, fusion, rock, world, new age, and movie score genres internationally. Longer flutes became popular only after World War II (Kurahashi, pers. comm., 2008). Since the 1970s, there has been an increase in the number of foreigners successfully studying the shakuhachi in Japan, some of whom have become highly professional players. Japanese shakuhachi masters teach in the United States through universities and/or private workshops. Honkyoku has become extremely popular outside of Japan (Seldin, pers. comm., 2008; Kurahashi, pers. comm., 2008). The shakuhachi has persevered throughout its history, now appealing to a worldwide audience with a variety of cultural backgrounds and being used in multiple musical genres.

Conclusion

Throughout the shakuhachi's history in Japan, it has been both a *hōki* and a secular instrument, whose purpose was for meditation and to evolve the consciousness of the practitioner. It combined an instrument with a means to attain enlightenment through the practice of *suizen*.

Through out its history the instrument's design has changed significantly. The shakuhachi was originally a shorter and lighter instrument, but during the Fuke sect included the root end of the

bamboo. It originally had six holes, but now has five. Changes in construction begun in the early 20th century allowed further refinements in pitch and timbre.

Through its history, it has survived changing social attitudes and Western influence and has been played by men from many classes of society, from the court orchestras to wandering beggar monks. In the last century, its transplantation to the West has increased its popularity worldwide, and it has been included in contemporary genres such as jazz and cinema while honkyoku continues to remain popular. Its current status as a popular instrument internationally gives every indication that it has a long future ahead both in its home country and many countries worldwide.

Section III

The Avian Analogy

These five chapters explain my findings on the analogies between avian respiration and song, and didjeridu and shakuhachi performance practices. It begins with an explanation of Northern Territory rock art and its position and use in Aboriginal society. The iconology relating the bird and the didjeridu is then discussed. The following chapter explains specifically the analogies between avian respiration and didjeridu breathing practices, and avian song and didjeridu music. Using historical iconology evident in the *Taizōkai* mandala of Shingon Buddhism, Chapter Ten explains the relationship between the shakuhachi and the deity Karura and the connection between shakuhachi ideologies and esoteric Shingon Buddhist tenets. Chapter Eleven goes farther back in the shakuhachi's history to its earliest origins in China, when a close connection between the bamboo lüs, which later become the shakuhachi, and the mythical bird fènghuáng is first established. Chapter Twelve examines the analogies between shakuhachi breath techniques and performance practices and avian respiration and song.

Chapter Eight – The Didjeridu, Rock Art, and the Bird

Introduction

Evidence of the didjeridu's relationship to the bird can be found iconologically in the fifteen-hundred-year-old rock art of the top end of the Northern Territory. This section begins with an explanation of rock art, its position and purpose in Aboriginal society, and its use of symbolism, followed by an exploration of the use of myth in Aboriginal society.

Rock Art: Its Symbolic, Mythological, and Religious Significance

The most reliable way to learn about the history of Aboriginal culture in North Arnhem Land is to examine the cave paintings of the tropical far north. These paintings reflect the North Arnhem Land Aborigine's society, art, music, religion, and sophisticated and detailed observations of Nature. The rock art of the Arnhem Land Plateau region represents not only the world's longest continuing tradition of an art form, but also, because of its detailed narrative compositions, the world's longest uninterrupted chronicle of human experience. The paintings recorded the changing environment and worldview of the peoples of this region. Arnhem Land rock art reflects the complex nature of Aboriginal society and depicts the actions of spiritual beings, the abundant flora and fauna of the environment, and the experience

of hunting (Chaloupka 1999: 24). It held an important, integral, and significant place in the society and culture of the area.

The Aborigines were a non-literate people who relied on artistic means to transmit material they considered important, using graphic representations including painting, engraving, and body and ground decoration. Art objects have a major role in the social political and ceremonial life of the Aboriginal people. Art is predominantly sacred and a tangible expression of the people's religious beliefs. These religious beliefs were the inspiration for all of the arts: art was a necessity (Berndt in Berndt and Phillips 1973: 32). Symbols were embedded in these graphic representations: even the most naturalistic looking designs were not exactly, or not only, what they seemed (Berndt 1973: 107).

Aboriginal sacred art is resonant with spiritual and symbolic messages and conveys transcendental, metaphysical values and metaphysical truths to the community. It is a method for gaining knowledge of nature and its invisible Dreaming (Lawlor 1991: 290). It is accessible to all mentalities, and through its symbolism addresses the whole person rather than the mind only, thereby actualizing the teachings of tradition (Oldmeadow 2007: 14).

Rock art represents a great and shared legacy: a visual, illustrated history of human endeavour. These sites are history: these

are history books that tell of pasts more varied and more diverse than what declares itself in the written record (Chippendale and Tacon in Chippendale and Tacon 1998: 9). In the Aboriginal society, art could be considered equivalent to literacy, and rock art is a tangible expression of this point because it represents graphically an accumulated heritage of Aboriginal knowledge (Brandl in Berndt and Phillips 1973: 107). There is evidence from a wide area that rock art often played a didactic role in transmitting religious traditions (Layton 1992: 49). According to Layton "art consists of deliberate communication through visual forms" (Layton 1992: 1). Paintings were produced on a variety of objects for all major ceremonies (Morwood 2002: 108). Rock art had specific purposes, including the depiction of mythology; story telling; increasing rituals and totemic associations and associations with love, magic, and sorcery; and recording important events.

Evidence suggests that rock art, personal adornment, portable art objects, and music first appeared at about the same time in Europe, America, India, South Africa, and Australia. This worldwide chronological pattern regarding the almost simultaneous appearance of rock art might have been caused by increased social and economic complexity that required new, more sophisticated methods of information exchange (Morwood 2002: 179).

The rock art of the far north holds some of the most striking examples of Aboriginal art on the continent (Brandl in Berndt and Phillips 1973: 92). Because of the rock hardness and the rock surface's relatively inert chemical makeup, Arnhem Land has high concentrations of rock art where the conditions are right for its preservation (Morwood 2002: 182). The figurative art of Western Arnhem Land includes paintings that are more complex and less stereotyped than figurative art found elsewhere in Australia (Morwood 2002: 49). The choice of subjects and the manner in which they are portrayed can tell us much about the past values, cognitive systems, beliefs, and ideologies of the Aboriginal people of the area (Morwood 2002: 152). Rock paintings are durable, remain where the artist has placed them, and, for those who can read them, are a source of visual information.

Traditionally, all Aboriginal art was symbolic and stood both for itself and for something else (Berndt in Berndt and Phillips 1973: 33). The arrangement of the figures in itself carries meaning beyond that which can be seen and immediately understood (Brandl 1973: 166). The meaning of this art does not necessarily lie in overt subject content but in the cultural values it communicates (Morwood 2002: 157). It was expected to communicate essential truths about man in relation to his environment in a special symbolic language (Berndt in

Berndt and Phillips 1973: 33). Even seemingly mundane subject matter in the rock art has symbolic meaning and is not arbitrarily chosen. Layton speaks

> Very often some levels of meaning in particular paintings or engravings can only be discovered through knowledge of its context in the totemic geography of the Aboriginal landscape or its expression in tirual…The successful functioning of the art in its cultural context depends on the ability of other members of the community to decode its meaning at one or more levels. Visua clues are therefore deliberately encoded in both style and iconography to convey messages…(Layton 1992: 86).

The position of a motif or its association with other supplementary figures can indicate purpose in Aboriginal rock art (Walsh 1988: 37). Symbol art in any group or society remains confusing only to the uninitiated, and Aboriginal abstract art is not less complex or less meaningful than Egyptian hieroglyphics or Maya codices (Walsh 1988: 38). Maynard believes:

> The European model of art and artists . . . cannot be found anywhere in Aboriginal Australia, and the production of objects we call art are subordinated to the main purpose of the performance, almost always connected with religious belief. (Maynard 1975: 55-7)

Rock art designs and figures have levels of significance that include the superficial and exoteric and the symbolic and highly esoteric. MacIntosh believes there are at least four levels of meaning in rock art paintings, ranging from the basic identification of figures to their esoteric and religious significance (Morwood 2002: 94). In his

study of rock art in the Beswick and Tandandjal Caves in the Northern Territory, MacIntosh

> became aware of several levels of rock art interpretations: first, simply identifying the subjects depicted, then finding out the art's cultural meaning and purpose, and finally understanding its inner spiritual meaning. In other words, a depiction of a human, animal, object or event also signified an associated set of ideas, values, and beliefs which were not inherent in the depiction, but were prescribed in a culturally specific manner. Using an analogy from linguistics, the rock paintings were signifiers for a range of mental constructs. (Morwood 2002: 153)

There are many direct correlations between the spirit beings of The Dreaming and rock art. Many Aboriginal people believe that the rock art itself was created by the Dreaming beings. Traditional, local landowners say that the rock art relates directly to the land on which it is created and to the spirit beings it portrays. In fact, the beings sit in the rock, having positioned themselves in the landscape during the Dreaming. In some areas, almost all rock art is considered both to be made by and to portray a Dreaming Being (Layton 1992: 50). The art is not "art," but the spirit beings themselves, much as in the Christian religion the Eucharist is said to be the body of Christ himself (David 2002: 70). Aboriginal art is concerned primarily with nature, natural species, and the spiritual associations of these species. Very few studies, however, have examined the way these artistic systems encoded social and economic information (Morwood 2002: 117).

X-Ray Art

Beginning in the estuarine period, *X-ray art* appears in the rock art. Characterized by detailed life-size representations of human and animal species, it is defined as intellectual realism (Chaloupka 1999: 162). For example, rock art of fish species depicts exactly the shape and silhouette of the actual animal (Chaloupka 1999: 180). Some rock art depict magpie geese and other birds of the wetlands. They are usually executed in the descriptive x-ray style with internal organs detailed. The goose in Figure 8-1 is shown with its spine, heart, oesophagus, gizzard, intestines, eyes, and optical nerves (Chaloupka 1999: 185).

Figure 8-1: X-ray painting of magpie goose.
(Chaloupka 1999: 185 © New Holland Publishers. used with permission)

In the next painting of three magpie geese, the bird at the upper left is shown with its elongated trachea as well as other internal organs (Chaloupka 1999: 187; see Figure 8-2).

Figure 8-2: Four geese painting.
(Chaloupka 1999: 187 © New Holland Publishers. used with permission)

In X-ray paintings, the artists depict what they know about their subjects from two different viewpoints: what can be seen and what is not seen. Incorporated in X-ray paintings are representations of anatomical detail of animals (Brandl in Berndt and Phillips 1973: 92). This detailed observation of geese both internally and externally displays not only an understanding of animal anatomy but also an interest in it and use of it artistically.

Observation of Nature

Chaloupka calls the early Aboriginal people "scientific illustrators": they had intimate knowledge of the natural world around

them (Chaloupka, pers. comm., 2009). Some examples of figurative rock art document detailed aspects of the natural flora and fauna of the environment. This is particularly evident in Western Arnhem Land, where artists took great care to provide clues to species identification (Morwood 2002: 168). For example, artists in this region used both internal and external features as clues to identify twelve separate species of fish (Morwood 2002: 169).

Evidence in northern Northern Territory rock art of using an animal and its characteristics to symbolize or relate a concept to the viewer magnifies the intimate knowledge of the natural world the people possessed. For example, there is an association between Leichhardt's grasshopper (*Petasida ephippigera*) and Namrrgon, the Lightning Man (Layton 1992: 126). Namrrgon is painted to look like the grasshopper for a reason, which can be understood through investigating and understanding the grasshopper's natural behaviour. This Leichhardt's grasshopper mates and is most visible during the period between October and December, which is also the time of year that the most intense electrical storms occur in the region. This use of a natural species to denote qualities of supernatural beings displays not only the Aborigines' intimate knowledge of the natural world but also their use of this knowledge both symbolically in pictorial representation.

Aboriginal Myth and Metamorphosis

Mythic stories were told in narrative, in song, and in visual art forms including rock art, ground and body paintings, and emblems (Berndt and Berndt 1989: 9). Not all mythic characters in the natural world started off as human beings. Aboriginal people lived, traditionally, in close and intimate association with all aspects of nature, and the buffers that protected them from nature were minimal (Berndt and Berndt 1989: 177). In Aboriginal belief, people are intimately linked with all other living things, and shape changing and transformation was a common theme. During the Dreamtime, the ancestors could change their outward appearance at will, sometimes into mammals, birds, reptiles, or sea creatures. These ancestors are believed to be the prototypes of currently existing species (Hume 2002: 25). Both animals and people obtained their defining characteristics though their links with particular Dreaming ancestors. Specific art motifs depicting legendary heroes in human or animal form appear in body decoration, sacred objects, and rock art. These heroes were at once human and animal (Layton 1992: 31).

Traditional North Arnhem Land culture, to a large degree, is governed by sacred mythic accounts. Here the word *myth* is defined as a narrative account carrying metaphysical and spiritual messages. According to Coomaraswamy:

> The myth is the penultimate truth, of which all experience is the temporal reflection. The mythical narrative is of timeless and placeless validity, true nowhere and everywhere . . . Myth embodies the nearest approach to absolute truth that can be stated in words. (Oldmeadow 2007: 6-7)

For all Australian Aborigines, myth is the explanatory counterpart of real life. In its ritual manifestation it is part of real life. Aboriginal doctrine is ingrained in the Aborigines' mythology, ritual life, and sacred art, and each of these dimensions of Aboriginal culture hinge upon a sacramental relationship with the land itself (Oldmeadow 2007: 12).

In some myths, being human was an intermediate stage in the main character's earthly existence (Berndt and Berndt 1989: 176). From a state of being or appearing to be human, they became the natural species. As they became the species, they were not similar to the species whose shape they took, but actually the species' archetypal form (Berndt and Berndt 1989: 177). This process, the movement from being human to being animal, was believed to enlarge or widen the range of natural species. Mythic metamorphosis from human to animal and back, therefore, was a common element in Aboriginal mythic reality. Instances of Aboriginal people transforming into birds in myths are evident. These include myths from Yirkalla and Oenpelli, told to Berndt in 1946 and 1950, in which people literally transform into birds (Berndt and Berndt 1989: 192-3). In a myth from

South Goulburn Island, there is a time when all the birds were people. In this myth, a man again transforms himself into a bird (Berndt and Berndt 1989: 195).

Didjeridu Iconology

As previously discussed, the didjeridu appeared in the cave paintings of North Arnhem Land 1500 years ago, when the bamboo and eucalyptus species used to make didjeridu began to grow in the developing coastal wetlands. At the same time, the water birds, including the magpie geese, began to colonize the new habitat. The relationship of the magpie geese to the didjeridu in rock art illustrations gives valuable information about its musical history and didjeridu performance practices. According to Chaloupka, an expert on rock art painting of North Arnhem Land:

> Paintings of people in detailed compositions in which this instrument features are generally shown to be carrying a goose wing "fan" (Chaloupka 1999: 189).

Figure 8-3: Didjeridu player with feathered headdress, dancers with feathered headdresses.
(Chaloupka 1999: 189 © New Holland Publishers. used with permission)

This dates the didjeridu from the Freshwater period and not before because carrying a goose-wing fan was only possible during the Freshwater period when the geese first came to populate the area (Chaloupka 1999: 189; Moyle 1981: 325). These paintings demonstrate that from the origin of the didjeridu, a direct correlation between the didjeridu and the bird existed.

The rock paintings of the Freshwater period also show didjeridu musicians with feathered headdresses (Figure 8-3). As previously discussed, feathers are an anatomical characteristic unique to the

avian anatomy. In this painting of a ceremonial scene depicting a large group of men at Djawumbu-Madjawarrna, there is a didjeridu player and a large group of dancers decorated with feathered head ornaments. The didjeridu player himself has a large feathered ornament on his head (Chaloupka 1999: 230). His ornament is the largest and most elaborate.

This tradition is still evident in contemporary times: Djalu Gurruwiwi in traditional dress wears a large feathered headdress when playing the didjeridu (see Figure 8-4). In addition, the Rainbow Serpent itself, which the didjeridu represents (and sometimes becomes) in ceremonies and myth, has a feathered throat and is often depicted with a feathered headdress as well (Dargan: pers comm., 2007).

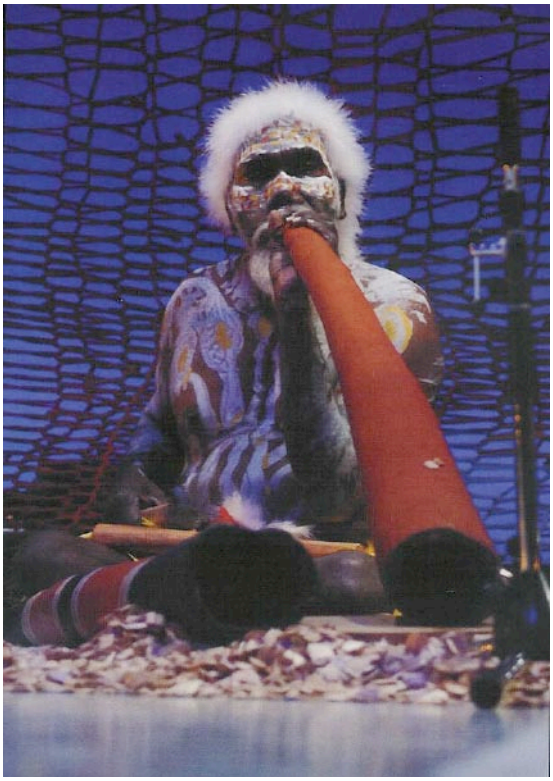


Figure 8-4: Djalu Gurruwiwi in feathered headdress. © Dinkum-J Music Productions

The intimate relationship between the magpie goose and the didjeridu in Northern Territory art is depicted in myth and art in contemporary times as well. The MakMak Marranunggu people are

from Kurrindju in the Northern Territory. The homeland of the MakMak, or the clan of the white-breasted eagle, is primarily within the Wagait floodplains area southwest of Darwin. The Tabletop Range and Florence Falls (now a part of Litchfield National Park) and the Florence and Finniss River are part of Wild Goose Dreaming. The Florence River flows in the Tabletop Range, and flows into the Finniss River, which in turn flows into the sea through the floodplains. For millennia, life in this region has consisted of the seasonal movement of the people to the high country during the wet season and down to the floodplains in the dry season (Rose et al. 2002: 9) The Wagait floodplains are exceptionally flat, and with the intense seasonal rain, the rivers are unusually dynamic (Rose et al. 2002: 116). The MakMak say that they have lived here since time immemorial (Rose et al. 2002: 2).

The MakMak clan have an intimate relationship with the natural world around them. Their strength comes from their country and their connections to it (Rose et al. 2002: 187).

> Country gives us our identity. We are created, live, die and exist in the spirit of all the natural elements . . . the air, the wind, the water, the plants and animals and the land. Our lives are formed in knowing our country. (Rose et al. 2002: 77, 94)

The relationship between the magpie goose and the bamboo didjeridu is extremely significant in the Dreaming of this area. Old Man Goose is one of creator beings who brought place and people, species, actions,

and order into being (Rose et al. 2002: 9). The term *kenbi*, 'bamboo,' refers both to the plant (*Bambusa arnhemica*) and to the instrument itself (Rose et al. 2002: 10). Using his didjeridu, Old Man Goose created the rivers in the area. Old Man Goose is depicted in the painting and the Dreaming legend to follow (see Figure 8-5).

In the painting, there is a literal relationship between the magpie goose and the didjeridu: Old Man Karramala is playing the instrument himself. The symbolic relationship between the goose and the didjeridu is not demonstrated in subtle bird motifs, but rather through a Dreaming ancestral being who plays the didjeridu, creates landscape, and calls all the other creatures to ceremony. The picture depicts the Dreaming story accompanying it. Karramala comes from the high country, encouraging ceremony and creating rivers on his way through his didjeridu. The avian/didjeridu relationship, evident in fifteen-hundred-year-old rock art, is still strongly depicted in this contemporary iconologic example of the magpie goose and didjeridu relationship.

The Dreaming Story of Old Man Goose

> In the time of creation the great creator beings, called "Dreamings" were travelling and making the world. Old Man Karramala, as Old Man Goose is called in the language of the MakMak people, started at the top of the range in the high country, and came striding down calling to other Dreamings in the region. When the rains stopped and the floodplains began to dry out, Old Man Goose started calling out for everybody to

come for a ceremony. He made the river as he came walking and calling across the country.

Figure 8-5: Map of MakMak Dreamings
(Rose et al. 2002: xiv © Aboriginal Studies Press)

Old Man Goose was walking to a place called Djulurrk (which is a billabong near the Finness River). He came striding along, playing the didjeridu and calling all the creatures to come together for ceremony. The didjeridu is called kenbi in MakMak (Murranunggu) and related languages, and at Djulurrk there are dense stands of bamboo, also called kenbi. So, Old Man Karramala blew his didjeridu (kenbi) making the rivers as he walked to Djulurrk (a major resource site for bamboo). The Florence Falls were made in the Dreaming by Old Man Karramala. (He) Blow kenbi, make a waterfall. That is where the goose story starts, there now. And all down Florence Creek 'Paekurrimala' we call it: he was walking there. Were the goose been go, (he) went on his merry way down to the junction, making this creek. (Rose et al. 2002: 9-13) That place (where

> the animals all met for ceremony called by Old Man Goose) is Djulurrk. That's bamboo there. We call the bamboo kenbi. Old Man Karramala must have planted them Kenbi goes with Goose Dreaming. Proper goose, he's a "Kenbi" man. He's got a honker! (Rose et al. 2002: 13)

The relationship between avian anatomy and the didjeridu is strong in this story of the Dreaming. Karramala's honker refers to his "windbag" or trachea. The trachea (windbag) is literally analogous to Karramala's didjeridu (see Figure 8-6). As Daiyi explains:

(Rose et al 2002: 89 © Sharon D'Amico. all rights reserved, used with permission)

> Fat goose- I'm holding up the windbag, the honker. It does make noise, you know. That's his "kenbi" (didjeridu). (Rose et al. 2002: 89)

Specific references to the magpie goose in both 1500-year-old and contemporary iconology highlight an unusual anatomical characteristic related to its breath and song, one that is fairly rare in avian species. This element is the bird's extremely long trachea, so elongated that it must wrap around itself in the bird's sternum. The magpie goose is one of the few birds that have an elongated trachea, a "windbag" far longer than other birds its size (see Chapter Five).

Although scientists have explored numerous reasons for this anomaly, the most current explanation is that the length affects the formants of the bird's sound, making the goose appear aurally to be a much larger bird than it actually is (Fitch 1999: 31). In a similar way, the didjeridu alters the sound of a player's voice, providing an aural illusion that the player is different than he really is. In fact, the didjeridu allows a person to create the presence both aurally and visually of the Rainbow Serpent in ceremony. Extremely long didjeridus were used in particular sacred ceremonies in Northwest Arnhem Land. The bird population of the Northern Territory is filled with a huge variety of species: the choice to use an image that directly relates to the magpie goose, in particular, as the symbol of the bird related to the didjeridu may offer more information about the purposeful use of magpie goose iconology.

Karramala Old Man Goose has a relationship to the Rainbow Snake as well. Karramala meets the Rainbow Snake at Djulurrk: The snake has been coming up from the sea, and the goose from above on the plateau.

> They came for the ceremony, the whole lot of them, all the animals. And kenbi man, didjeridu player. And PuleyPuley, that's the Rainbow Snake, took the fire away. They couldn't light the fire. He (the dingo) tried to make fire. He couldn't make fire. (Rose et al. 2002: 173)

This sacred geography is present today. Old Man Goose made the Florence River, and it joins the Finniss River, which was made by the Rainbow Serpent as it moved across the country. Djulurrk is a sacred site as well as a resource site. Karramala walked the two main portions of the clan's country: the highlands and the floodplains (Rose et al. 2002: 9).

MakMak people are hunters, deeply involved in predator-prey relationships (predation). Milityin (good hunters) combine abstract knowledge of the properties of living things with detailed, concrete knowledge of specific information (Rose et al 2002: 78). Their knowledge gives them life; without knowledge, survival would be difficult, perhaps even impossible (Rose et al 2002: 78). This intimate knowledge obtained through hunting gives the people comprehensive knowledge of the plants and animals around them. They know specific details of the natural world around them through close examination. For example, the MakMak know what time of year to stop hunting geese, based on what the geese have been eating, checking the throat to determine the type of grass the goose has been ingesting, which gives them knowledge of the geese's current food supply (Rose et al. 2002: 88). This close observation and knowledge of nature, the literal relationship between the geese's anatomy and the didjeridu,

help explain the holistic relationship between the magpie goose and the didjeridu depicted iconologically.

Further iconological evidence of the relationship between the magpie goose and the didjeridu is evident in the actual instrument depicted below. Figure 8-7 is a picture of a kenbi (didjeridu) with Karramala (Magpie Goose) design.

Figure 8-7: Karramala painted on the Kenbi (Didjeridu).
(Photo Guan Lim, used with permission)

Brolga, Kingfisher, and the Didjeridu

Another Aboriginal legend gives further evidence of the correlation between the bird and the didjeridu, telling the story of the brolga and the kingfisher finding the didjeridu and, by playing it, becoming men. Recounted in Canberra in 1973, by George Winunuj to Alice Moyle:

> Brolga and Kingfisher went looking for a didjeridu. Kingfisher found a log lying down. It had a hole in it. "Oh" he said. "This might make a didjeridu." So he went back and told the Brolga. He showed him the log with the hole in it. Then they both went out looking for a green tree with a hole in it. This took them a month. Ah! A green tree with a hole in it! They tapped it. They heard it had a hollow in it. They cut it to find the hollow. This measured about six feet. He (presumably the Kingfisher) tried it out first. Heard the sound was very good. Found another one. Both played together. Yirrkala mob found it from the Brolga and it went this way. Kingfisher went to western Arnhem Land. He landed at Beeswick (Bamyili) and showed them; then flew right up to Port Keats. These two birds first showed how to find the didjeridu. When they found it, they became men. (Moyle 1974: 30)

The Avian Analogy: Deeper meanings within the Avian/ Instrument Symbology

It is highly unlikely that this overt use of avian symbology in both myth and art directly related to the didjeridu was coincidental. Through their astute and intimate relationship to nature, powers of observing nature, and hunting, the early Aboriginal people must have had the anatomical knowledge of the bird's unique air sac system, if for no other reason than visually seeing the air sacs full of air in any bird that was killed and opened up for food. There is clear evidence in the rock art that the goose was hunted by spear during this time (Moyle 1981:325). Rock art depicts detailed interest in magpie geese internal and external characteristics. In addition, a bird's efficient use of air, demonstrated by its ability to fly and its sophisticated singing and song abilities, is apparent in the large groups of avian species

living in far the north. In fact, Arnhem Land is renowned worldwide for its amazing variety of birds. Acute observation of avian breathing and singing could have been used as a model for playing practices of the didjeridu. Although the exact mechanics of the bird's circular breathing may or may not have been understood, the Aborigine's precise and detailed knowledge of the natural world suggests that they may have been aware that birds breathed differently than many land mammals. At the very least, the bird's ability to fly displayed a physical feat in the air and level of efficiency in using air far beyond human physical ability.

The rock art paintings that show pictures of the didjeridu with pictures of goose-wing fans indicate another correlation relating the bird's breathing system and the didjeridu. In the avian anatomy, the secondary bronchi are separated into two groups: caudal and cranial. Cranial bronchia branch out and create a fan covering the medioventral surface of the lung. The caudal group of bronchi also forms a fan over the mediodorsal surface of the lung. The parabronchi connect the two fans of secondary bronchi (Whittow 2000: 236). Based on the rock art and their hunting, this element of avian anatomy must have been evident to the Aborigines of the time. According to Chaloupka (1999), the rock art pictures of the magpie geese "are usually executed in the descriptive x-ray style with internal

organs detailed" (Chaloupka 1999: 185). Because the rock art paintings of the didjeridu contain paintings of people carrying goose-wing fans, it is possible that the paintings may be portraying a direct analogy between the bird's bronchial "fans" and the symbolic use of the fans in the rock art.

When I spoke to Djalu Gurruwiwi in Nhulunbuy in July of 2008, I asked him about my theory concerning the relationship between the yirdaki and the bird. I asked him if the circular breathing done on the yirdaki is related directly to the special way a bird breathes, and he replied in the affirmative. I also asked him whether that is why the yirdaki players wear feathered headdresses when playing in ceremony, and he again replied affirmatively.

Conclusion

The didjeridu rock art paintings and their relationship to the bird may not only accurately date its musical history but also portray a deep connection between the bird's respiratory and vocal practices and the performance practices of the didjeridu. The rock art suggest that the didjeridu players may have copied aspects of the bird's breathing and singing practices, learning to circular breathe and create elements of didjeridu performance practices by observing and listening to birds. Perhaps the paintings served to teach and record for future generations the relationship between didjeridu breath

techniques, playing methods, and performance practices and how birds breathe and sing. The following section describes the specific details of the similarities between avian respiration and song and didjeridu playing methods and performance practices.

Chapter Nine – The Relationship between Avian Respiration, Song, and Didjeridu Playing Methods and Performance Practices

This chapter explores the relationship between didjeridu playing methods and performance practices and avian circular breathing and song. It begins with a cursory explanation of normal human tidal breathing for purposes of comparison, a description of the mechanics of didjeridu circular breathing, an exploration of the similarities between elements of birdsong and some didjeridu performance practices, and includes notated traditional and contemporary didjeridu pieces and birdsong using my system.

The Mechanics of Human Breathing

Although all breathing is, to some extent, circular in that there is a repeating cycle of inhalation and exhalation, the differences between mammalian tidal breathing and avian circular breathing are significant. Reptiles and mammals move air through their bodies in a tidal flow pattern, which means that air moves in and out of the lungs through the same pathway. In tidal breathing, the lungs fill up and expand during the inhale and contract during the exhale. When humans breathe, fresh air is brought in during inspiration and stale air

is released during expiration. The path of air during tidal exhale and inhale is shown in the schematic diagram below (see Diagram 9-1).

Air moves in and out of the lungs during normal human breathing in response to differences in pressure. When the air pressure within the alveolar spaces falls below atmospheric pressure, air enters the lungs (inspiration) and when the air pressure within the alveoli exceeds atmospheric pressure, air is blown from the lungs (expiration). Because atmospheric pressure remains relatively constant, airflow is determined by how much above or below atmospheric pressure the pressure within the lungs rises or falls, changing throughout the cycle of inhalation and exhalation. Therefore, during each normal respiratory cycle, the lung volume changes, leading to pressure difference and resulting in a flow of air into or out of the lung and establishing a new lung volume (Davis and Moores 2003: 66).

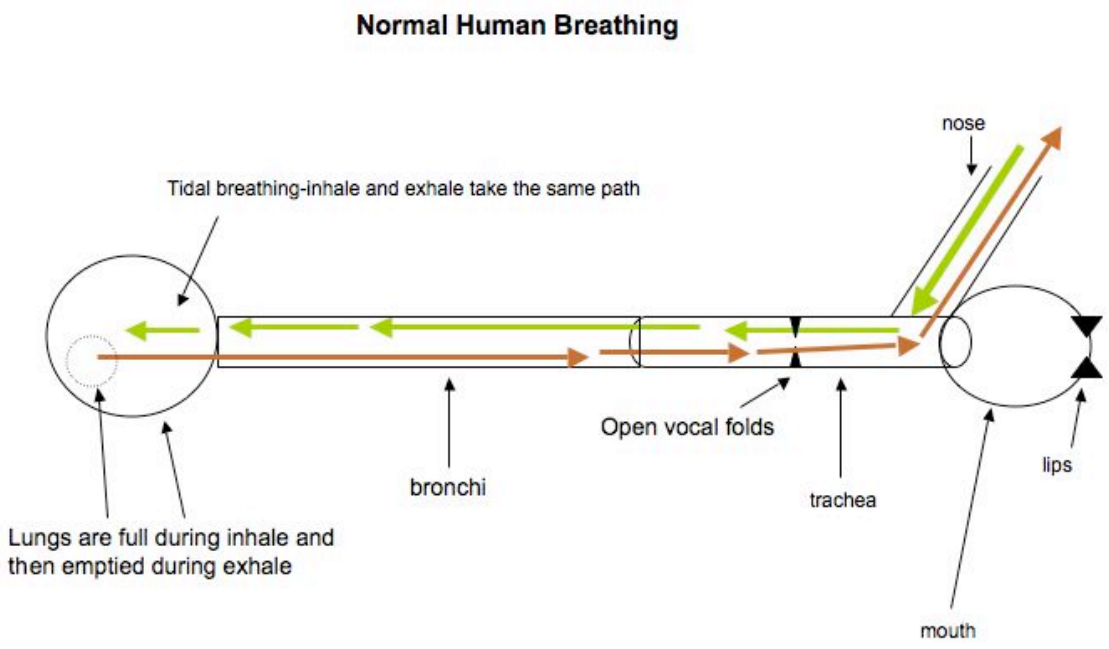


Diagram 9-1: Human tidal breathing (Diagram by L. Rubin based on diagram by N. Fletcher 2008, used with permission)

During ordinary human breathing, muscular contraction occurs only on inspiration. Expiration is passive and is created by the elastic recoil of the lung. During the period of the breathing cycle after the exhale, when the muscles of inspiration and expiration are in a state of total relaxation, the lung is at functional residual capacity. This amount is about forty percent of the volume of air the lungs contain at the culmination of a full inspiration. If the expiratory muscles of chest and abdomen contract forcibly, further reduction of the lung volume results. This amount is called residual volume and is about twenty percent of the total lung capacity. Therefore, the volume of the lung in normal tidal breathing can change by as much as seventy five percent during one breathing cycle (Davis and Moores 2003: 67).

Unlike humans, birds respire more or less continuously. Unlike mammalian lungs, which increase and decrease in volume through the process of inhaling and exhaling, avian lungs maintain a constant volume of air. This constant volume enables a bird to fly efficiently: if its lungs were to inflate and deflate with every breath, a bird in flight would constantly gain and lose altitude. The relaxed, resting volume of the avian respiratory system is midway between inspiratory and expiratory volumes (Whittow 2000: 239). Air sac pressure changes during breathing are small and similar in all of the air sacs (Whittow 2000: 240). This difference between avian and normal human tidal breathing is extremely significant when observed in the context of circular breathing: the following section explains how this playing method mimics elements of a bird's respiration far more than human tidal breathing.

Avian Respiration and Didjeridu Circular Breathing

Didjeridu circular breathing allows the production of a continuous tone from the musical instrument through continuous vibrations of the lip valve. During a quick inhale, the soft-palate valve is used to by-pass the mouth, in which some pressurized air is stored long enough for the lungs to be replenished with air (Fletcher, pers. comm., 2008). These "mini-breaths" through the nose at regular intervals "top off" the air in the lungs while the player simultaneously

and constantly sends air through the mouth into the instrument (see Diagram 9-2). Unlike human tidal breathing, in which the lungs are fully emptied with each exhale, the lungs stay fairly full throughout the cycle. In didjeridu circular breathing, the player never allows the lungs to relax to functional residual capacity, but instead uses active muscular control and quick inhales to keep pressure in the lungs and mouth while playing.

During didjeridu circular breathing, the player is no longer breathing using normal tidal respiration as other humans and mammals do, but has created a form of breathing with striking similarities to the bird's more efficient breathing method. In both, the lungs stay at a more or less constant volume of air. For a human this is accomplished by taking small mini-breaths of air while playing to keep up the lung air volume through all phases of the breathing cycle.

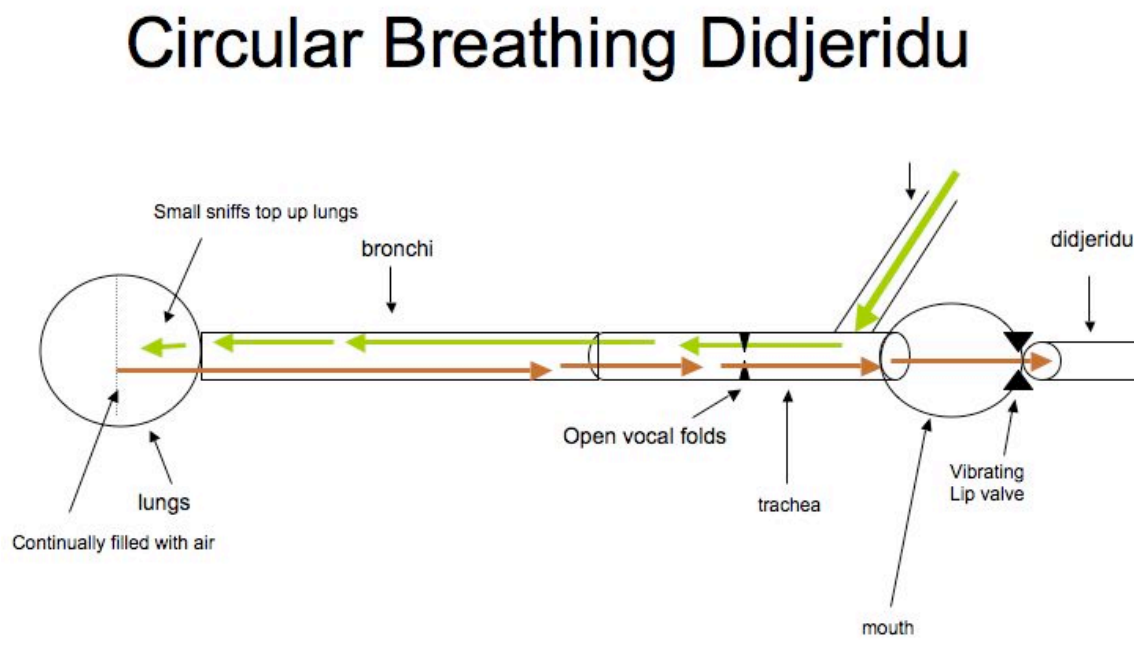


Diagram 9-2: Didjeridu circular breathing. (Diagram by L. Rubin based on diagram by N. Fletcher 2008, used with permission)

In avian breathing, the lungs are ventilated with fresh air during both inspiration and expiration. In contrast to mammals, both inspiration and expiration require active contraction of the bird's respiratory muscles. In a bird's body, the air sacs, motored by the keel, act as a bellows to move air through the system[2]. During the process of didjeridu circular breathing, the player uses the muscles of the diaphragm and the cheeks to act as a bellows, moving the air through the body and out the instrument. The lower abdomen, distended through deep breathing, and the cheeks, full of air and

[2] A bellows is a device that blows a strong current of air in a controlled quantity to a controlled location.

pressure while playing, can be seen as analogous in purpose and position to a bird's abdominal and anterior thoracic air sacs.

A didjeridu musician mimics the physiological way a bird breathes, using his own anatomical limitations. Because of the difference anatomically between a human and a bird, the analogy between circular breathing in a bird and a didjeridu player's circular breath is in some ways metaphoric rather than literal. For example, to keep the body full of air, the didjeridu player stores air in his cheeks to maintain a continual sound while a bird has no need for such a technique because of its system of air sacs. The didjeridu player closes his soft palate valve in order to maintain circular breath while the bird, because of its anatomy, has a valveless system. A bird's breathing is physiologically unidirectional: With the exception of the trachea and mouth of a bird, each of the areas of the respiratory system (bronchia, posterior air sacs, lungs, anterior air sacs) carry air in only one direction, while a didjeridu player uses the same organs and passages to both inhale and exhale, except the nose and mouth. Even with the anatomical and physiological differences between a bird and a human, the bird's natural, circular breathing that allows the lungs to be full of air and at a consistent pressure throughout all stages of the breathing cycle can be copied conceptually by the human player and used while playing the instrument.

Avian Song and the Didjeridu

In addition to the analogies to circular breathing, didjeridu performance practices have many other strong parallels to birdsong and the bird's methods of singing. These include mini-breaths, droning, syllabic singing, singing two tones simultaneously, and trilling.

Mini-breaths are a universal characteristic of avian song (Suthers, pers. comm., 2008). Like songbirds, didjeridu syllabic rhythms are punctuated with mini-breaths. Also, just as songbirds use both sides of their dual syrinx to create the illusion of a constant sound, the didjeridu player can create a smooth uninterrupted drone, whose sound is constant though its harmonic emphasis may vary. Like songbirds, didjeridu practitioners can produce two pitches simultaneously, mimicking the avian practice by droning one pitch on their instrument while singing, humming, or trilling another. Although East Arnhem Land rhythms are more syllabic and percussive than the music of the West, both styles use droning and syllabic phrasing centred around the breath.

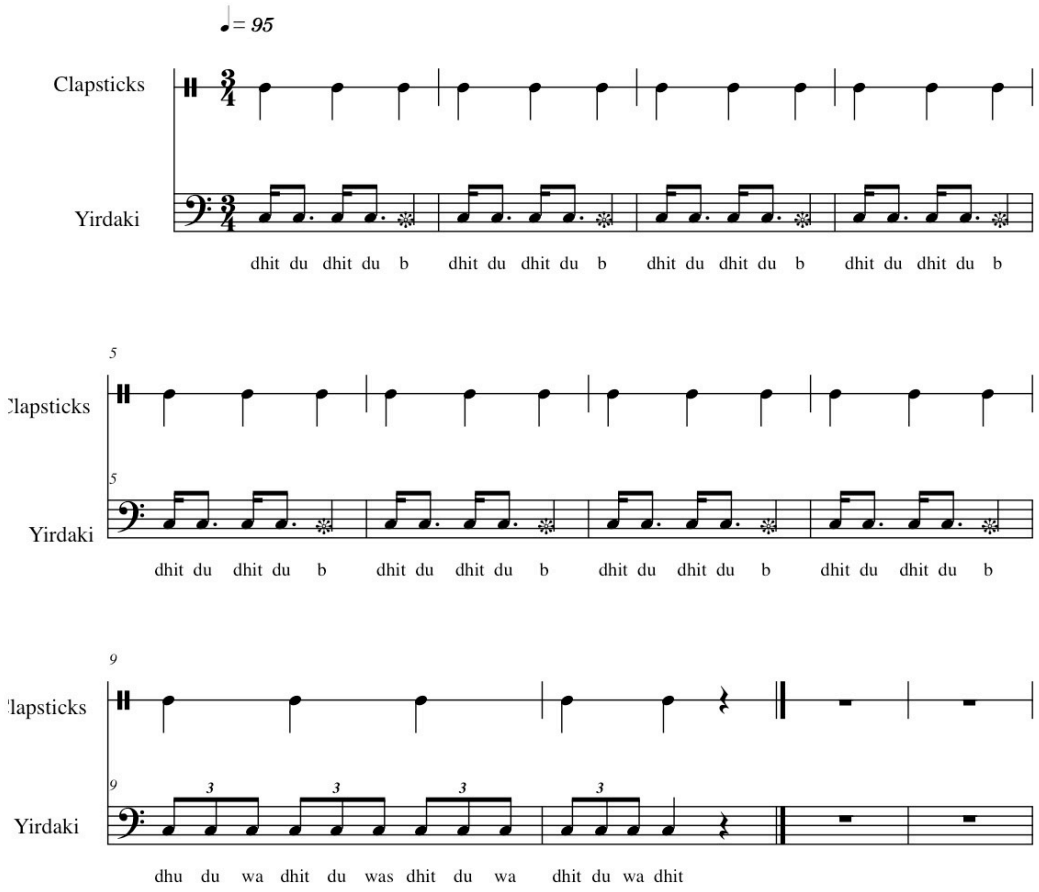
The four transcriptions that follow depict the analogies between birdsong and didjeridu rhythms, demonstrating the use in each of mini-breaths and syllabic vocabulary within a phrase. Transcription one notates a traditional rhythm that I recorded during my fieldwork

with the Gurruwiwi family, and demonstrates the syllabic quality of the music and the use of mini-breaths. Transcription two is Smeykal's didjeridu composition "Odopoved." It is a contemporary example of didjeridu music that continues to highlight syllabic phrasing and mini-breaths in its musical elements even though the sound and syllable types differ from the traditional North Arnhem Land example.

Transcriptions three and four are of actual birdsong. Transcription three is of magpie geese, since the avian iconology related to the didjeridu is specifically from this bird. Transcription four is a notation of a canary song. Each transcription is notated in my notation system, explained in detail in Appendix three. Each transcription has its own legend.

Gurruwiwi Rhythm

played by Jason Gurruwiwi



Legend
Dith, Dhu-traditional syllabic yirdaki mouth sounds
wa- yirdaki sound
b- Breath with no sound= *

Transcription 1: Yirdaki rhythm played by Jason Gurruwiwi (recorded by L. Rubin, Gove 7/08), showing syllabic structure and mini-breaths in a traditional NE Arnhem Land rhythm.

Odopoved

Ondrej Smeykal

♩= 236

theme a

ta ka V ta ka V ta ka V

4

ta ka V ta ka V ta ta V ta ka V

8

ta ka V

14

theme b

ta *ka* v ta *ka* v ta *ka* v ta *ka* v ta *ka* v ta *ka* v ta *ka* v ta *ka* v ta *ka* v

17

ta *ka* v ta *ka* v ta *ka* v

20

theme c

ta *ka* v ta *ka* ta *ka* v ta *ka* ta *ka* v ta *ka* ta *ka* v

23

theme d

ta *ka* v ta *ka* ta *ka* ta *ka* v ta *ka* ta *ka* v ta *ka* ta *ka* v

26

theme e

ta *ka* v ta *ka* v ta *ka* v ta *ka* v ta *ka* v ta *ka* ta v ta *ka* v ta *ka* v

29

ta *ka* v ta *ka* v ta *ka*

32

Legend

Ta- front mouth sound: front of tongue touching back of upper teeth

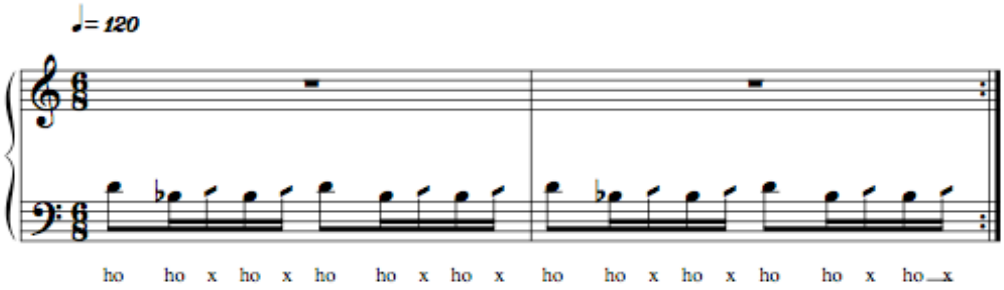
Ka- back mouth sound: back of tongue touches top of palate

Any sound with italicized font: muted sound, same mouth position

V- combination of whop and toot, w/ inhale and a buzz to create a 'dirty' sound= ◇

Transcription 2: Smeykal's "Odopoved" (© Smeykal, used with permission)

Magpie Geese

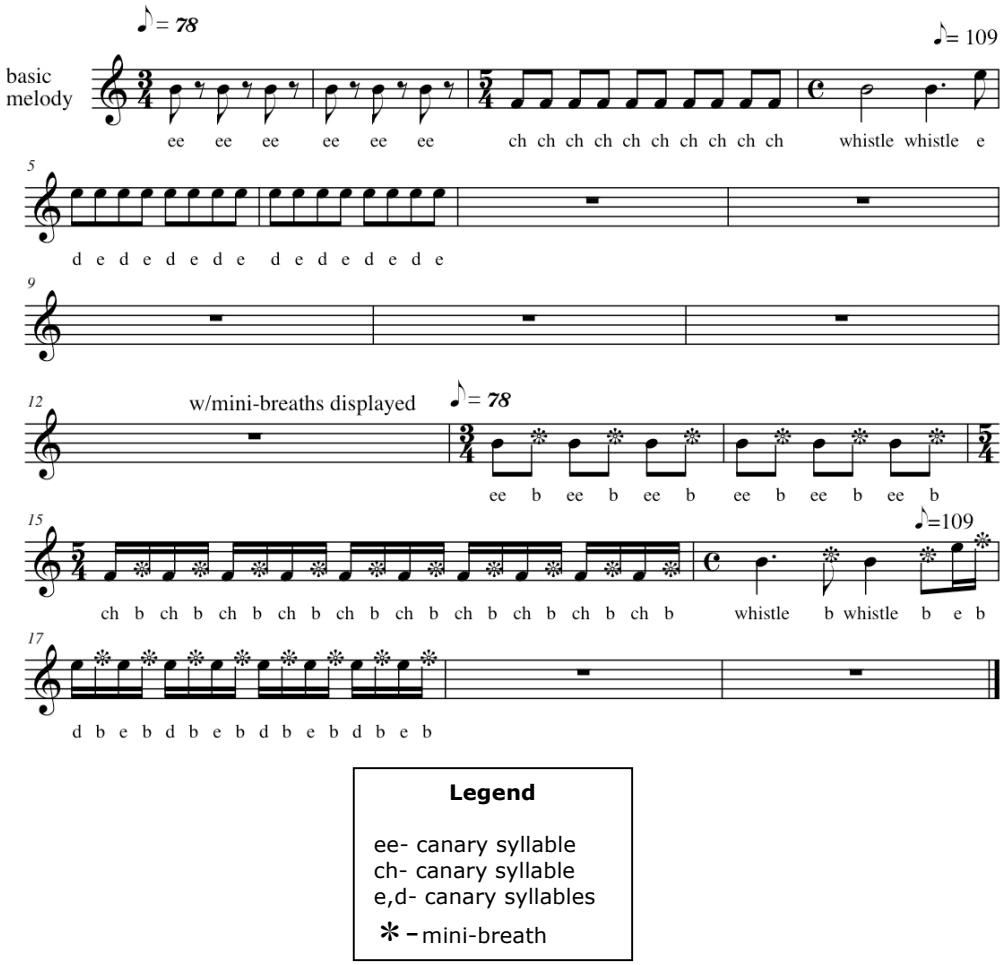


Legend
ho- magpie geese sound
x-rhythmic break in sound, may or may not depict mini-breaths

Transcription 3: Magpie Geese song, Kakadu National park, Arnhem Land. Excerpt from CD "Kakadu: A celebration of the Wetlands" by A. Skeoch & S. Koschak).

Here the syllabic nature of the song is evident, as are the spaces between syllables and the change in pitch between the different syllables. These evenly spaced breaks in the phrase may be points of mini-breath for the bird: according to Suthers, conclusive evidence of mini-breaths can only be determined under laboratory conditions (Suthers, pers. comm., 2008). Whether they are mini-breaths or not, the resulting sonic experience is the same: syllabic units separated rhythmically by small spaces of no sound within the song. These spaces are notated here with a slash note head and the symbol x in the vocable line to denote no sound.

Canary Song with Mini-Breaths



Transcription 4: Canary song with documented mini-breaths.
(Suthers, pers. comm. 2008, used with permission)

Transcription four is an excerpt from a canary song that contains mini-breaths that have been proven in laboratory conditions. In the .wav file of this canary song "the majority of the notes are separated by a mini-breath but the tempo is so fast we have a hard time separating some of the notes" (Suthers, pers. comm., 2008). Using Pro Tools, I slowed down the song to three quarters of its

original speed and notated a portion of it in my notation system. In the transcription the steady, rhythmic, alternation of syllables and mini-breaths, the variety of syllable types used in a song, and longer whistle calls (analogous to toots) are evident. The purpose of this transcription is not to suggest that the didjeridu music was copied after songbirds, who sing at a speed difficult for the human ear to separate the elements. Instead, it demonstrates using a song with documented mini-breaths the syllabic and mini-breath qualities of birdsong. The pitch in the notation, because the file has been slowed down so significantly, is lower than the original.

These four transcriptions demonstrate the similarities between both traditional and contemporary didjeridu syllabic phrasing, steady rhythm and mini-breaths and the birds' syllabic song, mini-breath use, and surprisingly consistent and steady rhythm.

Anatomic Similarities

As demonstrated with Karramala's "honker," the didjeridu also has strong ties to a bird's anatomy as well as its song. The trachea is analogous to the instrument itself, as the player's lips are analogous to the syrinx. In fact, the method in which a didjeridu player uses his lips to create sound on the instrument works the same way physiologically that a syrinx works in a bird to produce song (Fletcher, pers. comm., 2008). The player's lips, like the bird's syrinx, also

affect the pitch of the music, and the shape of the player's mouth affects the timbre.

Conclusion

The avian iconology used in Arnhem Land rock art suggests sophisticated relationships between avian respiration and song and didjeridu music and breath techniques tangibly evidenced in the actual performance practices of the instrument. This close symbolic relationship between avian physiology, birdsong, rock art, myth, and didjeridu playing methods and performance practices, and the Aboriginal people's intimate relationship to nature may explain the origin of didjeridu performance practices. Certainly, these related data points seem more than coincidental.

Chapter Ten – The Shakuhachi, Shingon Buddhism, and Karura

Introduction

There is a significant relationship between the bird and the shakuhachi evidenced in ancient Japanese art. Although Japan had a written language by the 4th century, iconology was used to convey secret teachings, ones that could be better explained through the medium of art than the written word. Iconographic teachings preserved secrecy, as knowledge and techniques were available only to the initiated who could understand the symbology. Strong evidence from the *Taizōkai* mandala of Shingon Buddhism relating the shakuhachi and the mythical bird suggests an early history of the shakuhachi as a spiritual tool of Shingon Buddhism. The symbology of the bird may have been used to explain techniques and performance practices of the shakuhachi as well as its purpose and use as a *hōki*.

The Origin of the Shakuhachi as a *Hōki*

As discussed earlier, the prevailing legend of the origin of the shakuhachi as a *hōki* is found in the *Kyotaku Denki*, written in the late 18th century, whose purpose was to prove that the komusō had a long-standing Zen history and tradition. The legend's popularity as an

accurate historical account lasted well into the 20th century. According to Blasdel and Kamisangō:

> even today, many shakuhachi players involved in transmitting the Fuke shakuhachi pieces still strongly believe the *Kyotaku Denki*, and throughout the end of the Edo period and into the 20th century, this legend was taken as undisputable fact concerning the origins of the Fuke shakuhachi. (Blasdel and Kamisangō 1988: 101)

Yamamoto further states:

> In a way, it is no exaggeration to state that the musico-religious tradition of the Fuke sect of Zen Buddhism was built on this legendary history, and the legend has provided the ethos of contemporary shakuhachi music since the end of the eighteenth century. (Yamamoto 1977: 47)

The accuracy of the *Kyotaku Denki* and its legend was brought into question in the early 20th century. Historians and researchers question its credibility as a historical source because there are too few historical materials proving the antecedents of the tradition in both China and Japan. Neither is there enough historical support concerning the alleged author of the *Kyotaku Denki* and the original copy on which it is based to corroborate the stories it relates (Yamamoto 1977: 47).

Blasdel and Kamisangō state:

> lack of any concrete proof substantiating the . . . legends concerning the origins of the Fuke sect and komusō, plus many other inconsistencies, make the *Kyotaku Denki* difficult to accept as proof . . . in short, these legends cannot be verified through cross references.(Blasdel and Kamisangō 1988:100-01)

There is no mention in any Chinese historical documents of the shakuhachi being transmitted for sixteen generations and then introduced to a Japanese monk (Gakushin) as suggested in the legend of Fuke (Blasdel and Kamisangō 2008: 96). In fact, when Nakatsuka was researching the credibility of the *Kyotaku Denki*, he read Gakushin's extensive diaries, journals, and letters from the period when he was in China and when he returned home to Japan. There is no mention that Gakushin came in contact with the shakuhachi in China or brought one home to Japan (Blasdel and Kamisangō 2008: 98).

No alternative to the Fuke legend has yet been suggested to explain the shakuhachi's origins as a *hōki* in Japan. Following the shakuhachi's iconographic path in the *Taizōkai* mandala of Shingon Buddhism, however, suggests an alternate history, to which I now turn.

How the Shingon Buddhists Combined the Symbology of the Bird with the Shakuhachi

Shingon History

An understanding of the history, beliefs, and tenets of Shingon Buddhism provides a pertinent foundation to understand how the shakuhachi was used as a spiritual tool in Japan as early as the 8th century. Tantric Buddhism as an independent religion originated in

India in the 5th and 6th centuries (Bakshi 1979: 24). Three Indian monks—Subhakarasimha (637-735) Vajrabodhi (670-741), and Vahrabodhi's student, Amoghavajra (705-774)—brought Tantrism to China in the early 8th century (Bakshi 1979: 24). This esoteric form of Buddhism, over the course of its transmission to China, had absorbed elements of a variety of cultures and religions. At that time, the Chinese culture of the Tang dynasty was the most advanced in East Asia, and Chang-an was a cosmopolitan city unrivalled at its time. In the 7th century, a Japanese monk, Kūkai, travelled to Chang-an to study this form of Tantric Buddhism. There he met Huikuo, the seventh patriarch of this lineage, who initiated him into the sacred practices. Huikuo is credited with formatting and synthesizing the two separate branches of Esoteric Buddhism in China at his time, one brought by Subhakarasimha and the other by Vajrabodhi. This lineage of Tantric Buddhism, also called Mantrayana Buddhism and Orthodox Esoteric Buddhism, was called Zhēnyán, (literally true words) in China.

Zhēnyán is the Chinese translation of the Sanskrit word *mantra*. This highly secret form of Buddhism was called Shingon in Japan, the Japanese reading of the kanji for the Chinese word Zhēnyán. Kūkai returned to Japan in 806 as the eighth patriarch of the lineage after studying with Huikuo for only eight months (Izutsu in Izutsu and

Ōmori 2002: 24). Kūkai returned to spread Shingon Buddhism and brought with him sutras, mandalas, and ritual objects given to him by Huikuo (Izutsu in Izutsu and Ōmori 2002: 24; ten Grotenius 1999: 78).

Shingon Beliefs

Shingon Buddhism is a branch of Mantrayana Buddhism and is also called Mikkyō (literally 'secret teachings'). Much of the doctrine was secret and reserved only for the initiated. The core of Shingon teaching puts emphasis on meditation practices rather than the mere reading of texts. To attain the goal of enlightenment, the practitioner practiced mudras, mantras, and meditation, often with ritual instruments and objects (Izutsu In Izutsu and Ōmori 2002: 25). Visual images in the form of mandalas hold an extremely important role and secret teachings were transmitted iconographically. According to Kūkai, Huikuo said:

> What is written in the scriptures and commentaries of Esoteric Buddhism is secret. It cannot be transmitted to a student without using painting. (Yamamoto 1987: 31)

Unlike Exoteric Buddhism, Shingon Buddhists believed it was possible to obtain enlightenment in one lifetime. To do so, the emphasis of religious doctrine focused and emphasized the daily practice of meditation techniques. It was not by reading scriptures exclusively that this speed of evolution was possible, but rather by the

practice of sacred techniques. For this goal, the practitioner practiced mudras (hand gestures), mantras (sacred syllables), contemplative visualization, and seated meditation. The core belief of the Shingon teaching is that, through specific meditation practices, the goal of enlightenment in the present body and in the present lifetime was attainable. To attain this goal in a tangible way, the Shingon practitioner used many types of religious practices.

Many Shingon Buddhist teachings are secret, profound, and obscure (Tanabe in Izutsu and Ōmori 2002: 12). Techniques are kept private and only transmitted orally between teacher and disciple. Therefore, much of the knowledge is not kept in written form. In fact, until the 1940s, no book on Shingon had ever been published anywhere in the world, including Japan. What is obscure about Shingon is the meanings underlying many of its visible forms. This obscurity of meaning is very pronounced in Shingon art (Tanabe in Izutsu and Ōmori 2002: 12). Kūkai emphasized that the teachings of Shingon Buddhism were "so profound as to defy expression in writing" and so "are revealed through the medium of painting" in which "all the essentials of the Esoteric Buddhist doctrines, are in reality, set forth" (Tanabe in Izutsu and Ōmori 2002: 13).

Shingon art is often used as a medium for meditation practice. The yogic training engaged in by the Shingon student usually involves

a specific deity represented in painting. The practitioner uses mudras, mantras, and visualizations to unite the physical, verbal, and mental activities of the practitioner with those of the deity. This identification with the deity through these practices is the core of Shingon practice. Ritual instruments and objects are also used to help achieve this goal (Izutsu In Izutsu and Ōmori 2002: 26). A huge variety of mandalas and statues for many of these individual deities were created and used for these kinds of practice.

Shingon Tolerance and Assimilation from Other Systems

Shingon Buddhism is a comprehensive system of Asian culture characterized by religious tolerance (Izutsu in Izutsu and Ōmori 2002: 26). Esoteric Buddhism expanded the earlier Buddhist practice of incorporating both local and Hindu gods as protectors of Buddhism (Tanabe in Izutsu and Ōmori 2002: 14). The Buddhist Tantric tradition combined deities of Mahayana Buddhism, the gods of Indian Brahmanism and Hinduism, and elements of Indian and Chinese astrology. The inclusion of gods both native, foreign, and Buddhist gives evidence of the Tantric Buddhist view that nothing exists outside of the sacred order: all gods, no matter what their origins, are equally divine (Tanabe in Izutsu and Ōmori 2002: 15). Before Buddhism travelled abroad from India, Brahmanical deities were incorporated into Buddhism (Bakshi 1979: x). As the tantric teachings moved

through Asia, they absorbed the religions, local beliefs, and gods of the areas they came through. These deities migrated to Japan as part of the Buddhist pantheon (Bakshi 1979: xi). The use of these Hindu gods within Esoteric Buddhism has direct relevance to the early history of the shakuhachi.

Mandala or Mandara

A *mandala*—or *mandara* in Japanese—is a visual representation of the universe and refers to a realm where enlightenment and meditation practice take place. It literally means 'to possess the essence.' In Shingon Buddhism, mandalas are visual and interactive aids used to assist the student by depicting secret teachings in an iconographic, symbolic form, explaining elements of spiritual practices to those who have been initiated. These visible images are considered to be perfect vehicles for conveying the truths of the doctrine at a more profound level (Mammitzsch 1991: 340). According to the *Ryōbu-mandara-giki*:

> The mandalas are the dharma of the Buddha transmitted secretly. (The wisdom) cannot be expressed in words, so it is manifested to the yogin in illustrations. . . . Esoteric Mantrayama is so profound that it is beyond expression and oral explanation. (Chandra 1971: 9)

Originally, Indian esoteric mandalas were created on the ground and disposed of after each ceremony, but when Tantric Buddhism reached China (and then Japan), mandalas were painted and hung.

Mandalas could represent ideas both through Sanskrit characters that symbolize specific deities or by the actual representation of the deities themselves. Most often, these mandalas revealed the esoteric schema of the universe and elements of Buddha's nature represented in human form. To express experiences transcending normal daily life, symbols were used to help bridge the chasm between the unseen mystical world and the mundane world (Mammitszch 1991: 335). In a mandala the language is symbolism: it is a paradigmatic structure in which everything accounts for something. Through understanding the symbolism related to the position within the mandala, the colours used, the characteristics of the deities, the meaning of the items they held, and many other elements, the adept can gain the wisdom the mandala possesses.

The Ryōkai Mandala

The two primary mandalas of Shingon Buddhism are the Mandalas of the Two Realms, or the Ryōkai Mandala. The Ryōkai mandala is a pair of mandalas, the Diamond World (or *Kongōkai*) and the Womb World (or *Taizōkai*). The *Kongōkai* represents the transcendent world, and the *Taizōkai* represents the world of the five elements: fire, water, earth, ether, and wind. The Ryōkai Mandala represents one of the most impressive efforts of capturing the doctrine of Shingon Buddhism in a tangible, iconographic

representation (Kiyota 1978: 105). Brought to Japan by Kūkai in 806, it is not only a vital part of the ritual and doctrines of Shingon Buddhism, but one of the most important works of Buddhist iconology and art found in Japan (Mammitzch 1991: 339). According to Kūkai, every important Shingon doctrine, philosophy, and concept of Buddha is contained in the two mandalas (Kiyota 1978: 104). The secret practices of the mandala are not a regular part of the religious life of the lay community, but are reserved for very few of the members and require lengthy initiations (Mammitzsch 1981: 323).

Kūkai's teacher Huikuo is credited with bringing together the Womb World and the Diamond World traditions when he synthesized the two branches of Tantric Buddhism (Yamasaki 1996: 149). He then transmitted this new synthesis to Kūkai (Mammitzsch 1991: 327; ten Grotenhuis 1999: 3, 37). When the mandalas first came to China separately in the early 8th century, they were considered to be of equal but separate status. Huikuo received the Womb world teachings from Shubhakarasimha's disciple Hsuan Chao, and the Diamond world teachings from Vajrabodhi's disciple Amoghavarja. It is probable that Huikuo was the first Mikkyō master to learn the teachings of both lineages (Yamasaki 1996: 149).

According to Kūkai, Huikuo urged him bring the teachings of Tantric Buddhism, including the Ryōkai mandala, back to Japan.

Huikuo predicted immanent disaster for the Tantric school of China (Mammitzsch 1991: 327). His premonition proved correct: The Tantric traditions in China did not endure the anti-Buddhist persecutions and the collapse of the Tang dynasty. It was only in the safe environments of Japan, initially, and later Tibet, that the traditions of Tantric Buddhism survived.

Huikuo had a copy of the Ryōkai mandala made for Kūkai under the supervision of the Chinese court painter Li Chen. It was copied from a Chinese original in use at that time. This copy reached Japan in 806. The term *Genzu*, which means 'current' or 'prevailing' pictorial version, refers to this pair of the Ryōkai mandala that were brought to Japan by Kūkai in 806. Because the frequent use of the mandalas in rituals caused wear, the mandalas were carefully copied and then recopied as early as 821 and have been transmitted to contemporary times in what is believed to be close to their original form (Mammitzsch 1981: 325-326). The transmission of the mandala to Japan took the mandala out of the process of further evolution: It remained a living part of the tradition of Tantric Buddhism in fossilized form. The images themselves have remained virtually unchanged, as have their place in the rites of Shingon ritual. Therefore, the mandala and its practices remain in an 8th-to-9th century time capsule, seemingly frozen in time (Mammitzsch 1991: 325).

The two mandalas are based on two texts, the *Dainichi-kyō* (Mahavairocanabhisambodhi-sutra) for the *Taizōkai* and the *Kongōchō-kyō* (Vajrasekhara) for the *Kongōkai*. Much of the information about specific elements of the mandala is not evidenced in either text but was transmitted orally. There are four types of articulation for each mandala. The Dai, or great mandala, shows the deities in human-like form. The Shuji (Bīja) mandala expresses each of the deities as a mantric syllable written in Siddham calligraphy. The Karma mandala shows the deities in third dimensional depiction, and the Sanmaya (Samaya) mandala shows the deities either by the attribute or the mudra particular to each. The *Taizōkai* mandala (see Figure 10-1) has direct relevance to the shakuhachi's history, as described in the following section.

Figure 10-1. (*Taizōkai* Mandala 9th C. Saiin, Tōji Temple, Kyōto)

The Taizōkai Mandala

The *Taizōkai* mandala has been virtually unknown outside of Japan. Though based on the *Mahavairocana sutra*, it is not an exact

pictorial rendition of any part of the text and has much added to it that is not written (Mammitzsch 1981:1). There are 409 deities represented in the Womb world mandala, this profusion reflecting both the inclusive nature of Shingon Buddhism and its tendency to personify its philosophical concepts into images (Tanabe in Izutsu and Ōmori 2002: 13). The *Taizōkai* is composed of four rows, or layers (Snograss 1997: 184). The central hall is surrounded by three rows of halls on the north and south and four rows on the east and west (Kiyota 1978: 92). Each section of the mandala has specific deities and specific purposes. There are three main types of beings present in the mandala: Buddhas, Bodhisattvas, and Deva images. The mandala is also split into three sections: the Buddha section, the Lotus section, and the Diamond section (Figure 10-2). The three sections represent the three virtues: the Buddha section represents meditation, the Lotus section compassion, and the Diamond section knowledge and wisdom (Snodgrass 1988: 201).

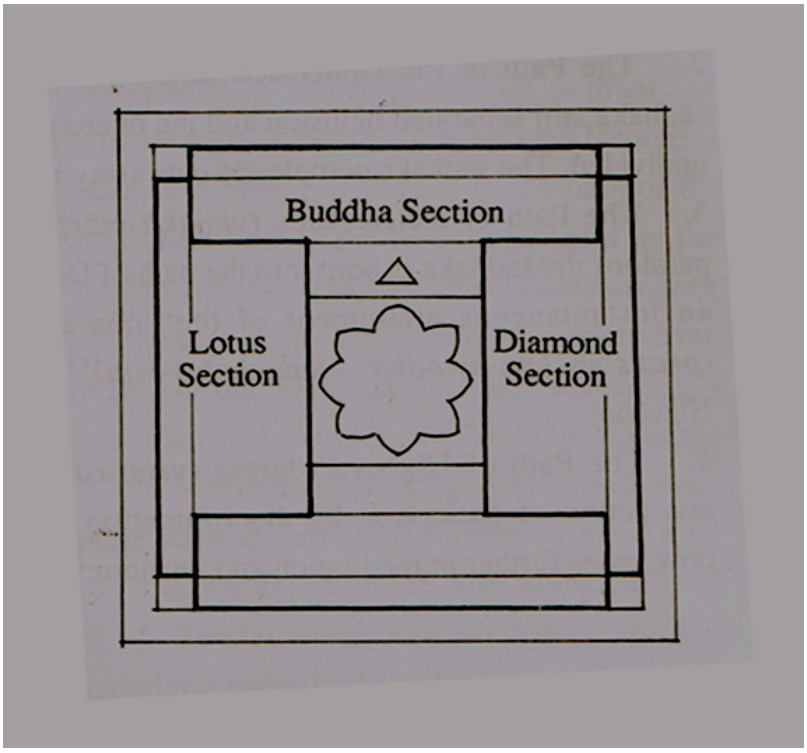


Figure 10-2. The sections of the Taizōkai mandala (Snodgrass 1997: 203 © Aditya Prakashan, used with permission)

The outer enclosure, closest to the edge of the mandala, is part of this Diamond section of the mandala. Snograss calls this area the 'Mansion of the External Vajra Section' (Snograss 1997: 185). It outlines on all four sides the inner areas (see Figure 10-2). It is this outer section that directly relates to the shakuhachi. This section contains the Deva images, who are the guardians or protectors of the Buddha and the mandala itself (Kiyota 1978: 92). These deities collectively represent the world of the six destinies, which are the indispensable enlightenment materials.

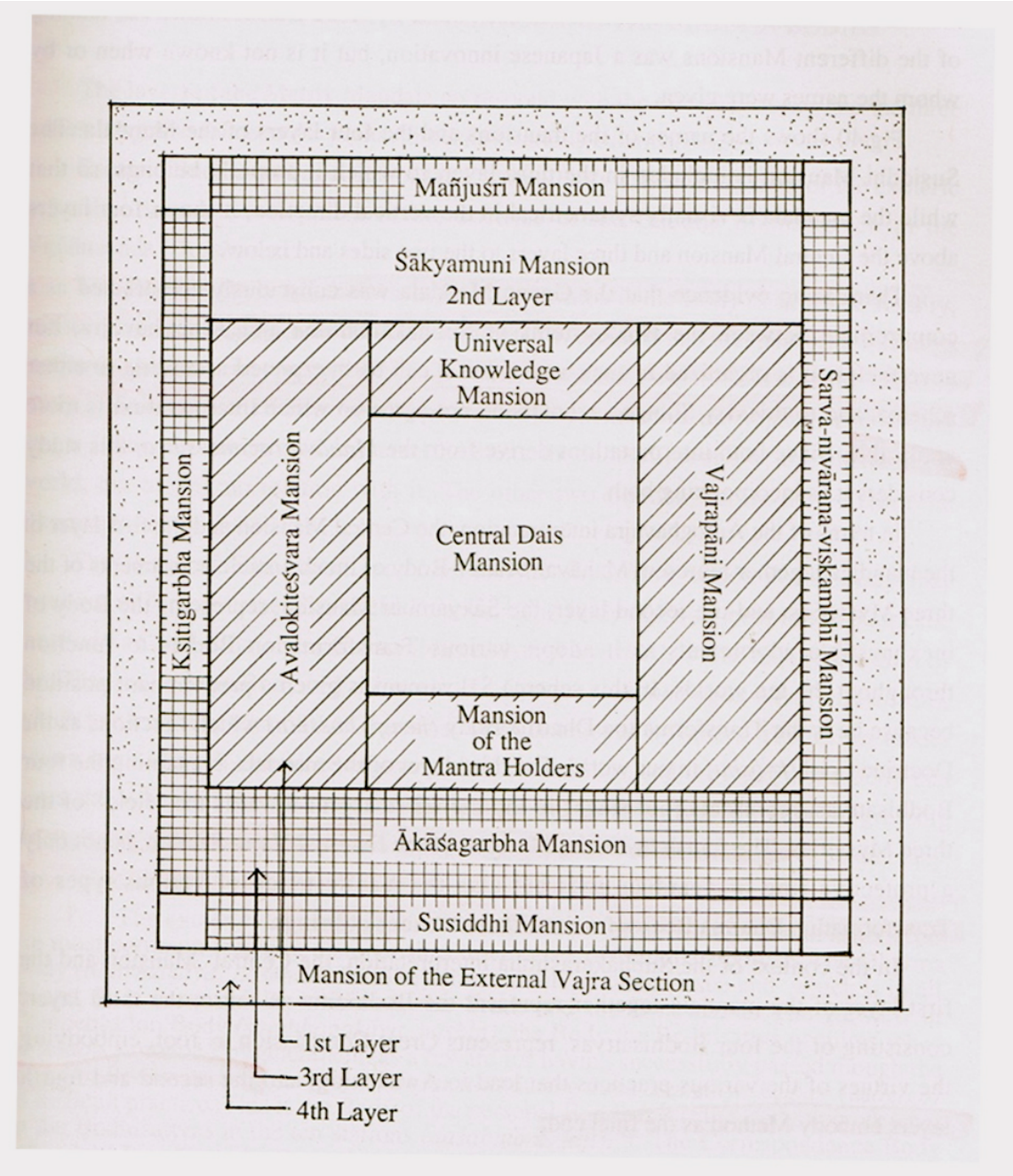


Figure 10-3. The four layers of the Taizōkai mandala. The outer section, the Mansion of the External Vajra Section, goes around all four sides of the mandala (Snodgrass 1997: 185 © Aditya Prakashan, used with permission).

This outer section also symbolizes *upāya*. *Upāya* is a Sanskrit word that means skilful or expedient means, or methods or strategies of practice that will bring the practitioner to enlightenment (Rambach 1979: 104; Snodgrass 1988: 186). *Upāya* is a key principle of Mantrayana Buddhism and refers to the Buddha's strategies or devices which when practiced lead to enlightenment and nirvana (Pye 2003: 1). A pair of Karuras are located in this outer section of the mandala. Karura is the deity who has direct relevance to the shakuhachi.

Garuda or Karura

Garuda is a bird deity of Brahmanism who is the king of all birds. Garuda's name became *Karura* in Japan. He is usually depicted with wings and both avian and human features. As one of the protectors of Buddhism and the Buddhas, Karura enjoyed a revered position in Japan. Karura is located in the lower right, outer section of the *Taizōkai* mandala. Figure 10-4 shows where the Karuras are located in the mandala, and Figure 10-5 and 10-6 show closeups of the Karuras.

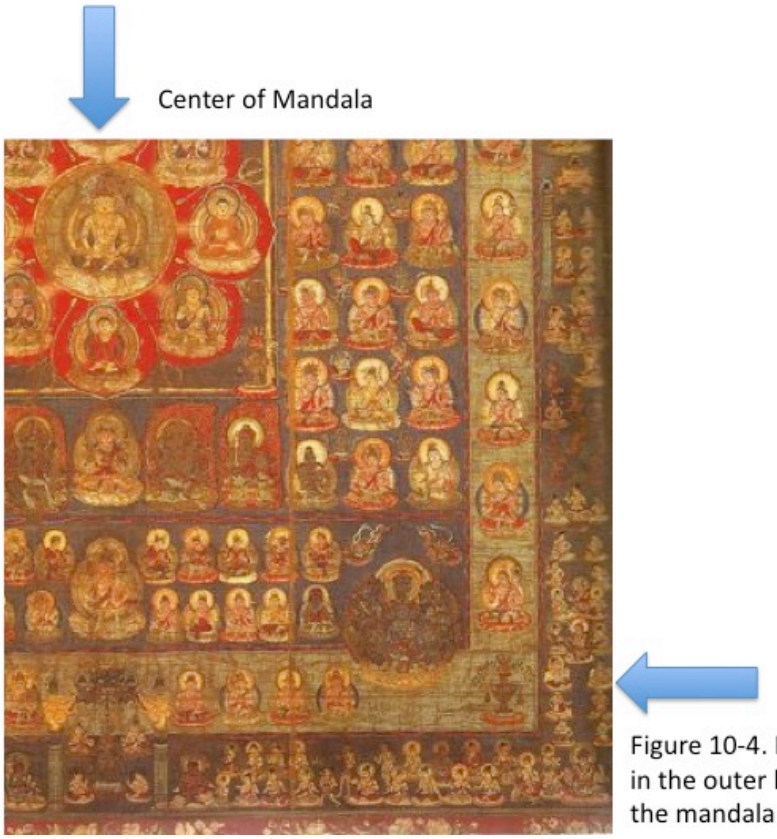


Figure 10-4. Karuras, located in the outer layer of the mandala

(*Taizōkai* Mandala 9th C. Saiin, Tōji Temple, Kyōto)

In all renditions of the mandala, Karura is shown in a pair. The female Karura is playing the end-blown flute, and the male is playing the hora. In no other area of Asia does Garuda have a relationship to a flute, and in Japan the shakuhachi is the only end-blown flute (see Kishibe 1984, Malm 2000). According to Bakshi:

> Garuda's association with naga or snake is common in India. Karura playing on flute is but a curious idea conceived by the Japanese Buddhists. Karura in Japan, as it appears, was also regarded as a divine being with independent entity. (Bakshi 1979: 138)

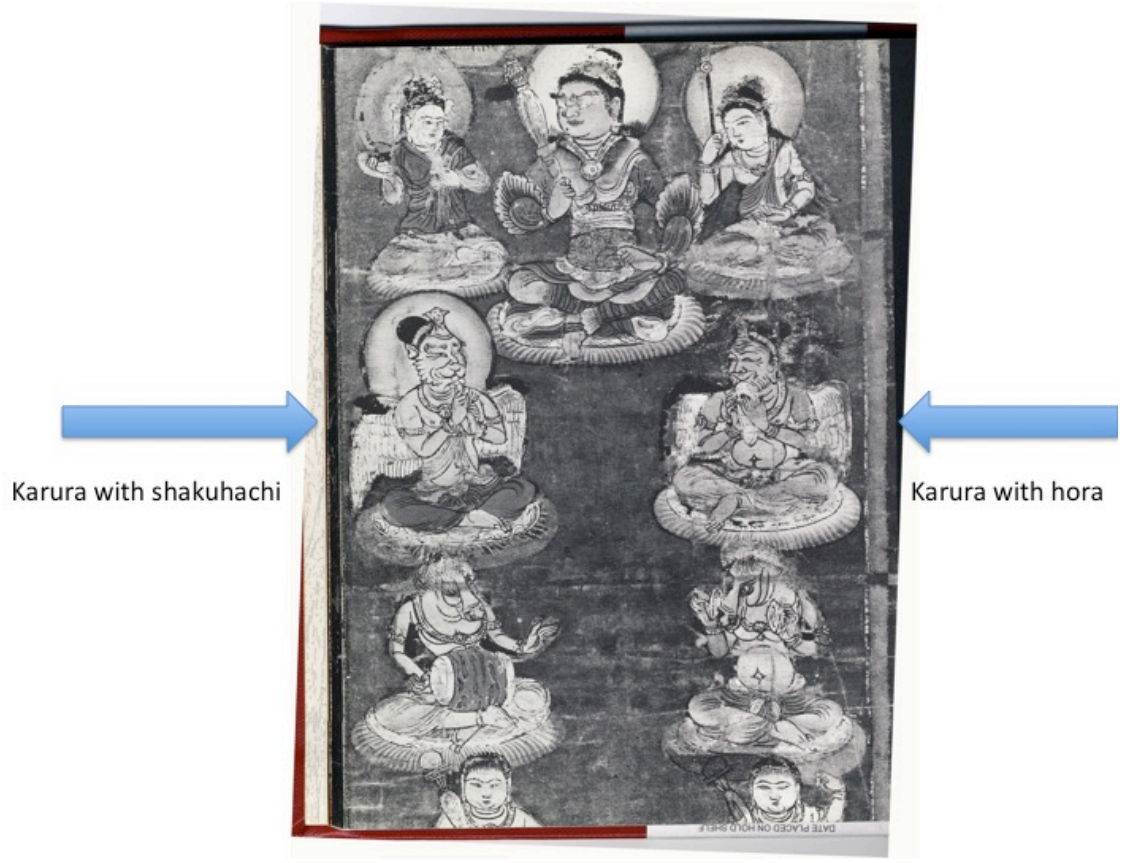


Figure 10-5. Closeup of the pair of Karuras. Tōji mandara.
(*Taizōkai* Mandala 9th C. Saiin, Tōji Temple, Kyōto)

Figure 10-6: Karura in the Taizōkai mandara
(Chandra 1971: 201. used with permission).

The hora, or conch shell, is a sacred Buddhist instrument symbolizing the change of the profane to the sacred (Hitoshi 2001:121). It is one of the ritual objects Kūkai

brought back from China. Used for setting a rhythm in sutra readings, blowing the hora symbolizes the preaching of the Mahavairocana-sutra from which the mandala is derived (Hitoshi 2001: 80). That the shakuhachi was paired with the hora, an instrument of significance in Shingon Buddhism, shows the shakuhachi was clearly held in high esteem.

Pre-Taizōkai Versions of Karura

The Taizōzuzō, originally drawn by Subhakarasimha in the 8th century, is the oldest existing collection of iconographic sketches of the deities that later appear in the Ryōkai mandala. It contains pictures of Garudas, but these Garudas have no relationship to a flute. The Taizōzuzōkyō is another pre-Ryōkai collection of sketches that shows a Garuda, but again with no flute (see Figures 10-7 and 10-8). Because Huikuo is believed to have been the first to design the Ryōkai mandala, the addition of the shakuhachi to Karura is most

Figure 10-7. Taizōzuzō early 8th century (Ishida 1979c: 93)

likely accurately attributed to him. Although he may or may not have played the shakuhachi, it is clear that he purposefully placed the instrument in the *Taizōkai* and therefore was considered a method of *upāya* based on its specific placement. He is, therefore, more probably the Chinese ancestor of the shakuhachi as a spiritual instrument than Fuke of the spurious *Kyotaku Denki* legend, and Kūkai more probably the Japanese ancestor than the centuries later Gakushin.

Figure 10-8: Taizōzuzōkyō early 8th century (Ishida 1979c: 27)

Although there is no flute in the Taizōzuzō and the Taizōzuzōkyō, the images of snakes are evident in these early Karura sketches. Garuda has an integral relationship to snakes or *naga,* the divine serpents. This relationship has multiple meanings, myths, and symbology.

Some later versions of the *Taizōkai* mandala show changes in Karura's form and his playing of the flute, showing the effects of time

and artistic interpretation. Comparing the 9th century version of the *Taizōkai* to the 19th century Hasege copy of the same mandala provides an example of this change. In the later Hasege copy the shakuhachi changes to a transverse flute (the Karura on the left in both pictures, see Figures 10-9 and 10-10).

Siddham, Bījas, and Dharma Mandalas

During the 6th-12th centuries in India, China, and Japan, Buddhists used the Siddham alphabet for writing Sanskrit and, in particular, for writing mantras and sutras. In contrast to India, Siddham in Japan and China was used only for sacred writing (Stevens 1981: 6). Kūkai learned Siddham while he was in China and enthusiastically promoted Siddham when he returned to Japan (Stevens 1981: 10). A Siddham seed syllable, or *bīja*, is an aspect of a particular concept, a Shingon Buddhist doctrine compressed into a single sound. It is called a seed syllable because it contains the integral essence of a principle analogous to the way a seed holds the future parts of the fully matured plant (Snodgrass 1988: 52). Shingon Buddhists believe that the concentrated nature of these seed syllables makes them more potent and pure than an image (Stevens 1981: 19).

Figure 10-9. detail Saiin Tōji Mandara 9th cent. (Tōji Temple, Kyōto).

Figure 10-10. detail Saiin Tōji mandara, Hasege version, 19th cent. ((Tōji Temple, Kyōto).

Figure 10-11. Siddham syllable (bīja) *kha* (illus. by M. Doherty: used with permission).

Dharma mandalas are a type of mandala in which the deities are represented by Siddham seed syllables instead of pictures. They show the universe as a system of sounds (Stevens 1981: 27; Rambach 1979: 64; see Figure 10-12). In the Dharma version of the *Taizōkai* mandala, the two Karuras are represented by the Siddham syllable *kha* (see Figure 10-11). *Kha*'s ultimate meaning is emptiness, or space (Snodgrass 1988: 19). It is one of the five sacred sounds of Shingon Buddhism. *Kha* also promotes freedom from impediment and represents air (Stevens 1981: 69).

In ancient writings, Karura is further associated with the syllable *kha* (Bakshi 1979: 138). The *Asaba Shō*, a medieval Japanese Tendai[3] encyclopaedia written in 1259, describes a ceremony:

> There is a lotus throne in the middle of a palace with the letter *kha* on it. The letter changes into a flute. The flute changes into Garuda. He has a flesh colored complexion. His face is like that of Garuda. His body is like that of a heavenly being. He plays flute. He is surrounded by members of his retinue. (Chadhuri 2003: 152)

[3] Tendai is the other sect of Esoteric Buddhism found in Japan, brought to Japan by Saichō (767-822). Kūkai and Saichō founded, respectively, the Shingon and Tendai schools of Buddhism. Shingon is a purely esoteric, or Mantrayana school, whereas the Tendai school is primarily an exoteric school focused on the Lotus Sutra, but incorporating esoteric elements. Both still use Siddham for writing mantras.

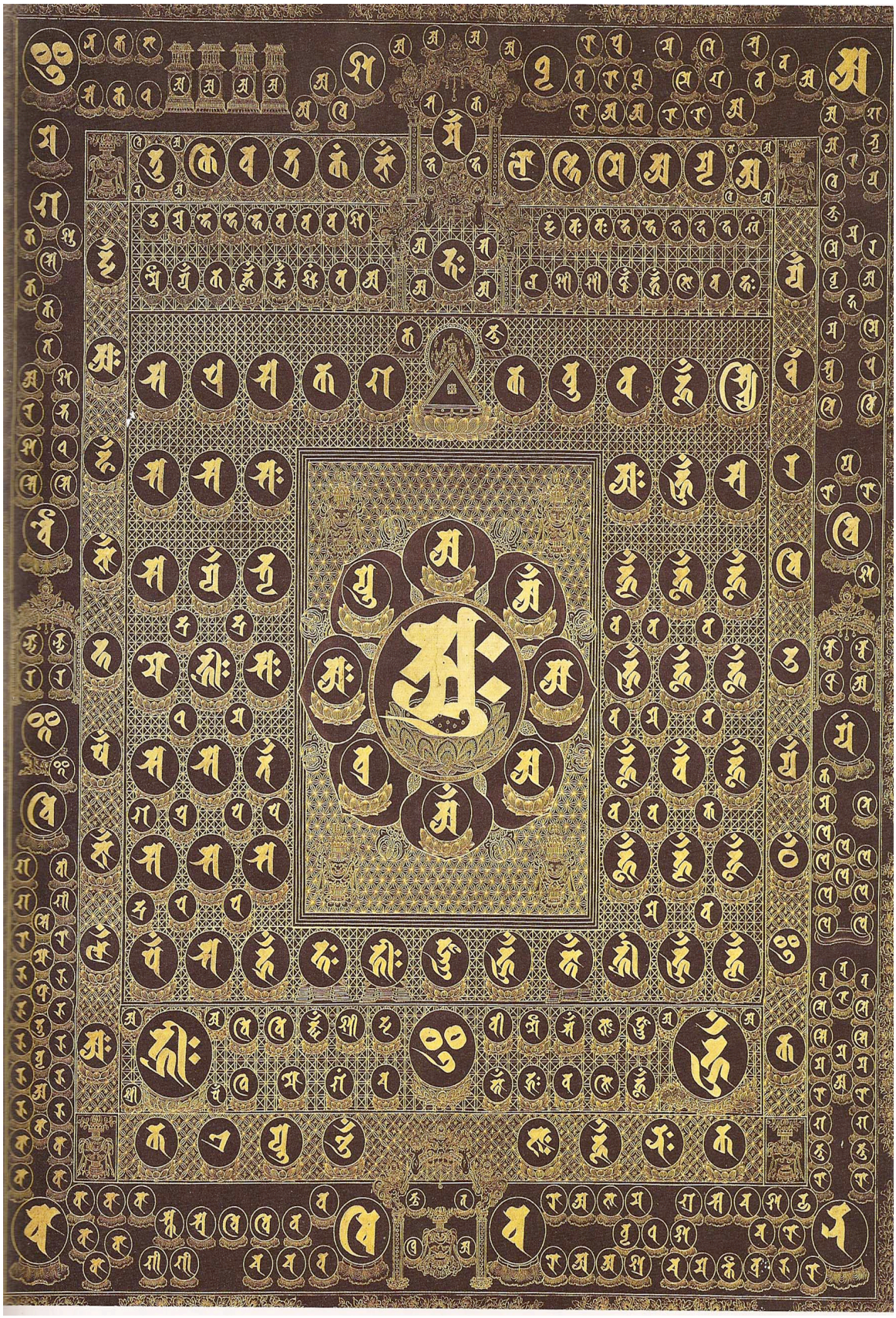


Figure 10-12. Taizōkai Dharma mandala (Toganoo 1926: 22 plate 1)

The conch shell, or hora, is also described in a pre-*Taizōkai* source as "emptiness wisdom" (Mammitzsch 1981: 123).

Mudras

Shingon Buddhist practice also includes the use of *mudras* or ritual manual gestures. Each mudra is accompanied by a specific sound, and every finger has particular significance linked to a specific aspect of the Universe. Through this combination of mudra and sound, the adept can enter into contact with the Universe (Rambach 1979: 70).

The knowledge fist is one of the most powerful mudras of Shingon Buddhism (see Figure 10-13). The five fingers of the left hand symbolize the first five elements: earth, water, fire, air, and space. Four are bent in the knowledge fist, and only the left index finger is raised. The extended left index finger corresponds to the element air—or wind—and symbolizes the vital breath (Snodgrass 1988: 139). The fingers of the right hand, which represent the five wisdoms, surround the left forefinger. The two hands together in the knowledge fist mudra, therefore, represent the non-duality of principle and knowledge.

Figure 10-13: The knowledge fist mudra
(detail *Kongōkai* mandala, Kojimadera, Nara prefecture)

Careful examination of Karura holding the flute shows a marked similarity to the knowledge fist mudra (compare Figures 10-6 and 10-13). I suggest that the manner of holding the shakuhachi was purposely designed to mimic the form of this mudra. The shakuhachi

itself substitutes for the left index "wind" finger in the mudra. Further, both Karura's right index finger and the right index finger in the knowledge fist are arched in a similar manner.

Fukūjōju Nyorai

Further evidence within the mandala links the shakuhachi with the element wind, the concept of *upāya*, and Karura. The *Kongōkai* and *Taizōkai* are two parts of a whole (the *Ryōkai* mandala) and symbiotically interrelated: multiple, layered relationships and meanings can be found between them. Fukūjōju Nyorai (Sk. Amoghasiddha), or the Buddha of the North, is one of the five Buddhas of Shingon Buddhism who represent the five wisdoms. This deity is located in the *Kongōkai* mandala and depicts multiple symbolic correlations to the shakuhachi: he has Karura as his mount, his element as wind, and he represents and embodies *upāya*.

Further Correlations between Shingon Buddhism and the Shakuhachi

The link between the shakuhachi and Shingon Buddhism also clarifies information found in two separate documents, the *Kojidan* of the 13th century and the *Taigen Shō* of the 16th. These documents contain the earliest written references to the use of the shakuhachi as a *hōki*. They refer to a Buddhist priest named Ennin (794-864 AD) playing the shakuhachi in accompaniment to the *Amida Kyō* sutra and

performing shōmyō, a type of Esoteric Buddhist chant, through the shakuhachi (Lee 1992: 69; Blasdel and Kamisangō 1988: 74). Ennin was a priest of the Tendai school and the founder of Tendai shōmyō, but also travelled to China in 838 to study the Ryōkai mandala. His interest in the mandalas is demonstrated by the huge pair he had commissioned while in China. He was unable to bring them back to Japan, however, because of the Chinese Buddhist persecution (Reischauer 1955: 176, 268).

Shōmyō is a type of vocal music that adds melodic patterns to the chanted words of Shingon and Tendai Buddhism. The two major schools of shōmyō, Shingon and Tendai, were transmitted to Japan from T'ang dynasty China in the 9th century. There is speculation that elements of shakuhachi practice are related to shōmyō. Ramos comments:

> There are a lot of people who say that shakuhachi aesthetic tone came from the (shōmyō) monks chanting . . . some shakuhachi performance practices, like the quick meri at the end of a phrase, may come from the monk's chanting lines. (Ramos, pers. comm., 2009)

The famous Zen master, Ikkyū Zenji (1394-1482) who used the shakuhachi prominently in his practice and wrote poetry about its meditative qualities also has ties to the Ryōkai mandala. In fact, one of his prose pieces, *Bukkigun*, concludes with a description of a dualistic battle between heaven and hell. In it, all beings, concepts of

good and evil, and demons and Buddhas, are subsumed into the *Taizōkai* mandala (Sanford 1980: 297-298). He describes the mandala's specific structure in detail, clearly well cognizant of its specific properties.

Shingon Buddhism and Shakuhachi Organology

The Chinese Theory of Five Elements (wood, fire, earth, metal, and water) became an integral part of Buddhist philosophy. The introduction of Esoteric Buddhism to Japan, however, involved a slightly different set of five (worldly) elements (earth, water, fire, wind, and space), to which a six element was added. The sixth element was the mind, or spiritual consciousness and perception (Schumacher 2009). In Shingon belief, only by adding this sixth element do the five inanimate elements become animate. As stated above in relation to the similarities between the knowledge fist mudra and method of playing the shakuhachi, Dainichi Buddha, the central deity of Esoteric Buddhism in Japan, is often portrayed with the knowledge fist mudra. In this mudra, the five fingers of the right hand clasping the index finger of the left symbolize the unity of the five worldly elements with the sixth element, spiritual consciousness. Shingon Buddhist tenets hold that, without this sixth element, ordinary eyes see only appearances. Using the parallel discussed of the shakuhachi representing the index finger of the left hand, the five

fingers of the player represent the tangible physical world of the senses while the shakuhachi itself represents spiritual consciousness.

When the shakuhachi first came to Japan, it had six holes. Perhaps this was a purposeful reflection of its use as an Esoteric Buddhist meditation tool. During the Middle Ages in Japan, the six holes of the instrument were replaced with five, and the shakuhachi became more and more of a Zen instrument as its history progressed in Japan. As discussed in Chapter Seven (page 135), each of the five holes had a specific meaning to the Fuke sect, so connections between the morphology of the instrument and symbolic meaning were an accepted part of shakuhachi doctrine. This relationship between the six elements of Shingon Buddhism, the shakuhachi, and the knowledge fist mudra display a further relationship between the instrument's construction and Shingon Buddhist philosophy.

Shingon Buddhism and Shakuhachi Performance Practices

The concept of emptiness (symbolized in Shingon Buddhism by the Siddham syllable *Kha*, which represents Karura in the Dharma mandala) is at the core of shakuhachi practice. Ramos states:

> Emptiness is the goal of shakuhachi practice. . . . It is the foundation of everything, where everything comes from. . . . When you play shakuhachi it is important to really clear your mind to be able to play. . . . It is such a natural connection to emptiness. (Ramos, pers. comm., 2009)

This focus on minimizing, concentrating, and moving towards emptiness is embodied in the concept *Ichion Jōbutsu,* or enlightenment through a single sound. This concept is the goal of shakuhachi playing. It is very important while playing honkyoku for the practitioner to continually approach emptiness (Ramos, pers. comm., 2009). The shakuhachi also manifests elements of emptiness in its physical construction. Ramos comments:

> For the shakuhachi itself the (teachings of emptiness) are totally natural because physically the bamboo is empty. . . . The shakuhachi is so pared down, it was a process of simplification, minimizing, (Ramos, pers. comm., 2009)

"Ajikan" is a honkyoku piece that shows strong ties to Shingon Buddhist meditative practice. This piece is named for the Shingon Buddhist visualization meditation practice of the same name, also known as *Shingon-zen*. Kūkai first introduced this meditation to Japan in the 9th century when he returned from China with the Ryōkai mandala.

Conclusion

The iconographic evidence within the *Taizōkai* depicting Karura playing the shakuhachi gives valuable clues about the accurate history of the shakuhachi as a *hōki*. It shows that the shakuhachi may have been used as a meditative tool in China as early as the 8th century and by the early 9th century in Japan. The bījas, mudras, and visual

image of Karura all combine to show a strong relationship between the shakuhachi and Shingon Buddhism. The probable Chinese founder was not Fuke, therefore, but the earlier Huikuo, and its Japanese ancestor not Gakushin but the earlier Kūkai. Accordingly, the shakuhachi may have initially been an instrument of Shingon Buddhism rather than Zen. When reading a summary of my findings, Alcvin Takegawa Ryuzen Ramos commented:

> I've often speculated about the strong connection between shakuhachi and Shingon Mikkyō and you skilfully illustrated the connection. (Ramos, pers, comm., 2009)

After the 9th century the shakuhachi could only be found in Japan: Its use died out in China and other flutes replaced it, the timing significantly synchronous with the demise of Tantric Buddhism in China in the mid-ninth century. The *Taizōkai* mandala and the teachings of esoteric Shingon Buddhism may provide conclusive answers as to the history and origin of the shakuhachi in Japan as a spiritual and meditative tool. Further evidence presented in the ensuing chapter explains the ancient Chinese background linking the mythical bird, bamboo, the shakuhachi, and its position in the *Taizōkai* mandala.

Chapter Eleven – Ancient Chinese Music, the Shakuhachi, and the Mythical Bird

Introduction

Because the shakuhachi was originally a Chinese instrument that came to Japan from China in the 7th century, knowledge of ancient Chinese philosophies about music and acoustics are crucial to a thorough understanding of the shakuhachi's history. The following sections describe ancient Chinese acoustic philosophies, music theory, the significance of the mythological bird in early Chinese musical thought, and how these philosophies relate to the *Taizōkai* mandala.

Ancient Chinese Philosophies Regarding Music and Sound

Music was held in tremendous esteem in ancient China. While other early civilizations put great focus on linear measure, capacity, and weight in formulating their metrological systems, the Chinese appear to be the only culture that also included pitch measure, or *lü*. Pitch measure was not merely equal in importance to measurement, capacity, and weight, but the basis of the other three (Temple and Needham 1991: 200). The dimension of the fundamental tone pitch pipe, called *huang-chung*, represented not only a specific pitch but also, by a specific length and inner diameter, the standardized norm

for all linear and capacity measures in the entire empire. An imperial history from the 1st century BC explains:

> The basis of the linear measure is the length of the *Huang-chung* pitch pipe . . . the contents of one *Huang-chung* tube (twelve hundred grains of millet) weight twelve chu (half an ounce). (Temple and Needham 1991: 200)

Considered the basis of all things, the lü also had great moral significance: The ancient Chinese believed if the standard measures were not exact, cheating and corruption would follow, and society would be thrown into chaos and confusion (Temple and Needham 1991: 199).

The ancient Chinese approach to music, acoustics, and sound was quite different from the European, as the ancient Greek approach was analytical while the Chinese approach was correlative (Needham 1962: 128). The Chinese people's agricultural life depended on the seasons and climatic processes. This environment created their organic correlative philosophy, which would have been inconsistent with an analytical vision of sound (Needham 1962: 133). The fundamental basis of their entire cosmic system was the concept of vital breath, or *chi*, considered both energy and matter. The concept of *chi* moulded Chinese thinking from the earliest times in the same way that form and matter dominated European thought from the time of Aristotle (Needham 1962: 133). Because *chi* formed all elements of the universe, chi was the medium through which the correlated parts

communicated, and included both animate and inanimate objects (Aylward 2007: 13).

The Chinese, in pre-Han times (Han Dynasty 206 BC-220 AD), believed sound was produced by *chi* (Needham 1962: 138). The intermingling of the *chi* rising from the earth with the *chi* descending from heaven to earth produced wind. This relationship between music, wind, and *chi* was inseparable in early Chinese thought. As early as the 4th century BC, *music* was defined as "the wind/air by means of which one opens up mountains and rivers" (Sterckx 2000: 35). The significance of *chi*, wind, and air and their integral relationship to acoustics is described by Needham:

> Chinese acoustics (like other branches of physics) was from the first, if not analytical, highly *pneumatic. . . .* When we say that the acoustics of the old Chinese philosophers was highly pneumatic we must not forget that they thought of chi as something between what we should call matter in a rarefied gaseous state on the one hand, and radiant energy on the other. (Needham 1962: 135)

The commentary of Fu Chien (2nd century) speaks:

> Since the pitch pipes are also the tubes (used for the practice of) "observing the chi" the emanation is called wind. (Needham 1962: 137)

This ancient relationship between *chi*, wind, and music is particularly significant in the development of the lüs because *chi* is something that can be piped or canalised. The bamboo tube, widely used in ancient agricultural China, was the obvious instrument for this

purpose (Needham 1962: 134). The *wu* shaman had used bamboo humming tubes from ancient times for canalising *chi*, and the lü resembled these humming tubes. These lü later evolved into pitch pipes, known as *lü-kuan, kuan* meaning 'flute' or 'pipe' (Needham 1962: 191). The *lü-kuan* sounded the *huang chung* pitch, or yellow bell. The lü were held in great respect because of the ancient *chi* detecting tubes they derived from (Needham 1962: 192). To establish pitches these bamboo lü pipes, closed at one end, were cut into graduated lengths. When blown across their open ends, they produced the 12 lü, or fundamental pitches of the octave. At least from the Han dynasty, the lü were the orthodox devices for giving pitch to other instruments (Han and Mark in May 1983: 12).

The shakuhachi has direct ties to the bamboo lü. As stated in Chapter Seven, the shakuhachi was invented by Lü Cái between 627-649 AD (Tukitani et al. 1994: 103). Lü Cái was a prominent musician of the Tang dynasty and integral to the redevelopment of music of the time. Before the renovation, Chinese flutes had been separated into two categories: long and short. Long flutes were more prominent, made in twelve sizes with each matching a note of the traditional twelve lü. During the renovation, Lü Cái also separated the short flutes into the twelve pitches and created the shakuhachi (Blasdel and Kamisangō 1988: 71). The pitch of *huang chung*, most scholars

agree, was close to the modern day pitch D4 (Blasdel and Kamisangō 2008: 71). The pipe for the huang chung pitch was nine sun in length. Because the lü were closed at one end, in order for a flute, open ended on both sides, to sound the same pitch, it had to be double the length, or eighteen sun. Eighteen sun is equal to one shaku, eight (*hachi*) sun, hence the name of the shakuhachi flute (Blasdel and Kamisangō 2008: 71). That the shakuhachi was tuned to the fundamental tone *huang chang*, which represented the standardized norm for all linear and capacity measures in the empire and was directly responsible for the harmony of society, shows what a revered background the shakuhachi had and the respect it must have been accorded in ancient China.

This relationship between *chi* and the bamboo lü is still evidenced in shakuhachi performance practice. The relationship between breath and chi in shakuhachi practice is very close, even identical. Ramos states:

> The *chi* is the breath. . . . It is synonymous, straight from Chinese Taoist teachings. . . . The *chi* is the breath, the life essence of the universe. (Ramos, pers. comm., 2009)

Fènghuáng is a symbol of chi, and the chi is the breath. A significant part of playing the shakuhachi is controlling the *chi*, using the breath through the flute. A tremendous amount of the honkyoku player's focus is put into the breath (Ramos, pers. comm., 2009). In fact, the

development of players' chi can be determined by the quality of their shakuhachi playing: how they control their breath, how their muscles work, and the quality of their sounds (Ramos, pers. comm., 2009).

The Chinese also believed, as did the Pythagoreans, that numbers were the basis of musical notes. (Needham 1962: 181). Ancient China's correlative philosophy led to mathematical computations of acoustics (Han and Mark in May 1983: 11). Mathematics, or *shuxue*, (now a universally accepted Chinese equivalent for mathematics) had a much broader meaning in ancient China, and referred to mathematics, natural philosophy, numerology, divination, astronomy, astrology, geomancy, and music, while esoteric mathematics (*shushu*) included mathematics, astronomy, astrology, music and divinations (Yoke 2003: 2). In the early 2nd century BC, the discovery of sympathetic resonance was not surprising because it accorded so well with the typically Chinese concept that everything is organically connected.

The essence of Chinese music philosophy was the belief in a deep and fundamental homology between natural process, cosmic harmony, and music. Music was considered a phenomenon originating in the natural world and central to many natural processes. The ancient Chinese believed the originators of music lifted harmony from the natural world and brought it, in the form of music, to the world of

humanity (Sterckx 2000: 7). Perfectly pitched music was believed to reflect social and cosmic harmony (Sterckx 2000: 32). Music was not a technological invention or an aesthetic phenomenon unrelated to other elements. Instead tone, pitch, rhythm, and melody were embedded in nature. The origins of music were firmly rooted in the animal world, related to the observation of animal patterns of sound and movement (Sterckx 2000: 3-8).

The Significance of Animals in China

Mythological animals held a very different position in ancient China's belief systems than they do in the modern West. The Chinese perception of the world did not separate animals, human beings, ghosts, and spirits categorically (Sterckx 2000: 2). Instead, animals provided normative models and signs for guidance to human society: The natural world was not analysed as a separate reality from the human world that functioned according to independent biological laws. Instead, the ancient Chinese explored patterns of mutuality, congruence, and correlation between animal behaviour and the workings of human society (Sterckx 2000: 2). Animals could function as messengers of musical resonance from the spirit world, and nothing less than perfected music would attract sacred animals (Sterckx 2000: 32, 35). The following describes the relationship

between the lü, the mythical bird, and the origin of music in ancient China.

The Origin of Chinese Music and Fènghuáng

The legend that describes the origin of the Chinese tonal system intimately involves a mythical bird called fènghuáng. Lü Pu-wei writes of this legend in his third century BC book *Master Lu's Spring and Autumn* (*Lü-shih ch'un-ch' iu*).

> In olden times Huang-ti (Yellow Emperor) ordered Ling Lun to establish the lü. Ling Lun travelled from the western to the shady northern side of Mount Yuan Yü. He selected bamboo grown in the Chieh Ch'i valley. He chose only a piece which was hollow and of even thickness. He cut off its knots and used the hollow section between the two joints, the length of which was 3.9 ts'un. And he blew the pipe and produced the sound kung (the basic tone, yellow bell) of huang-chung. He then brought twelve other pipes of different lengths down from the mountain and he listened to the sounds of the male and female Phoenix birds (fènghuáng). He grouped their sounds into the twelve lü. There were six sounds of the male bird, and another six of the female. He related them to the kung of the huang-chung and found that the huang-chung was the foundation of the lü-lü. (Kárpáti 1980: 5)

This work described the construction of the original set of twelve bamboo pitch pipes tuned to the love song of the fènghuáng (Han and Mark in May 1983: 11). This event was dated to the time of the legendary emperor Huang-Ti (The Yellow Emperor) and his musical minister Ling-lun in the year 2698 BC, and this work is also the earliest record of the mathematical ratios of musical intervals (cycle of fifths) used by the ancient Chinese to create their scale.

This mythological bird fènghuáng is responsible for bringing the original pitches to man through the medium of bamboo. Coming from a culture that placed such value on music and correct pitches, this legend shows the stature this mythological bird had in ancient Chinese music theory. The following section explains the specifics of the ancient Chinese tonal system after which the aspects of fènghuáng are described in greater detail.

The Ancient Chinese Tonal System

When the Chinese first gave names to their musical notes is not known. The *Tso Chuan* of the 4th century BC, however, contains five references to the five notes of the scale (Needham 1962: 60). The evolution of Chinese acoustic theory leads from the formation of scales in relative pitch to a gamut of notes of fixed or absolute pitch (Needham 1962: 165). By 120 BC, the *Huai Nan Tzu* states the names of the five notes from which, in combination with the twelve absolute pitches of the fixed gamut, sixty-mode keys can be formed (Needham 1962: 161). This five-note scale of *kung, shang, chio, chih*, and *yü* can be compared to a movable doh scale in Western music (Needham 1962: 165). It is generally accepted that the intervals between them correspond to "do re mi sol la" of the Western scale (Han and Mark in May 1983: 11), although this analogy is not exact because the Western movable doh system applies to a system of

equal temperament in which the semitones are all almost identical (Needham 1962: 167). Unlike an equal temperament system, in a just intonation system such as the ancient Chinese used, it was impossible to transpose a melody from one key to another without altering its pitch relations, since pitch relations within different just intonation keys are not the same (Needham 1962: 168).

The Chinese created the twelve lü, the original fixed notes of their scale, by using a cycle of fifths from a given fundamental. This system correlated in numerological significance with pentatonism, and by the 3rd century BC, created a cyclic division of the octave by twelve (Modirzadeh 2001: 81). Their cycle of fifths was based on the acoustical principle that a simple ratio of 3:2 exists between the length of a vibrating body producing a given pitch and one producing the fifth above. If a pipe (or vibrating string) of x length produces the tone C, then a pipe of length 2x/3 (assuming the same diameter as the first pipe and equal strength of breath to generate the tone) will produce the fifth tone above C, or G. The same ratio then applied to the new pitch, G, will produce the D above. All twelve semitones within an octave can be generated by this ratio providing that each successive shorter length is doubled or quadrupled to place it within octave range (Han and Mark in May 1983: 11). The ancient Chinese acousticians were aware that this method of tuning led to the

thirteenth pitch being sharper than the octave, which therefore created a spiral rather than a closed system. Knowledge of the acoustical facts that one vibrating body half the length of the second will sound the octave, two thirds of the length will sound a fifth, and three quarters of the length will sound a fourth were all the proportions necessary to develop the Chinese spiral of fifths (Needham 1962: 177).

The ancient Chinese indicated the shifting intervals of the five modes of the pentatonic scale and their eleven transpositions into all the possible keys by combining the syllables of the ancient five tone notation (*kung, shang, chio, chih, and yu*) with the first syllables of the twelve lü (*huang, ta, thai, chia, ku, chung, jui, lin, I, nan, wu, and ying)* (Needham 1962: 169). Ancient Chinese musicians were keenly aware of the difference between each mode as well as changes in character that transposition of a melody from one key to another within the same mode caused. Whether or not all of the modes were used in actual practice is uncertain, but there are references to sixty pentatonic mode keys (*tiao*), which were created by combining each of the five modes in the 12 keys or lü. (Needham 1962: 169). In this way, the movable pentatonic mode could be played in any of the twelve lü (which were absolute rather than movable pitches) although the pitch frequencies of the lü changed in different dynasties. This

system was also apparent in practice, as five-toned music was the rule in ancient China (Needham 1962: 165).

The use of the fifth to create the twelve original tones and the prominence of the movable pentatonic scale mirror the importance of the number five in both Chinese music and Chinese philosophy. The *Li Chi*, one of the five classics of China, states that, between heaven and earth, there is perfect harmony, and because *3* is the symbolic number of heaven and *2* the symbolic number of earth, sounds in the ratio 3:2 will harmonize as heaven and earth. The importance of the number *5* derives from the Five Element Theory, a Taoist belief system that predominated in ancient China, in which natural phenomena were classified into the Wu Xing, or the Five Phases.[4] The system of five elements and classifying things by fives was evident in the ancient Chinese Classics the *Tao Te Ching* and the *Shu Ching*.[5] The elements were metal, wood, water, fire, and earth. This system was used for describing interactions and relationships between phenomena and was present in many fields of early Chinese thought, including the seemingly disparate fields of astronomy, geomancy, astrology, medicine, music, military strategy, and martial arts.

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[4] Usually translated as five elements, five movements, or five steps.

[5] The Shu Ching, or the Book of History, describes events dating back to the third millennium B.C.E. and was written down during the Han dynasty (23-220 C.E.). The authorship of the Tao Te Ching is attributed to the 6th century BC Taoist sage Lao Tzu.

Fènghuáng in Ancient Chinese Mythology and its Symbolic Correlations to Music

Depictions of fènghuáng have appeared on objects in China for over seven thousand years (Schumacher 2005). Fènghuáng[6] was a heavenly bird, believed to be one of the four creatures present at the beginning of the world. Fènghuáng is called *hōō* in Japan. A symbol of heaven's favour, goodness, virtue, grace, luck, and happiness, it was worshipped as one of the four spiritually endowed creatures presiding over China's destinies (Schumacher 2005). Correlations between fènghuáng and Chinese panpipes exist, further displaying the intimate relationship between this mythical bird, music, wind, and bamboo. These ancient bamboo panpipes[7], a series of bamboo tubes secured together by rows of bamboo strips blown across the top end, formed a shape described by ancient Chinese writers as resembling the wings of the mythical fènghuáng birds. Single-winged panpipes appear to have been the most common among the early examples, and the double-wing shape predominated later.

Many of fènghuáng's specific attributes symbolically relate to elements of ancient Chinese music theory. Fènghuáng, who represents the primordial heavens, brings music to earthbound man

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[6] Sometimes fènghuáng is confused with the phoenix of Greek or Egyptian mythology, and although fènghuáng is also a sacred bird born in the sun, it is unlike the phoenix in that it does not self-immolate.

[7] Before the Tang dynasty (AD 618–907), the panpipe was called *xiao*, a name that, from that time forward, was applied to a single-tube end-blown flute.

from the cosmos as a winged messenger between the celestial world and the world of man. Through flight, fènghuáng acts symbolically as an intermediary between the number *3* of heaven and the number *2* of earth, mirroring the 3:2 ratio used to create the twelve tones of the original scale. The male symbolizes yang, the sun, and the fire and has three legs. The female symbolizes the feminine, yin, and lunar qualities and has two legs (Schumacher 2005), again using the 3:2 ratio. Fènghuáng also has multiple associations with the number five, symbolizing the *Wu-ch'ang*, or the five cardinal virtues of Confucianism. In Chinese mythology, fènghuáng is the emperor of all birds, whose plumage is comprised of the five mystical colours—black, white, red, green, and yellow. The mythological bird stands five cubits high and has a five-octave voice. The fènghuáng was believed to control the five tones of traditional Chinese music and have the most enchanting song of any bird. Its song consisted of five notes that formed a perfect melody. Fènghuáng has twelve tail feathers, which correlate to the twelve lü, and eats only bamboo, demonstrating again the relationship between itself and the bamboo used for the original lü.

By using a mythical bird to symbolize the origin of the first, pure musical tones, the qualities the ancient Chinese considered most important to music were emphasized. The role of fènghuáng as the

originator of all wind instruments was related to its image as the embodiment of wind (Sterckx 2000: 8). As discussed in Chapter Four, a bird can canalise air more effectively than any other mammal and is literally filled with air, or wind through its system of air sacs and pneumatic bones. The sophisticated singing ability birds possess makes a mythological celestial bird the obvious choice as the originator of the pure original tones, and its ability to fly emphasizes the heavenly origin of music. The use of a mythical and magical bird that only appeared during harmonious times on earth, rather than using a terrestrial, familiar species, further emphasizes music's divine origin and the reverence in which music was held in ancient Chinese thought.

Fènghuáng and Ancient Chinese Astronomy

Fènghuáng had a significant place in Chinese astronomy from at least the 3rd century BC. Astronomy was extremely important to the early Chinese, who felt living in correct alignment with the stars and the movements of the heavens would ensure harmony socially and politically on earth (Kelley and Milone 2005: 327). The importance of *chi* and the correlative element of ancient Chinese philosophy affected how astronomy was perceived. Taoist practices were designed to coordinate the flow of vital breath in the individual human body with the vital breath of the heavenly bodies, the stars, and the planets

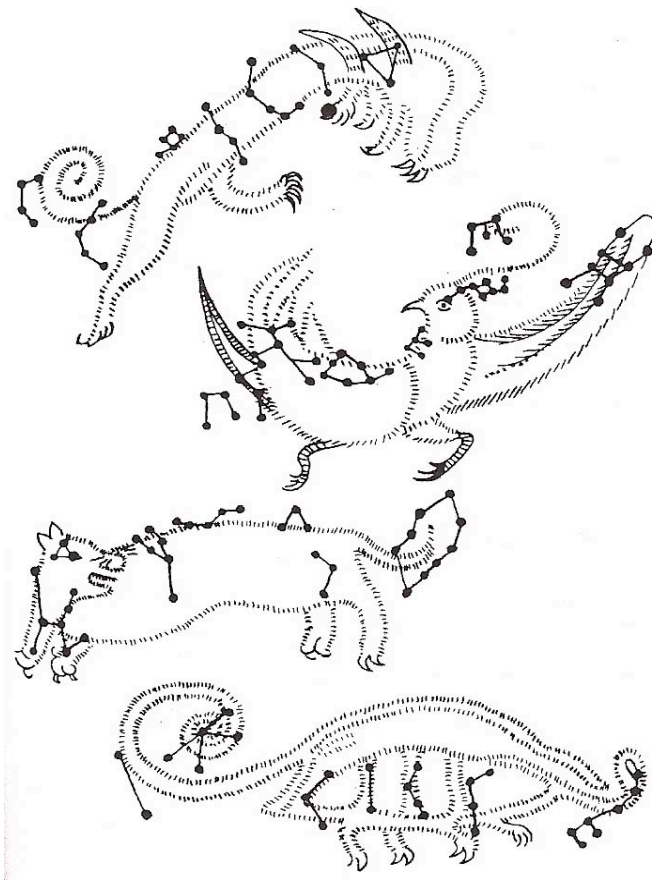

Figure 11-1. *Constellations of the guardians of the four directions*
(Kelley and Milone 2005: 329 © Springer Science and Business Publishers, used with permission)

(Aylward 2007: 9). At the heart of Chinese mythology and astronomy are four spiritual creatures that each guard one of the four compass directions.[8] They are the Azure Dragon of the East, the Red Bird of the South, the White Tiger of the West, and the Black Tortoise of the North. These four celestial Animals refer to the figures formed by the stars in the four directions and are depicted as actual constellations (see Figure 11-1). The use of these four creatures in astronomy dates back to at least the 2nd century BC. Gods like these talismanic animals were seen as manifestations of nature.

The influence of the five-element theory can be seen from the colours of the four images, which were assigned according to the five-element scheme of cosmology (Xiaochun and Kistemaker 1997: 118).

[8] The fifth direction, the centre, represents China.

Each creature has a corresponding colour and element. In addition, each animal corresponds to a specific planet, a season, and a quadrant of the sky, with each quadrant containing seven *hsui*[9], or asterisms, and one significant star in the centre of the quadrant[10] (see Table 11-1).

Table 11-1. *The Four Animals and Their Corresponding Qualities*

Color	Direction	Element	Asterism	Lunar Mansions
Blue	East	Wood	Blue Dragon	Jiao, Kang, Di, fang, Xin, Wei,
Black	North	Water	Black Warrior	Dou, Niu, Nü, Xu, Wei, Shi, Pi
White	West	Metal	White Tiger	Kui, Lou, Wei, Mao, Bi, Zi, Shen
Red	South	Fire	Red Bird	Jing, Gui, Liu, Xing, Zhang, I,
Yellow	Center	Earth		

(Kelley and Milone 2005: 328 © Springer Science and Business Publishers, used with permission)

The guardian of the south is the Red or Vermillion Bird, or Fènghuáng. In both Japan and China, the symbolism of the Red Bird seems nearly identical to or merged with that of fènghuáng. Fènghuáng is not only a mythological bird that is the origin of Chinese music but also one of the four guardians of the directions and a primary constellation in Chinese astronomy. Fènghuáng is further associated with the season of summer, the planet Mars, the element fire, and the quality of knowledge. The following section discusses

[9] The 28 *hsui*, or lunar mansions, are 28 divisions of the sky each representing the length of the moon's daily motion in its orbit. They were first documented as a full list in 433 BC although a much earlier origin is believed (Kelley and Milone 2005: 316).

[10] The stars named *The Dragon's Heart*, *the Pleiades*, and the *Bird Star* marked the central position of the Dragon, Tiger, and Bird respectively. There was no identifying star at the centre of the Black Tortoise, so the appropriate place (the eleventh mansion) was called *Void*.

how the Chinese history of fènghuáng and its relationship to the bamboo lü transfers to the *Taizōkai* mandala imported into Japan by Kūkai in the ninth century.

Fènghuáng and the Taizōkai Mandala

Buddhist cosmology and astronomy were introduced to Japan from China. Because of the correlative element of Chinese thought, mandalas had strong cosmological and astronomical ties in conjunction with their religious meanings. Mandalas were seen as cosmic diagrams (Kelley and Milone 2005: 335). The astrological system of gods and demons evolved as an offshoot of Chinese calendrical science (Aylward 2007: 21). The *Taizōkai* represents in iconographic form the ruling deities of the twenty-eight lunar mansions, the nine planetary lords, comets, meteors, and the twelve signs of the zodiac (Kelley and Milone 2005: 335). A pictorial view of the cosmos is depicted in the mandala with the direction of east at the top (Kelley and Milone 2005: 335). In addition to being an esoteric Buddhist meditation tool of Shingon Buddhism, the mandala is a two dimensional rendition of the cosmos, whose history cannot be separated from Chinese astronomy.

Although the four Chinese mythological animals[11] of the four directions were much more prevalent in China than in Japan, groupings of the four creatures are found in Japan. The four were probably introduced from China in the seventh century AD. The symbolism of the four creatures merged with and then became supplanted in Japan by the Buddhist Shitennō, or Four Heavenly Kings. These four guardians of the four directions are closely associated with China's Theory of Five Elements. Zōchōten is the Buddhist equivalent to the Red Bird of Chinese mythology. He guards the southern direction and is positioned iconographically next to the southern gate in the *Taizōkai* mandala (the middle of the far left side of the mandala). His role is to be a catalyst for spiritual growth.

Although in Japan the Shitennō replaced the four guardian animals, vestiges of the guardian animal fènghuáng, the Red Bird of the South, may be evidenced in the *Taizōkai* mandala in a slightly different form. Buddhism portrays fènghuáng, as Garuda, the king of birds. Garuda, Karura in Japan, has multicoloured and golden feathers, like those of hōō, and therefore, some texts equate the two birds (Snodgrass 1988: 489). Karura appears, therefore, to be a direct descendent of fènghuáng, now depicted in the *Taizōkai* mandala. The depiction of Karura in the *Taizōkai* suggests strongly a

[11] The Azure Dragon, the Red Bird, the White Tiger, and the Black Tortoise.

reference to fènghuáng, the granter of the twelve original pitches to man. The bamboo shakuhachi flute, originating from the bamboo lü tuning pipes, is a further reference to the relationship between chi, wind, music, and bamboo. An understanding of the history of Chinese acoustical theory and mythological legend, coupled with the relationship between Buddhist mandalas and Chinese astronomy, can give valuable clues as to the purpose of the depiction of Karura playing the shakuhachi in the *Taizōkai* mandala of Shingon Buddhism.

Chapter Twelve – The Relationship between Avian Respiration, Song, and Shakuhachi Performance Practices

This chapter discusses the possible meanings behind the use of the mythological bird as an iconologic symbol related to the shakuhachi in regards to its performance practices and structure. Specific shakuhachi breathing practices are examined as well as playing techniques that mimic avian respiration and song.

Breathing Similarities

Shakuhachi breathing practices have similarities to avian respiration, both physiologically and anatomically. To achieve long, slow phrases characteristic of honkyoku, a deep, slow breathing pattern like the birds is required. During an inhale, a shakuhachi player actively engages his abdominal muscles to bring air deep into the abdomen and the sides of the body and also use those muscles forcibly to control the speed and type of exhalation (Ramos, pers. comm. 2009). Shakuhachi players inhale through the nose and mouth deeply into their lower abdomen, mentally bypassing the lungs (Ramos, pers. comm., 2009) just as a bird's breath goes directly into the abdominal air sacs bypassing the lung. Instead of abdominal muscles, birds use their keel as a bellows to move the air into and

through the air sac system. The air is squeezed out of the body by the action of the keel and the tension of the syrinx much like a player uses his abdominal muscles and embouchure to control the breath and keep his body as full of air as possible for as long as possible.

Exhalation for both the bird and the shakuhachi player is active rather than passive, a characteristic of human tidal breathing. To play the long phrases required in honkyoku, the player fills the body with air and slowly, through a very small embouchure, lets it out, aiming to keep the body as full of air as possible for as long as possible (Ramos, pers. comm., 2009.). The air sac system ensures that the bird's body is always filled with air throughout the breathing cycle. The body is analogous to a balloon with a little hole through which the air slowly leaks out: The balloon stays full and only gradually deflates. An air sac of a bird is very thin and translucent and looks similar to a balloon (Poet, pers. comm., 2008). Diagram 12-1 depicts the method of breathing used by the shakuhachi player. Air is inhaled through the mouth and the nose, using the abdominal muscles to bring air deep into the body and fill the lungs fully. This air is slowly exhaled during the long phrases typical of honkyoku.

A far less common traditional shakuhachi performance practice is the technique of circular breathing. It is not a technique that most teachers teach because most students do not achieve a level of

technique that is required for the ability to be learned (Ramos: pers. comm., 2009). Although it is not a secret practice, circular breathing on the shakuhachi is a very advanced technique and is not a recent addition to shakuhachi performance practice.

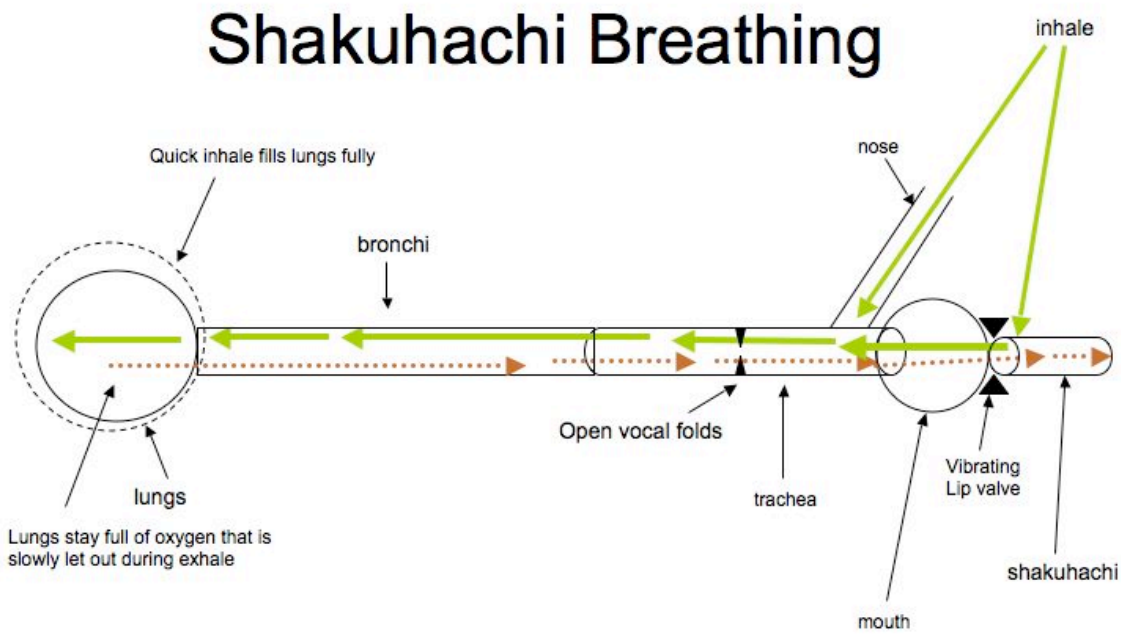

Diagram 12-1: Shakuhachi breathing. (Diagram by L. Rubin based on diagram by N. Fletcher 2008, used with permission)

Circular breathing on the shakuhachi is not used for the same purpose or in the same way as it is on the didjeridu, on which a continual sound is created. In traditional honkyoku playing, circular breathing is not used to join all phrases throughout the piece because the empty space between phrases, the Japanese aesthetic of *ma*, is desired. Its purpose is to lengthen a phrase all the way to silence: the length of the phrase through the use of circular breathing is no longer dependent upon the player's amount of remaining breath but upon his

artistry (Ramos, pers. comm., 2009). Shakuhachi master Koga also discusses the concept of inhaling and exhaling simultaneously and its use in shakuhachi practice:

> While inhaling physically, we inhale something air-like from in front of us mentally. (This is the first step, and consists mainly of physical breathing.) Then by practice—it is important, and also enjoyable, you can inhale the air-like something while exhaling physically. . . . When you smoothly synchronize these activities, you are in the state of "soundless sound" automatically. (Koga 2009: 10)

Anatomic Similarities

Like the didjeridu, the shakuhachi and the player's body can be seen as analogous to the bird's body (as it is depicted visually on the Native American siyohanka, see Figure 12-1). The lips of the player are analogous to the syrinx, the flute to the trachea, and the deep abdominal breathing of the player analogous to the avian air sac system. Although the physical mechanisms differ, lip embouchure position and tension, like a bird's syrinx, affect the pitch and timbre of the resultant sound.

Oxygen Balance

The avian trachea and the body of the flute may also serve similar functions in oxygen and carbon dioxide balance. When inhaling in honkyoku, shakuhachi players breathe in through both the mouth and the nose, keeping a constant physical connection between the player's mouth and the flute. When inhaling, the player breathes

some of the air in the flute back into his body (Ramos, pers. comm., 2009), due in part to the one-of-a-kind oblique outward facing blowing edge. This causes a portion of the air just exhaled into the flute to be included in the following inhale. As discussed in Chapter Five, a bird reinhales some of the just exhaled air (higher in carbon dioxide) from its trachea to combine with the new inhale in order to keep a balance between the high oxygen content it has inhaled and level of carbon dioxide its body needs. This would increase the carbon dioxide in the player's body in a similar way. But why would an increase in carbon dioxide be of benefit in *suizen*?

Hyperventilation increases oxygen levels and decreases carbon dioxide in a human body. The challenge of hyperventilation is not the increase in oxygen but the decrease in carbon dioxide. This reduction constricts the small arteries and arterioles of the brain and spinal cord. As the arteries constrict, not enough blood (and therefore not enough oxygen), reach these areas. Therefore, even though the blood may be highly oxygenated, the result of hyperventilation is tissues do not receive enough oxygen. Musicians playing instruments that require large amounts of air can experience hyperventilation. Beginning shakuhachi players often experience dizziness associated with hyperventilation.

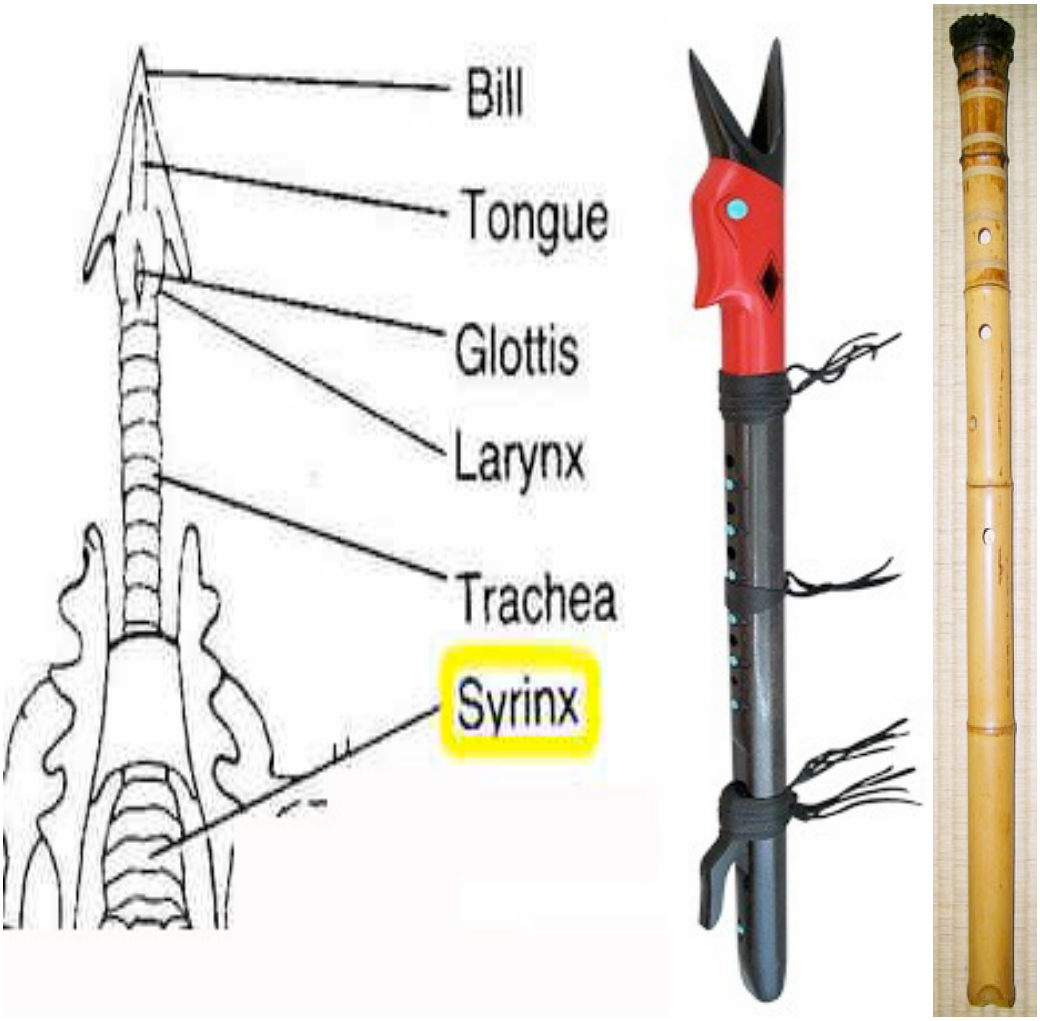

Figure 12-1: Anatomical similarities between the bird, the siyohanka, and the shakuhachi. (photo of flutes, L. Rubin, diagram of avian anatomy http://www.birdwatching-bliss.com/bird-song.html, used with permission)

A higher arterial amount of carbon dioxide, on the other hand, is associated with relaxation symptoms. The increased arterial carbon dioxide promotes the action of the parasympathetic nervous system, which results in a state of relaxation and lowered stress, with a decrease in heart rate and blood pressure (Htut 1999). A state of relaxation is a necessary quality of meditation. To promote the

meditative element of the flute, the shakuhachi may slightly adjust the carbon dioxide and oxygen balance for the player in a manner similar to that of a bird's trachea.

Performance Practices

Some techniques on the shakuhachi have a direct aural relationship to birdsong. For example, the bird's pulsatile respiration, in which the bird pushes air through the syrinx to create a trill is analogous to the shakuhachi technique tamane, which is a trill sound created by vibration of the palate/throat area, also called flutter tonguing. *Tsuru no Sugamori* means 'Tenderness of Cranes,' specifically referring to the tenderness between parent birds and their young. Many of the special trill effects can be considered imitations of bird sounds. Techniques unique to the shakuhachi such as shakes and tremolos (korokoro, karakara), glottal trills (tamane), and flutter-tonguing (tabane), are used to imitate the flapping of the wings and the cries of the parent cranes and their chicks.

Significance of the Breath

Although correct respiration is vital for most aerophones, in case of the shakuhachi it is particularly so because not only is it air necessary to produce sound as with all aerophones, the use of the breath has a decidedly meditational purpose in traditional playing.

This practice, *suizen,* intricately relates the playing of the instrument to a meditative Zen practice and to the flow of *chi*, or *ki* in Japanese. Fūyō, in the 19th century, discusses the importance of breath and its integral relationship to spirituality in shakuhachi practice. *Kisoku* means spiritual breathing on the shakuhachi (*ki*, or *chi*, means 'spiritual essence,' and *soku* means 'breath'). He says:

> In truth, the success of shakuhachi *shugyō* is dependent only on the Spirit and the breath. (Fūyō in Gutzwiller 1984: 61)
>
> As spirit resides in the body, sound is shaped breathing. Shakuhachi forms breathing into sound and is the vessel of *kisoku*, spiritual breathing. (Fūyō in Gutzwiller 1983: 250)

Shakuhachi master Masayuki Koga, head of the Japanese Music Institute of America, who includes circular breathing in his shakuhachi practice discusses the space within the body needed for air, which is analogous to the bird's pneumatic body.

> We take the upper body as a resonating chamber and . . . in order to open (expand) the body, the outer muscles of the body need to expand first, so the small spaces between the bones and muscles can stretch naturally. Then the lower part of the body becomes an essential source of energy in music, and the upper part of the body acts as a resonating chamber. (Koga 2009: 2, 3)

Conclusion

The relationship between avian respiration and song to shakuhachi breathing and performance practices complement the avian/bamboo relationship, symbolized by fènghuáng and the lü, between chi, the shakuhachi, and the breath. As with the didjeridu, literal analogies in

both the instruments' anatomical design and performance practice complement the avian/flute visual and mythic iconology evidenced in the *Taizōkai* mandala and the early Chinese legend of fènghuáng.

Section V

Comparisons and Conclusions

Chapter Thirteen– Comparisons and Conclusions

Introduction

This chapter provides a comparison between the two case studies of this thesis. These similarities and differences between the shakuhachi and the didjeridu are explored in the following order: age, materials of construction, history, avian iconology (including mythography and symbolism), cultural meaning (including the sociocultural and religious meanings and relevant ethnographic analogies), and performance practice and repertoire (including the mechanics and use of the breath).

Theoretical Framework and Organization

Comparison provides a method for evaluating and interpreting cases relative to substantive and theoretical criteria (Ragin 1987: ix). This research demonstrates that two instruments from seemingly dissimilar cultures are both intimately related to avian and bamboo iconology: The Tang Dynasty Chinese culture is quite different from fifteen-hundred-year-old Northern Territory Aboriginal culture, yet both cultures used similar avian/bamboo iconology in relation to an

end-blown instrument. China is referred to when discussing the shakuhachi rather than Japan because the shakuhachi and the *Taizōkai* mandala both derive from the Chinese Tang Dynasty.

Age, Construction, and History

Both the didjeridu and the shakuhachi are very similar in age. The didjeridu made its first appearance in rock art during the Freshwater period, approximately 1500 years ago. The shakuhachi was invented in China by Lü Cái between 627-649 AD and came to Japan in the late 7th century during the Nara Period (710-794) with the gagaku orchestra. The didjeridu was a completely indigenous instrument; the shakuhachi an imported one. Both instruments can be dated through avian iconology: the goose fans painted in the same paintings as the didjeridu show that the didjeridu was a "musical intrusion" onto an earlier music culture, and the *Taizōkai* mandala which came to Japan with Kūkai in 804 gives evidence of the shakuhachi as a tool of Shingon Buddhism in the early 9th century.

The early history of both instruments has been misunderstood in much modern lore. Many popular books and websites about the didjeridu still remark that the didjeridu is over ten thousand years old, even though evidence from the rock art clearly suggests otherwise. Furthermore, although the legend of the shakuhachi through the Zen monk Fuke was proved undeniably false in the early 20th century, this

story continues to be popularized as the instrument's true history even now in the early twenty first century by students and teachers. Iconology is also a large clue for each instrument as to the accurate dates of its history. For the didjeridu, Alice Moyle and George Chaloupka used goose-wing fans to date the accurate intrusion of the didjeridu into North Arnhem Land musical practice fifteen hundred, not ten thousand years ago. For the shakuhachi, the depiction of the shakuhachi in the *Taizōkai* mandala dates the shakuhachi in terms its early use as a *hōki* and its connection to Shingon Buddhism.

Both end-blown instruments, simple in design, were originally made of bamboo, and both have often been referred to by terms meaning 'bamboo' during their history. The didjeridu was made from indigenous bamboo (*Bambusa arnhemica*) of Northwest Arnhem Land. Many Aboriginal names for the instrument were derived from the name of bamboo (Chaloupka 1999: 189). The shakuhachi is still made from madake, Japanese Timber Bamboo (*Phyllostachys bambusoides*), a bamboo whose origins are in China but, like the shakuhachi, is now commonly associated with Japan. Shakuhachi players have very close ties to the plant their instrument is constructed of. They often call their instrument "bamboo" (take) rather than "flute." Often, the focus of the player's attention is on how

to please the heart of the bamboo rather than the results of playing music.

Throughout their history there have been changes as well in both instruments. The shakuhachi was revised from the six holes of its early history to five holes several hundred years later and has remained a five-holed instrument to the present. The shakuhachi has always been made of primarily of bamboo throughout its history, although the species of bamboo has changed. The didjeridu, originally primarily a bamboo instrument, has become popular worldwide now as a wooden instrument made from native eucalyptus hollowed out by termites. In fact, eucalyptus didjeridus are so predominant that many people are unaware that for most of its history the instrument was made primarily of bamboo.

Both instruments have a contemporary, successful and popular following outside their home culture in the United States, Australia, and Europe. Both instruments also have been used in many musical genres outside their traditional ones, including Western classical, jazz, rock, world, and new age.

Iconology - The Plant and the Animal

Visual Depiction

The bird and the bamboo instrument have an intimate connection depicted both artistically and mythically in both cultures,

shown by Karura and the shakuhachi in the *Taizōkai* mandala, fènghuáng, and the lü in China, and the Magpie Goose and the didjeridu in northern Northern Territory culture. There are a number of differences in the way the arts of the cultures depict a relationship between avian elements and the instrument, however. In the 1500-year-old Aboriginal rock art, only bird motifs, including feathered headdresses and goose-wing fans, are used in the pictures. There are not direct images of birds in the paintings that depict didjeridu music and dance practices. Instead, symbols of the bird are used. Humans wearing feathered headdresses, not deities, are depicted playing the instrument (Chaloupka, pers. comm., 2009). Northern Territory contemporary art depict literal relationships between the magpie goose and the didjeridu. In the painting 'Magpie Goose Dreaming' the goose is literally blowing the didjeridu. Here the Goose is a being of the Dreaming, and non-human.

In comparison, Karura is a bird/human deity with both avian and human qualities who, like Old Man Goose, plays the instrument himself. Fènghuáng is a mythical immortal bird who sings to man the first tones of music through the bamboo lü. Both cultures depict the instrument iconologically as a part of a paradigmatic visual image that involves multiple elements along with the instrument. The didjeridu player is often displayed pictorially with dancers, while Karura playing

the shakuhachi is part of a mandala, which by its nature depicts a complex web of symbolic interactions.

Mythology

The following compares the story of the Wild Goose Dreaming about the magpie goose and the didjeridu, the legend of the brolga and the didjeridu, and the legend of fènghuáng and the origin of music. In review, the three legends are summarized here.

Wild Goose Dreaming

> Old Man Goose (Karramala) was walking to a place called Djulurrk. He came striding along, playing the didjeridu and calling all the creatures to come together for ceremony. The didjeridu is called *kenbi*, in the MakMak (Marranunggu) language- kenbi refers to both to the plant and to the instrument. At Djulurrk, there are dense stands of kenbi. Old man Karramala must have planted them. "Kenbi" goes with Goose Dreaming. Proper goose, he's a Kenbi Man. He's got a honker! So, Old Man Karramala blew his didjeridu (kenbi), making the rivers as he walked to Djulurrk. (Rose et al. 1992: 10, 13)

Brolga and Kingfisher

> Brolga and Kingfisher went looking for a didjeridu. Kingfisher found a log lying down. It had a hole in it. "Oh," he said. "This might make a didjeridu." So he went back and told the Brolga. Then they both went out looking for a green tree with a hole in it. Ah! A green tree with a hole in it! They tapped it. They heard it had a hollow in it. He (presumably the Kingfisher) tried it our first. Heard the sound was very good. Found another one. Both played together. Yirrkala mob found it from the Brolga and it went this way. Kingfisher went to western Arnhem Land. He landed at Beeswick (Bamyili) and showed them; then flew right up to Port Keats. These two birds first showed how to find the didjeridu. When they found it, they became men. (Moyle 1974: 30)

Fènghuáng

> In olden times Huang-ti (Yellow Emperor) ordered Ling Lun to establish the lü. Ling Lun travelled from the western to the shady northern side of Mount Yuan Yü. He selected bamboo grown in the Chieh Ch'i valley. He chose only a piece which was hollow and of even thickness. He cut off its knots and used the hollow section between the two joints, the length of which was 3.9 ts'un. And he blew the pipe and produced the sound *kung* (the basic tone, yellow bell) of huang-chung. He then brought twelve other pipes of different lengths down from the mountain and he listened to the sounds of the male and female Phoenix birds (fènghuáng). He grouped their sounds into the twelve lü. There were six sounds of the male bird, and another six of the female. He related them to the kung of the huang-chung and found that the huang-chung was the foundation of the lü-lü. (Kárpáti 1980: 5)

These legends share some similarities while having differences concerning the instruments they describe. The Wild Goose Dreaming and the legend of Fènghuáng both depict an intimate relationship between the bird, bamboo, and the instrument. The Brolga and Kingfisher story, on the other hand, uses wood for the instrument rather than bamboo. Brolga and Kingfisher and Wild Goose both play the instrument themselves but have different results: Brolga and Kingfisher become men through playing while the Goose brings people together for ceremony and creates rivers by playing the kenbi. Fènghuáng does not play the lü but sings the original tones of music to man for him to play on the bamboo.

Through iconology both cultures show a strong tie between bamboo and the bird. In China, they are related to the concept of *chi*:

The bamboo is the holder of *chi*, and the bird itself represents *chi*. Fènghuáng is a symbol of *chi*: The air sacs of a real bird and the fact the bird is literally filled with air through the sacs and in its bones are literal representations of this concept. The relationships between bamboo, the didjeridu, and the bird are also very close, although the exact relationship is not overtly mention in the Dreamtime story.

Mythical Animals: Snakes, Androgyny, and Flight

Both instruments are related to mythical animals. Concerning the didjeridu, Karramala is the Old Man Goose of the Dreaming, and the Rainbow Serpent is a snake with a feathered chin. Fènghuáng and Karura are mythical immortal birds related to the shakuhachi.

Fènghuáng, Karura, the Rainbow Serpent, and Karramala all possess elements of androgyny. Fènghuáng is actually two birds: one male and one female. Karura is depicted as male and female, with the male bird playing the shakuhachi and the female playing the hora; these instruments have obvious gender associations in their designs. Similarly, the Rainbow Serpent is androgynous in the Northern Territory, represented as a female in some clans and male in others. In Arnhem Land, the magpie goose, known as Gurrumattji, is sometimes Dhuwa and sometimes Yirritja. Dhuwa clans such as the Galpu and Liyagawumirr sing about Gurrumattji, whereas in north-central Arnhem Land, Gurrumattji is Yirritja among the Ganalbingu

people and some of the Djinang-speaking peoples of the region (Lim, pers. comm., 2009).

Garuda and the Rainbow Serpent also depict elements of a relationship between the bird and the snake. Garuda has a long history of an intimate relationship with snakes: He is considered the devourer of the *nagas*, the serpent beings, and is often depicted in myth and visual and plastic art conquering or eating them. The *Taizōzuzō* and *Taizōzuzōkyo* represent Karura clearly related to snakes wrapped around his body and head. The Rainbow serpent is a snake itself, but has feathered areas on his body, which depict this dual relationship. Old Man Karramala originates on the plateau, the highest area, and comes down to Djulurrk, where he and the Rainbow Snake, who has come from the sea, meet. Here the bird descends from the higher area while the snake emerges from the depths, and they meet in the middle in a ceremonial place.

The mythical and symbolic relationship between snakes and birds is common in many cultures. The snake is often associated with the phenomenal world and the bird the transcendent. This snake/avian relationship takes different forms for the shakuhachi and the didjeridu. Karura in the *Taizōkai mandala* loses its iconological relationship to snakes that was seen earlier in the *Taizōzuzō* and *Taizōzuzōkyo*, while the Rainbow Serpent, with its dominant snake

qualities and associations, remains intimately connected to the didjeridu to this day.

Through its ability to fly, a bird symbolizes the sky, flight, and the world above. In many cultures, the bird symbolizes the concept of transcendence and the soul's flight. The breath can also symbolize the bridge between the physical world and the spirit world. The ornitho-transcendent principle is evident in both the didjeridu and the shakuhachi's traditional use in ceremony or meditative practice as a means to induce an altered level of consciousness for the player and/or the listener. Both are also played during funerals to assist with the passing of the spirit from the body.

Cultural Meaning/Ethnology: Connection to the Natural World

The northern Northern Territory Aboriginal culture has an unbroken tradition with a 50,000-year history. The didjeridu was created within this culture from indigenous belief systems and natural materials. However, the shakuhachi's history is far more complicated and reflects elements of multiple religious ideologies, both native and foreign to China. In fact, the Ryōkai mandala is often spoken of as a relic of Tang Dynasty China, frozen in time and carefully preserved in Japan.

Chinese religious thought was also not singular, as in the case of Aboriginal unbroken tradition unaffected by other cultures. Chinese

cultural thought combined shamanistic, Daoist, and Confucius philosophies before Buddhism came to China in the first century AD. The *Taizōkai* mandala, then, not only is a representation of Esoteric Buddhism but also reflects deep Chinese cosmological thought and belief. For example, Karura contains elements of the Hindu god Garuda as well as the mythical fènghuáng and Chinese astronomy. The shakuhachi and its relationship to the bird and bamboo, then, is a compilation of Daoist and shamanistic thought, evidenced in the early legend of fènghuáng, combined with Esoteric Buddhist philosophies originating in India, all combined into the *Taizōkai* mandala in China. The integrated view of the world and inclusion of multiple religious concepts represented by the mandala is a predominant characteristic of Buddhism. Thus, while the didjeridu evolved out of an isolated culture without foreign influence, the shakuhachi was the result of multiple belief systems from a variety of cultures.

The relationship between avian iconology, bamboo, and an end-blown wind instrument in each of these case studies derive from two cultures extremely different in population, foreign influence, and sociocultural lifestyle. Fifteen hundred years ago, the Aboriginal people of North Arnhem Land were a hunting and gathering semi-nomadic culture that lived intimately on and with the land. They were and are intimately related to the natural world by a deep spiritual

kinship, and devoted much of their time to their ceremonial life and spiritual development. The web of beliefs and practices in Aboriginal culture is best described as mythologically based and centred on a sacramental relationship with the land itself (Oldmeadow 2007: 6). In fact, "it is not too much to say that for the Aborigines . . . not only is nature their temple but also their scripture" (Oldmeadow 2007: 6). Using knowledge of animal traits and behaviours metaphorically is evident in the rock art, and Northern Territory Aboriginal dance displays careful observation of animal activity through its movements.

On the other hand, Tang Dynasty China was one of the most technologically advanced cultures in the world at the time. Ancient Chinese discoveries in engineering, medicine, technology, math, science, transportation, and music were not discovered in the West until thousands of years later (Temple & Needham 1991: 9). Chang-An (present-day Xi'an) was the capital of the Tang dynasty, amd the city where Kūkai studied Esoteric Buddhism with Huikuo in the late 8th century. It was the eastern terminal of the Silk Road, the most populous city in the world at the time (almost two million inhabitants) and is regarded by historians as a high point in Chinese civilization. The city was the centre of cultural and political renaissance: Chang'an attracted people from all over the world who brought their foreign culture and religion with them. In Tang Dynasty China, three primary

religious belief systems affected the culture's view of the natural world: Shamanism, Daoism, and Buddhism.

The View of Animals in Culture

China was a world rich in animals; China's biodiversity was the greatest of any temperate land (Anderson and Raphals in Waldau and Patton 2006: 275). The early Chinese knew their fauna intimately, and Chinese literature reflects the fresh, direct vision of people who knew animals from daily experience (Anderson and Raphals in Waldau and Patton 2006: 275). The Chinese did not perceive a permanent demarcation between the human and animal realms: Animals were part of an organic whole, a larger natural world of which humans themselves constituted just one part. This worldview also spread into the realm of religious practice, translating into a belief system in which animals were both mediums and objects of worship (Sterckx in Waldau and Patton 2006: 260). The animal realm was believed to facilitate and sanction human communication with the divine (Sterckx in Waldau and Patton 2006: 261). It would be inconceivable to think China was not strongly influenced by shamanism (Sterckx in Waldau and Patton 2006: 260). The Chinese word *wu* applied to these early shamans, who could send their souls to the heavens, riding spirit horses and birds (Anderson and Raphals in Waldau and Patton 2006: 280-81).

Animals in early Daoist thought were believed to have varying degrees of spiritual or numinous power. The most numinous had attributes that were the farthest from everyday experience (Anderson and Raphals in Waldau and Patton 2006: 277). Fènghuáng, then, would be an excellent example of an animal with great numinous power. In marked contrast to Aboriginal traditions, real world animals in Daoist traditions almost never had magical or spirit powers. Like the Aboriginal tradition, however, Daoists did not see a sharp barrier between people and animals or between humanity and nature (Anderson and Raphals in Waldau and Patton 2006: 286).

Buddhist belief also implies that humans are loosely related to all beings, whether divine, infernal, or animal (Harris in Waldau and Patton 2006: 208). In the visual milieu of Buddhist traditions, animals play an important role revealing the complexities of Buddhist cosmology, doctrine, and practice while also reflecting indigenous and pre-Buddhist traditional elements. There is an abundance of actual, mythical, and magical animals in Buddhist narrative art and literature, often adopted from earlier pre-Buddhist motifs and transformed by the Buddhist tradition (Vargas in Waldau and Patton 2006: 218).

The use of the physical mechanics of avian respiration and song as a relevant symbol for the didjeridu and the shakuhachi makes sense when seen within the framework of the Aboriginal and early

Chinese relationships to the natural world. Even though their cultures differed greatly in many ways, their knowledge, attitudes, and use of animals metaphorically was surprisingly similar.

Ethnographic Analogy: Contemporary Indications of Bird and Bamboo Iconology

Analogies between avian song and respiration, evident in fifteen-hundred-year-old iconology, still appear in the contemporary performance practices of the didjeridu and the shakuhachi today. For example, traditional didjeridu players wear a feathered headdress for certain performances or ceremonies, depicting a direct and current relationship between the bird and the didjeridu. Syllabic rhythms, circular breathing, and mini-breaths are still an integral element of traditional and contemporary didjeridu performance practices. Shakuhachi honkyoku pieces and performance practices used today still show references to Shingon Buddhism in their names, purposes, and meanings. For example, the piece "Ajikan" is named for the Shingon Buddhist visualization meditation practice of the same name introduced by Kūkai, and the honkyoku piece "Shingetsu" includes a visualization derived from a Shingon Buddhist meditation that focuses on the moon (Ramos, pers. comm., 2009)

Performance Practice and Avian Correlation

Morphology and Its Relationship to Avian Anatomy

Both the didjeridu and the shakuhachi have similarities and differences to avian anatomy and to each other. The didjeridu player's lips work mechanically the same way a bird's syrinx does (Fletcher, pers. comm., 2008). A shakuhachi players lips, however, blow over the top of the flute and are not physiologically like a syrinx or a didjeridu. Both instruments are long, fairly straight, hollow tubes that are analogous to a bird's trachea. In both instruments, the cheeks have air pressure within them while playing, analogous to the anterior air sacs of the bird. Both instruments use deep abdominal breathing rather than chest breathing. The lower abdominal breath used to play the shakuhachi, which expands deeply during an inhale and is physically controlled during exhale is analogous to the abdominal air sacs, keel, and muscles in a bird that pump the air into and through the air sac system. The circular breathing used in playing the didjeridu has multiple analogies to the bird's circular breathing system.

Importance of the Breath

Because the bird is literally full of air through its system of air sacs and pneumatic bones, it is an excellent symbol for air and breath. For all aerophones by definition the breath is the foundation

of producing a sound, and therefore extremely important. The breath in the shakuhachi's case however, also has a spiritual and meditative connection to the breath. The breath in didjeridu practice is special in that the technique of circular breathing is a required playing method for the instrument. Fūyō spoke of *kisoku* and the significance of the breath in shakuhachi practice in his 18th century treatise, and the name of shakuhachi practice, *suizen* ('blowing zen'), distinctly points to the foundational element the breath carries in shakuhachi meditative practice. In addition, Djalu Gurruwiwi spoke often of the significance of the breath in didjeridu music, and Smeykal organizes his compositions around the breath (pers. comm. 2008).

Technique and Repertoire

The shakuhachi uses a number of techniques analogous to elements of avian song including the techniques korokoro, tamane, and tabane discussed previously. In comparison, the didjeridu uses mini-breaths in all styles of play and syllabic phrases in Eastern Arnhem Land and most contemporary styles. Humming or singing a note simultaneously while droning, analogous to the bird's ability to sing two notes simultaneously, is also evident in traditional and contemporary didjeridu styles.

Final Conclusions

In summary, both instruments share significant similarities: They were both originally constructed of bamboo, are both approximately the same age, and both have avian/bamboo iconology related to them. Both have avian analogies in their breathing performance practice and morphology. They both use deep abdominal breathing with active rather than passive exhalation, use cheeks full of air pressure, and have multiple performance practices that mimic birdong. Both have analogies to avian anatomy in their construction. They come from very disparate but contemporary fifteen-hundred-year-old cultures. Both instruments were used for both secular and non-secular functions. In fact, the comparison between didjeridu and the shakuhachi's iconological relationship to the bird and bamboo can be addressed in the form: objects A and B are different but both experience outcome Y. Although these two instruments are from chronologically similar but very different cultures, they both have avian iconology related to them and their anatomical design and performance practices.

An illusory difference between two objects can have an underlying common cause when considered at a more abstract level (Ragin 1987: 48). Each society's cultural belief systems regarding

animals, mythical animals, and the natural world reveals common analogies present in both cultures.

Aboriginal sacred art expresses a formal embodiment of tradition and has constituted a rich symbolic vocabulary, which was always rooted in the natural order. It is a vehicle for the most complex metaphysical ideas and the most resonant spiritual messages (Oldmeadow 2007: 13). Aboriginal doctrine is ingrained in mythology, ritual life and sacred art, and each of these dimensions of Aboriginal culture hinges on a sacramental relationship with the land itself (Oldmeadow 2007: 12). It is no surprise, then, that rock art would carry deeply symbolic meanings regarding the didjeridu and the bird using bird motifs: These two seemingly disparate symbologies were not placed together offhandedly, but rather to communicate a distinct and specific message.

Therefore, the avian symbolism evidenced in the northern part of Northern Territory's rock art, contemporary art, stories of the Dreaming, and legend, has multiple analogic meanings that correlate directly not only to the construction of the instrument itself (the syrinx to the mouth, the instrument to the trachea, the air sacs to the body) but to its performance practices. They are an example of sophisticated symbolic language at use in the culture and the deep and integral relationship between myth, ritual, visual art, and music.

The correlation between avian respiration and vocalisation and the means of playing each instument depicts a purposeful meaning and reason behind the iconographic use of avian symbology in relationship to the design of each instrument, its use of breath, and its performance practices. The choice of bird motifs was not arbitrary.

Symbols are contemporary to the society they are present within: A reference to a modern television show would mean nothing to a medieval knight. Similarly, just as balloons are used today as an example of a translucent sac holding air, a bird's air sac would be an appropriate and applicable symbol in a society living closely with the natural world, living on food they killed themselves. People separated from the natural world, including intimate knowledge, study, and hunting of the animals they eat, would find such a symbol quite meaningless. A bird's air sac may have acted as the perfect analogy for the same concept a balloon might be used for today.

My findings regarding the mechanics of avian respiration and its relationship to circular breathing could relate to circular breathing on instruments from other cultures as well, although they may not have used avian iconology as an analogy. The basic mechanics of circular breathing are similar for any instrument, although the embouchure of each instrument changes the position of the mouth and lips and, therefore, (combined with the amount of backpressure determined by

the shape of the instrument) the difficulty level of circular breathing on each instrument.

The most significant message the avian iconology can impart regarding each of these instruments is also the most simple: the importance of the breath. The bird's body is literally full of air in its system of air sacs and pneumatic bones. Perhaps it was a reminder for the player to remember that the most important part of playing the instrument is the control of the breath. As shakuhachi master Masayuki Koga, head of the Japanese Music Institute of America, states:

> We absolutely respect the classical and traditional music theory, including beat, timing, pitch and harmony. However we regard this precious theory as "Human Law." Breathing belongs to "Nature's Law." (Koga 2009: 3)

Finally, the depiction of the shakuhachi in the *Taizōkai* mandala can date the shakuhachi's early use as a *hōki*, its connection to Shingon Buddhism, and its earliest use in Japan as a spiritual instrument. It suggests a real history for the shakuhachi that may prove a viable alternative to the specious legend. Although the false shakuhachi legend has been examined and disproved by scholars for about a century, it is still very prevalent, and I have not found any discourse, discussions, or suggestions of an alternative by either musicians or scholars. The suggestion that Esoteric Buddhist Tang Dynasty Huikuo rather than Fuke is the Chinese father of the

shakuhachi and that Kūkai rather than Gakushin is responsible for its adoption in Japan is unique to this study. I have used Shingon Buddhist mandala art; historical texts; and shakuhachi repertoire, philosophy, and performance practice to validate my theory. Through this iconological and written evidence I suggest that the shakuhachi was first a tool of Shingon Buddhism before it was a tool of Zen. In addition, identifying the relationship between the Karura, bamboo, and the shakuhachi and the related Chinese history of fènghuáng and the legend of the lü and the origin of music is also unique to this study, as is showing this link through the medium of the *Taizōkai* mandala.

The simultaneous presence of the bird and the didjeridu in fifteen-hundred-year-old Aboriginal art is not my original finding but that of Dr. Chaloupka. However, the cause for this symbolic relationship between avian iconologic motifs, avian respiration and song and the performance practices and playing methods of the didjeridu depicted in the rock art are my theories. Using contemporary scientific knowledge of avian physiology and anatomy and the mechanics of birdsong to provide critical information about the analogies and meanings behind the avian relationship to the didjeridu and the shakuhachi is my unique conclusion. Furthermore, using this avian empirical data to depict relationships between not

only the instrument's physical structure and the avian anatomy but also how the physiology and mechanics of the avian respiratory system and the mechanics of birdsong are analogous to each instrument's breathing and perfomance practices is my unique finding and adds information to the current body of literature about each instrument. The use of bird and bird motifs iconologically with each instrument was purposeful and related to physiological and anatomical elements of real birds and how they related to playing each instrument.

To find significant relationships between an animal (the bird), a plant (bamboo), and an instrument (the didjeridu and the shakuhachi) from two such disparate cultures as Tang Dynasty China and Northern Territory Aboriginal people points to a sophisticated use of symbology by peoples whose daily lives and material possessions were very different. Twenty-first century Westerners often dismiss the possibility that earlier cultures lacking our current industrial and technological innovations could have used sophisticated mental processes and complex iconology. Perhaps an intimate knowledge of the natural world combined with a desire to communicate with the intangible world was a fertile environment from which developed iconology that could transcend both time and language in its meaning.

Appendix I

Aboriginal Glossary

amyili	Katherine Region, Northern Territory
unggul	Ceremonial dance in the Yolngu Matha language, and includes singing and didjeridu playi
orroboree	a ceremonial meeting, a generic word used to include different genres of performance of dance, music, and song.
urruwiwi, Djalu	Galpu clan elder and Yolngu authority on the yidaki
argan, Ash	Didjeridu player, member of the Larrakia Nation
halwangu	A Yolngu clan. Totem is a long-necked turtle
huwa	One of the two moeities of the Yolngu
jawumbu-adjawarrna	Northern Territory sacred rock art site
julurrk	A billabong near the Finniss River, a major resource site for bamboo
urruwiwi, Djalu	Galpu clan elder and Yolngu authority on the yidaki
nagurdurwil	Red Lily Lagoon, West Arnhem Land, Northern Territory
enbi	Bamboo. Refers both to the plant (*Bambusa arnhemica*) and to the didjeridu
unborrk	Didjeridu-accompanied musical style endemic to Western Arnhem Land
urrindju	Finniss River area, Northern Territory. Home of the MakMak Marranunggu people
lago	Name for the didjeridu from Western Arnhem Land
akMak Marranunggu	Clan of the white breasted eagle, who live primarily in Wagait floodplains area southwest of Darwin.
andawuy Yunupingu	co-founder, lead singer, and frontman for the band Yothu Yindi
arrithiel	First language of the MakMak people
ole	A type of bamboo, didjeridu name used by the Gundjeihmi clan of Western North Arnhem Land
amarrgon	Lightning Man, the Dreamtime ancestor responsible for the violent electrical storms of th Arnhem Land plateau.
enpelli	(Gunbalanya) West Arnhem Land
ld Man Karramala	Old Man Goose of the Mak Mak people. Using his didjeridu, Old Man Goose created the rivers in the area.
uleyPuley	The Rainbow Snake of the MakMak people.
Yangga	A didjeridu-accompanied musical and ceremonial genre of the Aboriginal people of the Daly Region.
irdaki, Yidaki	*yiraki*, *yidaki*: didjeridu in the Yolngu Matha language. The two variants in the spelling are pronounced the same.
irritja	One of the two moeities of the Yolngu
irrkala	Ancestral land belonging to the Rirratjingu clan, East Arnhem Land

Appendix II
Japanese Glossary

Term	Definition	Kanji	Japanese phonetic pronounciation in hiragana letters
Ajikan	A Shingon Buddhist practice and a shakuhachi piece.	阿字観	あじかん
Amida Kyō	Buddhist sutra	阿弥陀経	あみだきょう
Araki Kodō	shakuhachi master of the Kinko school	荒木古童	あらきこどう
Asaba Shō	a medieval Tendai encyclopaedia	阿娑縛抄	あさばしょう
Biwa	Japanese lute	琵琶	びわ
Bonji	shakuhachi beggar priests of the Middle Ages	梵字	ぼんじ
Boro	shakuhachi beggar priests of the Middle Ages	梵論/暮露	ぼろ
Boroboro	shakuhachi beggar priests of the Middle Ages	梵論梵論/ 暮露暮露	ぼろぼろ
Boro no Techō	Handbook of Boro Monks (1618)	梵論の手帳/ 暮露の手帳	ぼろのてちょう
Bukkigun	Prose piece by Ikkyū	仏鬼軍	ぶっきぐん
Bushi	Samurai class	武士	ぶし
Byōdō-in	Phoenix Temple in Uji, Japan	平等院	びょうどういん
Chikuzen ichinyo	'bamboo and Zen are one'	竹禅一如	ちくぜんいちにょ
Chōhaku	disciple of Fuke	張伯	ちょうはく
Chōkan	long	長管	ちょうかん
Dai	great	大	だい
Dainichi Buddha	central deity of Japanese Esoteric Buddhism	大日如来	だいにちにょらい
Dainichi-kyō	Mahavairocanabhisambodhi-sutra	大日経	だいにちきょう
Dengaku	Folk harvest dance	田楽	でんがく
Edo	Edo period of Japan: 1603--1867	江戸	えど
Ennin	Tendai Buddhist monk	円仁	えんにん
Fuke	legendary founder of the Fuke sect	普化	ふけ
Fukeshū	Fuke sect	普化宗	ふけしゅう
Fūketsu Dōsha	A Searcher in the Way of the Wind and Holes	風穴道者	ふうけつどうしゃ
Fuki awase	process of the older monks teaching the younger monks in the Fuke sect	吹合	ふきあわせ

Fuki awase sho	public studios where shakuhachi was taught	吹合所	ふきあわせしょ
Fukūjōju Nyorai	Shingon Buddha of the North (Sk. Amoghasiddha)	不空成就如来	ふくうじょうじゅにょらい
Gagaku	Japanese court music 'elegant music'	雅楽	ががく
Gaikyoku	shakuhachi ensemble music	外曲	がいきょく
Gakki	a musical instrument	楽器	がっき
Gakushin	Japanese monk in the legend of Fuke	学心	がくしん
Genzu	current or prevailing pictorial version	現図	げんず
Hachi	eight	八	はち
Hachigaeshi	Returning the begging bowl- Shakuhachi piece	鉢返	はちがえし
Hachiku	type of bamboo	淡竹	はちく
Hara	the 'center of being' located in the abdomen	肚	はら
Heian	Heian period (794-1185)	平安	へいあん
Hichiriki	double reed Japanese aerophone	篳篥	ひちりき
Hisamatsu Fūyō	shakuhachi master (1790-1845)	久松風陽	ひさまつふうよう
Hitori Kotoba	essay written by Hisamatsu Fūyō	独言	ひとりことば
Hitori Mondō	essay written by Hisamatsu Fūyō	独問答	ひとりもんどう
Hitoyogiri	Medieval Japanese end-blown flute	一節切	ひとよぎり
Hōki	meditative tool	法器	ほうき
Honkyoku	original pieces'- shakuhachi music	本曲	ほんきょく
Honsoku	a document that described the main tenets of the Fuke sect	本則	ほんそく
Hōō	Japanese term for the Chinese phoenix	鳳凰	ほうおう
Hora	conch shell trumpet	法螺	ほら
Hotei chiku	a type of bamboo	布袋竹	ほていたけ
Ichion Jōbutsu	enlightenment by a single sound	一音成仏	いちおんじょうぶつ
Ikkyū	Buddhist priest (1394-1482)	一休	いっきゅう
Ji	urushi paste used in bore construction	地	じ
Jiari	shakuhachi constructed with ji	地あり	じあり
Jinashi	shakuhachi constructed without ji	地なし	じなし
Jin Nyodō	shakuhachi master	神如道	じんにょどう
Jisha-bugyō	shogunate office responsible for Buddhist temples and Shinto shrines	寺社奉行	じしゃぶぎょう
Kaiin	an identification document proving membership in the Fuke sect	会印	かいいん
Kaisei Hōgo	essay written by Hisamatsu Fūyō	海静法語	かいせいほうご

Kakuan	nuclear tone	核音	かくおん
Kamakura	Kamakura period (1185-1333)	鎌倉	かまくら
Kangin Shū	collection of kouta poems (1518)	閑吟集	かんぎんしゅう
Kanji	shakuhachi beggar priests of the Middle Age	漢字	かんじ
Kari	to blow by putting the chin up; to raise the tone.	notated in shakuhachi music in katakana	カリ
Karura	Japanese for Sanskrit Garuda, bird deity	迦楼羅	かるら
Katakana	Japanese syllabary	カタカナ or 片仮名	かたかな
Kenkon-bari	wooden sign worn by the komusō: called the 'Heaven and Earth' placard	乾坤帳	けんこんばり
Kesa	shawl worn by devotees of Buddha	袈裟	けさ
Kensho	enlightenment	見性	けんしょう
Ki	universal life energy (Ch. chi)	気	ち/ き
Kichiku	disciple of Gakushin	寄竹	きちく
Kinko Ryū	school of shakuhachi	琴古流	きんこりゅう
Kisoku	spiritual breath	気息	きそく
Kōan	Zen parables	公案	こうあん
Kōbō-Daishi	another name for Kūkai	弘法大師	こうぼうだいし
Koden sankyoku	the three oldest pieces for shakuhachi	古傳三曲	こでんさんきょく
Kojidan	13th century document	古事談	こじだん
Ko	emptiness	虚	こう
Kokū	Flute in an empty Sky- shakuhachi piece	虚空	こくう
Komo	straw mat	菰/薦	こも　&こもう
Komō	emptiness + illusion	虚妄	こも　&こもう
Komosō	beggar priests: precursors to the	薦僧 or 菰僧	こもそう
Komusō	Fuke sect priests	虚無僧	こむそう
Kongōchō-kyō	text (Sk. Vajrasekhara) from which the Kongōkai mandala is based on	金剛頂経	こんごうちょうきょう
Kongōkai Mandara	Diamond World one of the two Shingon Buddhist mandalas that make up the Ryōkai	金剛界曼荼羅	こんごうかいまんだら
korokoro	Shakuhachi trill	notated in katakana	コロコロ
Koto	Japanese zither	琴	こと
Kouta	genre of songs performed during the Middle Ages	小歌	こうた
Kūkai	founder of Shingon Buddhism in Japan	空海	くうかい
Kuroda	Lord of Mino	黒田	くろだ

Kurosawa Kinko	A komuso monk and high ranking samurai who traveled throughout Japan collecting honkyoku from the Fuke temples (1710-1771)	黒澤琴古	くろさわきんこ
Kusabi buki	wedged-shaped shakuhachi phrase	楔吹き	くさびぶき
Kyo	emptiness	虚	きょ
Kyochiku Zenji	"A Searcher in the Name of Wind and Holes" Another name for Rōan	虚竹禅師	きょちくぜんじ
Kyōkun Shō	treatise of the 13th century	教訓抄	きょうくんしょう
Kyorei	Empty bell'- shakuhachi piece	虚鈴	きょれい
Kyosui	empty breathing	虚吸	きょすい
Kyotaku	alternate name for shakuhachi	虚鐸	きょたく
Kyotaku Denki	abbreviation for Kyotaku Denki Kokuji Kai	虚鐸伝記	きょたくでんき
Kyotaku Denki Kokuji Kai	a falsified document the Fuke sect used to describe the origins of the shakuhachi	虚鐸伝記国字解	きょたくでんきこくじかい
Kyōto	city in Japan	京都	きょうと
Kyōun Shū	Crazy Cloud Collection- poems by Ikkyū	狂雲集	きょううんしゅう
Ma	Space, silences between musical phrases	間	ま
Madake	a type of bamboo	真竹	まだけ
Mandara	mandala	曼荼羅	まんだら
Meian Ryū	school of shakuhachi	明暗	めいあん
Meiji	Meiji period (1868-1912)	明治	めいじ
Meri	to blow by putting the chin down; to lower the tone	notated with the katakana symbol *me*	メ
Mikkyō	Esoteric Buddhism, secret teachings	密教	みっきょう
Miyako bushi scale	popular scale of the Edo period	都節音階	みやこぶしおんかい
Mō	illusion	妄	もう
Mount Koya	Kōya san. Sacred mountain to Kūkai	高野山	こうやさん
Mu	nothingness	無	む
Mukaiji	Flute in a Misty Sea- shakuhachi piece	霧海じ	むかいじ
Mui	purposeless activity	無為	むい
Mumahijiri	saints living like horses: shakuhachi beggar priests of the Middle Ages	馬聖	むまひじり
Nara	Nara period (710-794)	奈良	なら
Noh	oldest surviving form of Japanese theatre	能	のう
Nokao Tozan	founder of the Tozan school of shakuhachi	中尾都山	なかおとざん
Prince Kanenaga	son of emperor Go-Daigo (1326-1383)	懐良親王	かねながしんのう

Prince Shōtoku	Shōtoku Taishi (573-621)	聖徳太子	しょうとくたいし
Prince Sadayasu	son of Emperor Seiwa (870-924)	貞保親王	さだやすてんのう
Puku	to blow'	吹	ぷく
Rankyoku	hitoyogiri ensemble music	乱曲	らんぎょく
Reibo	Bell yearning- shakuhachi piece	鈴慕	れいぼ
Rinzai Zen	school of Zen, Japanese for Lin-chi	臨済禅	りんざいぜん
Ritsu	a scale of Chinese descent used in shōmyō and gagaku	律	りつ
Rōan	foreign monk, friend of Ikkyū	朗庵	ろあん/ ろうあん
Ronin	masterless samurai	浪人	ろうにん
Rosai	Japanese name for Lü Cái	呂才	ろさい
Ryōbu-mandara-giki	Shingon Buddhist document	両部曼荼羅儀軌	りょうぶまんだらぎき
Ryōkai Mandara	Ryōkai Mandala	両界曼荼羅	りょうかいまんだら
Ryū	school	流	りゅう
Ryūteki	Japanese transverse flute	龍笛	りゅうてき
Saichō	founder of Tendai Buddhism (767-822)	最澄	さいちょう
Saidaiji Shizai Rukichō	list of instruments imported from China 780	西大寺資財流記帳	さいだいじしざいるきちょ
Sanjūniban shokunin uta awase	16th century collection of poetry	三十二番職人歌合	さんじゅうにばんしょくにん たあわせ
Sankyoku	form of Japanese chamber music played on the shakuhachi, koto and shamisen and often includes vocal accompaniment	三曲	さんきょく
Sanmaya	(Sk. samaya) a set of vows given to a Tantric Buddhist initiate	三摩耶、三昧耶	さまや、さんまや
Sarugaku	form of Japanese popular entertainment	猿楽	さるがく
Satori	Enlightenment	悟り	さとり
Shaku	unit of length	尺	しゃく
Shakuhachi	end-blown Japanese flute	尺八	しゃくはち
Shamisen	Japanese chordophone	三味線	しゃみせん
Shin-Nihon Ongaku	a movement in Japan that occurred in the 1920-30s in which traditional Japanese instruments were altered in order to play Western scales	新日本	しんにほん
Shingon Buddhism	Shingonshū. Japanese Tantric Buddhism	真言宗	しんごんしゅう
Shingon-zen	Shingon Buddhist meditative technique, also called Ajikan	真言禅	しんごんぜん

Shitennō	Four Heavenly Kings	四天王	してんのう
Shō	Japanese bamboo mouth organ	笙	しょう
Shōmyō	Buddhist chant	聲明	しょうみょう
Shōsōin	part of Tōdaiji that houses early shakuhachi	正倉院	しょうそういん
Shugendō	a Japanese folk religion	修験道	しゅげんどう
Shugyō	practice that promotes mental liberation	修行	しゅぎょう
Shuji	Japanese term for Sanskrit 'Bīja'	種子	しゅうじ、しゅじ
Sōkun	second founder of the hitoyogiri	(大森)宗勲	(おおもり)そうくん
Sōsa	founder of hitoyogiri playing	宗左	そうさ
Suizen	"blowing Zen"	吹禅	すいぜん
Syakati	alternate spelling for shakuhachi	尺八	しゃくはち
Tabane	shakuhachi trill using the tongue	notated in katakana	タバネ
Taigen Shō	16th century document	体源抄	たいげんしょう
Taizōkai Mandara	'Womb World' one of the two Shingon Buddhist mandalas that make up the Ryōkai	胎蔵界曼荼羅	たいぞうかいまんだら
Taizōzuzō	8th century collection of sketches	胎蔵図像	たいぞうずぞう
Taizōzuzōkyō	pre-Ryōkai collection of sketches	胎蔵図像経	たいぞうずぞうきょう
Tamane	shakuhachi throat trilling	notated in katakana	タマネ
Te	a type of hitoyogiri music	手	て
Tendai Buddhism	Tendaishū, sect of Esoteric Buddhism in Japan founded by Saicho (767-822).	天台宗	てんだいしゅう
Tengai	basket shaped hat worn by the komuso	天蓋	てんがい
Tempuku	Japanese end blown flute of the Middle Ages	天吹	てんぷく
Tōdaiji	Temple in Nara, Japan	東大寺	とうだいじ
Tōji	Buddhist temple in Kyōto	東寺	とうじ
Tokugawa	Tokugawa period, or Edo period	徳川	とくがわ
Tonami	a deity featured in a poem of Ikkyū		となみ
Tōri	Passing' shakuhachi piece	通り	とうり
Tozan-ryū	a school of shakuhachi	都山流	とざんりゅう
Tsūin	Fuke monk travel permit	通印	つういん
Tsuru no Sugomori	Cranes Nesting-shakuhachi piece	鶴の巣籠	つるのすごもり
Yoshino Shūi	14th century document that discusses events in the Imperial court	吉野拾遺	よしのしゅうい
Yūgen	deep or mysterious	幽玄	ゆうげん
Zazen	sitting meditation	座禅	ざぜん

Zen	form of Buddhism	禅	ぜん
Zen Buddhism	Zenshū	禅宗	ぜんしゅう
Zōchōten	Lord of the South: Buddhist deity	増長天	ぞうちょうてん

Appendix III
Didjeridu Notation System

This dissertation uses a didjeridu notation system I designed. I needed a means of notation that would include all the elements that make up a traditional or contemporary didjeridu piece. The didjeridu pieces I encountered in my fieldwork required a more comprehensive system to explain their elements than any of the notation systems I had seen utilized.

Didjeridu music contains multiple elements, including rhythm, pitch, mouthed and voiced syllables, singing, drones, tonguings, toots of different pitches, inhales of different lengths, and inhales concurrent with producing a sound. My system notates these multiple elements so that a comprehensive understanding of the piece of music is can be transcribed. Figure A-1 describes the different vocables and how I notated them in my system. It includes vocables both mouthed and sung, the rhythmic elements of the piece notated in traditional Western notation, and the pitches of the pieces as they were performed during my fieldwork. The system also lent itself to avian transcriptions to facilitate comparison between didjeridu music and birdsong.

Didjeridu Notation Legend

Vocables

Dith- traditional yirdaki mouth sound

Dhu- traditional yirdaki mouth sound

Dhirrl- traditional yirdaki mouth sound

Dup- traditional yirdaki toot=❖

Dup*- first toot with inhale =❖

Da- mouth sound

Du- mouth sound

Ta- front mouth sound- front of tongue touching back of upper teeth

Ka- back mouth sound- back of tongue touches top of palate

Vrrr- push tongue against teeth (as if pushing water out the mouth)

Whop- jaw closes quickly w/ inhale, no teeth used= Δ

To- 2nd toot, approx. 12th above drone pitch= x

To- 3rd toot- approx. 14th above drone pitch= **X**

To*- 2nd toot done simultaneously w/inhale

To*- 3rd toot done simultaneously w/inhale

V- combination of whop and toot, w/ inhale and a buzz to create a 'dirty' sound= ◇

B - Breath with no sound= *

Any mouth sound with bolded font = sound using voice

(i.e., **da, du, ta ka,** etc.)

Any sound with italicized font= muted sound (for example, Ka mouth position, muted to make it sound like Ta)= (i.e. *ka*)

Figure A-1: My didjeridu notation system

The mouth sounds of traditional East Arnhem Land yirdaki playing are based on the Yolngu language, which includes retroflexion of the tongue, while many of the mouth sounds of contemporary playing are based on syllables of non-Aboriginal origin.

The *toot* is a tone of a different timbre and pitch than the drone. The first toot is usually about a tenth above the drone pitch, and the only toot used in traditional Aboriginal didjeridu music. More contemporary playing includes multiple toots: some didjeridus can supply up to three toots above the drone, although the exact pitches vary with each instrument. The noteheads signify which toot is to be played and are notated in the pitch of the original piece. They further signify whether or not the toot is played combined with an inhale. Since toot pitch varies per instrument, the system is designed so the music can be easily read irrespective of the exact toot pitch of the instrument used by the player. Because didjeridus range in tonic pitch as well, the notation system allows for easy transposition while reading by using the pitches relatively rather literally, though the exact pitches are notated as they were performed for those who seek to make an exact rendition of the piece.

Vocables in didjeridu music have a dual purpose: They are syllables used to describe and teach correct rhythm, and they also represent the exact syllables mouthed or sung within the piece.

Vocables are used to teach didjeridu music in the most traditional forums, well as in the most contemporary. Because they are such a crucial aspect of didjeridu music and a requirement for correct rendition of a piece by a player other than the composer, the vocables must be notated in an easily read manner that is rhythmically clear. For this reason, I placed them in the area where the lyrics would be in a song, to help the player to remember these notes are actually spoken or sung through the instrument with the voice.

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